Support and evaluation of pedagogical innovation using ICT: The TECFA approach with the roman community of the Swiss Virtual Campus

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Abstract:

The TECFA (Technology for instruction and learning) unit of the University of Geneva received from the Swiss Virtual Campus, a 3 years mandate entitled «Pedagogical support and evaluation ». That mandate's tasks are: To provide pedagogical support to the Swiss Virtual Campus (SVC) projects, mostly for the psycho-pedagogical aspects of eLearning; To make an inventory of the projects' pedagogical practices, insisting upon the exploitation of the innovative and interactive potential of Information and Communication Technology (ICT); To set the bases of an evaluation framework that would permit to assess the innovative nature of eLearning pedagogy in collaboration with the national and international community. This paper presents the context, goals, method, early results and questions emerging from the IntersTICES (IntersTICES is a French acronym that stands for "Fostering Integration of Information and Communication Technologies in Higher Education by Research and Support") activities.

Keywords:

eLearning, pedagogy, Open/Distance Learning, Teacher Training/Support.

Introduction:

The development and implementation of eLearning in higher education is generally perceived as a mean to foster a renewal of pedagogy in order to better prepare tomorrow's citizens for the emerging knowledge society. The assumption that the way to go is to integrate active learning and socioconstructivist[1] approaches is now widely accepted in the domain of education. But doing so is a very complex task since, for most of us, the targeted socioconstructivist pedagogy implies a major rupture with our traditional vision and practice of learning and teaching (Viens et Rioux, 2002). Hence, it is not just a matter of technology mastering but a matter of representations, values and attitudes that touch each and every involved actor or institution. To efficiently integrate innovative pedagogical strategies in eLearning, a new culture of learning and teaching is to be developed and supported (Viens, accepted, Blumenfeld & al. 2000).

Beyond this widely accepted position, it is important to state that socioconstructivist approaches are not a magic key to address and solve each and every educational problem. They must not be systematically and blindly applied. They should be the result of a systematic analysis of the educational objectives and of the specific context that prevails. As suggested by field research, namely Blumenfeld & al. (2000), to be effective the implementation of such approach should be planned and supported. As we will see many factors needs to be taken into consideration.

After a year of operation, the SVC steering Committee has come to consider pedagogy as a major issue for the success of the SVC program. To address this issue, two pedagogical mandates have been put in place, one for the German speaking projects (eQuality[2]) and one for the French

[1] Socioconstructivist pedagogical approaches propose learning activities/environment that foster students' autonomy and deep involvement; collaboration and co-construction of knowledge; anchoring of learning activities in real life problems/situations ; deep knowledge construction and higher order thinking skills (like knowledge transfer abilities, mental model development, metacognition and critical reflection).

[2] http://www.equality.unizh.ch/

speaking ones (IntersTICES[3]). IntersTICES is a French acronym that stands for "Fostering Integration of Information and Communication Technologies in Higher Education by Research and Support".

IntersTICES: objectives and tasks

The mandate's tasks that were negotiated with the SVC Steering Committee are:

1. To provide pedagogical support to the SVC projects, mostly for the psycho-pedagogical aspects of eLearning;

2. To make an inventory of the projects' pedagogical practices, insisting upon the exploitation of the innovative and interactive potential of ICT;

3. To set the bases of an evaluation framework that would permit to assess the innovative nature of eLearning pedagogy, in collaboration with the national and international community.

These specific tasks lead to two different types of objectives. First it leads to an objective of action and instructional support as per the first task. Second, the two other tasks call for more research-based concerns. Hence, we are trying to merge these two goal types and to address them simultaneously.

IntersTICES : method

The three main tasks of the mandate are closely interwoven and as such, feed each other as our activities evolve. However, as it is the basic field of action, support activities will supply the other tasks with important and contextual data that will augment the ecological validity of our results. Our research method is inspired by Charlier, Daele & Deschryver (2002) and Viens & al. (2001), and combines research, action in the field and instructors instruction. In doing so, we

[3] http://tecfa.unige.ch/proj/cvs

want to take advantage of a combined research method providing realistic and rich data built from practitioners involved in real actions and to consequently have more chance to lead to significant impacts on both research and practices. In addition, taking into account research on training and support for adult learners (Knowles, 1990), our approach will be participative. It will be defined/adapted/carried out in collaboration with the actors of each of the projects. Their pedagogical choices will be respected as well as the privacy of the collected data. Concerning the first task of the mandate we initially proposed to the projects to start with the following 5-step strategy:

- **Step One: first contact and orientation**

  A meeting with the project's team members to discuss the mandate, mutual expectations and strategies;

- **Step Two: current situation, analysis of needs and planning of follow up**

  A meeting with the project's team members to assess the current situation and to make an analysis of needs based on a 25 questions questionnaire (general information, team member profiles in terms of technology and pedagogy, the pedagogical scenario, institutional aspects, specific needs, ICT and socioconstructivist pedagogy, further planning of support);

- **Step Three: Specific support to the projects**

  According to the needs and action plan identified during the previous meetings and from emerging needs as well;

- **Step Four: animation of a virtual community**

  Sharing of problems and solutions between projects within a collaborative web

environment (Yahoogroups.fr) and reflection of the own practical experiences in discussion groups.

- **Step Five: collective face to face activities**

  Organising face to face activities involving all interested project' members (topic workshop, seminars, etc.), to be scheduled according to convergent interests and needs.

The interviews realised during the second step are recorded and transferred in a word processing file to allow deeper qualitative analyses. The notes taken during the other meetings are filed and will contribute to support the second and third tasks. We will search the web for development resources and reflective texts to stay updated and to provide our projects with the best available procedures and tools.

We are involved in a full collaboration with the other support teams of the SVC. At the institutional level, we participate to co-ordinate committees and other meetings to share our vision of eLearning pedagogy and ICT culture with the greater SVC community. This is an important action since it allows influencing the orientation and the culture of the SVC.

The IntersTICES team has started its field activities in November 2001 and has now fully completed the first step. A first report has been produced in February 2002 and is currently available online on our website (http://tecfa.unige.ch/proj/cvs/doc/rapport_annuel01.pdf). The second step is to be accomplished by the end of June while the other three steps are slowly taking place. We had about 12 direct support meetings and the virtual community of practice has been launched in April. A first thematic face to face meeting is planned for June 5th. The purpose is to share and discuss a matrix linking different types of objectives/abilities/competencies with specific eLearning activities. It will intentionally be held in a train station restaurant in order to provide a fast access for project members who have to travel across the country and to provide an

informal atmosphere that should allow developing a greater feeling of community and sharing among participants.

Early results

Here are the main observations coming out of the sites visit that took place during the first three steps of our action strategy. They will be presented using the following categorization: global observations, technological aspects, pedagogical aspects and institutional/management aspects.

Global observations

The fact that we step in after the initial launching of the projects narrows the role that we can play and the outcomes that we may expect. It is hard to change a three-year project that has already covered more than half of its activities. Thus, it is more difficult to influence the projects that were first accepted in the year 2000. For those projects we may provide guidance for the implementation and evaluation activities rather than for the design and production activities.

Considering the 6 basic phases of a systematic development approach: analyse, design, production, small scale implementation/evaluation, revision, large scale implementation, we have observed that most projects have done a shallow investment in the analyse phase, an insignificant investment in the design, a major and deep investment in the production phase and that the last three phases are rarely addressed. Production of content is the main activity and takes all the teams' energy.

The fact that in order to follow qualification criteria every project involves at least three universities adds complexity to an already complex challenge. Three universities bring in three institutional cultures and make meetings very hard to organize. It may be the price to pay to develop a greater collaboration between institutions. Some projects deal more easily with this problem. Mostly those who have already had collaboratations before the SVC project was set up.

An additional concern, which is also inherited from the qualification criteria set by the SVC program, is the fact that most projects are developed in two or three, if not four languages. This constraint adds complexity and cost to the projects.

Project management becomes a major issue since projects are very complex and involve many partners with different visions, goals, experience, teaching context, teaching/learning culture, etc. The success of SVC projects involves intra and inter universities collaboration and requires people with different background, knowledge and experience of eLearning and pedagogy to work in harmony and in synchronicity. The degree of involvement and available time varies strongly within a project and evolve over a three-year period. To stay effective and to encounter the targeted goals, the distribution of the allocated funds had to be revised for a few projects.

Despite the above contextual factors increasing the complexity of the tasks that projects are asked to fulfil, some projects are working quite well and are producing interesting material. Some are getting involved with us in a reflective questioning that is likely to bring to higher innovative practices. We are getting positive feedback to our June 5th invitation for a reflective seminar on the links of elearning tools and specific pedagogical goals.

Technological aspects

For many projects, the selection of the platform was time and energy consuming. The main problem seems to be that people do not know the available tools, their respective pedagogical potential and conditions of using them. Generally, only a few members of these teams have a sufficiently rich knowledge of and experience with technologies to easily address these kind of issues. In addition, as projects evolve, interact with us and with others projects and are taking pilot test results into consideration, new needs emerge and new tools are requested. Most of the

time the budget does not allow exploring or adding new tools. So, for most projects, we will probably have to provide solutions that will use initial tools in new ways.

Since the teams who faced the platform problem were mostly teams with very few people mastering the technology, we may assume that projects where most participants master technologies are less likely to spend much time in the selection of the platform and more likely to dive rapidly into the development process. But technology expertise of team members is not enough since the initial and ending question, even to select a platform, is what pedagogical activities and tools should be provided to students in order to foster/support the development of such competencies and knowledge.

Pedagogical aspects

We observed an important heterogeneity inter and intra projects in respect to pedagogy. Their vision of the pedagogical potential of eLearning and of active or socioconstructivist pedagogy as well as their own experience are at different levels.

- In respect to innovative pedagogy (student autonomy, collaborative learning, project-based learning, high level cognitive skills/knowledge), pedagogical practices and representations of pedagogy are quite traditional. For about half of them, a fruitful ICT integration seems to rely on the integration of a "mediated-teacher" controlled approach like the following sequence: teach/tell/read, exercises, quiz, test. The focus is on individualized instruction and tailored teaching.
- Some projects want to integrate the communicative and collaborative dimensions of the net, and many of those are doing it as a complementary activity ex-cathedra teaching.

  In a certain number of projects, communication and collaboration are feared or perceived as complex to manage and non-efficient learning activities. In such a context, we observed very

few real case based, project based, or collaborative inquiry approaches. Many factors were brought up by the project members to explain this situation:

- Some want to do it but do not know how to;
- Teams where some colleagues do not want to go that way;
- Modules are already too advanced to go back;
- Very difficult to do with big groups;
- Not efficient for novice learners, just for advanced learners;
- Some feel pressure from SVC authorities to individualize instruction through online activities.

- A little more than 10% use a procedure guideline to help in the development of online pedagogical activities. Hence, development is mostly intuitive.
- Only 5 % have developed a detailed scenario describing the context, the objectives, and a detailed planification of students/teachers/tutors activities based on a need and context analysis.

Institutional/management aspects

As it was said earlier, the number of institutions raises the complexity of the tasks. It is alike with the heterogeneity of team members' visions and experience with both technology and pedagogy. The management of such big projects is quite difficult and a certain number of teams have decided to work in co-operation rather than in collaboration. This is to say that they share the money and tasks, work individually and share the results.

Emerging questions, problems and other issues

For the moment we face many more emerging questions than we have answers and solutions. We provide herein a short list of questions that are of major concern for our mandate.

- What is an innovative pedagogy? Examples? How can we stimulate/support high-level cognitive skills/knowledge? What is added by the integration of ICT?
- How can we develop a detailed scenario? Tools? Guidelines?
- New roles for learners, teachers, tutors, institutions? What are they? How can we support the transition?
- How can we teach a high numbers of students online (100-1000)? Animation, support, evaluation, etc.
- What should/could be done as a group activity and as an individual activity?
- What should be done online and what should be done in face-to-face activities?
- Online tutoring: who does it, how, when, why, how much is required?
- Evaluation issues (students learning, self-evaluation, formative evaluation of prototypes), How to? What? When?
- Students' characteristics: Multilevel background knowledge, perspectives, and language skills.
- Management of decisions and production within teams, and with CVS orientations.

The reaction of the projects to our initiatives varies from ignorance to deep involvement in collaborative activities that are specifically addressing some of the above questions. But globally we can say that the greater majority of them are happy to have access to pedagogical resources and support.

Conclusion

For now we can only conclude, as suggested by Blumenfeld & al. (2000) and Viens & al. (2001), that supporting the development of innovative pedagogy in eLearning at such a large

scale is a complex and difficult challenge. Beyond pedagogy per se, many factors need to be taken into consideration: representations, beliefs, attitudes, abilities, experience with both technology and with active pedagogy for every participant (namely professors, development team, support team, learners, institutions, …). Institutional and societal factors should neither be neglected as major vectors of influence (programs orientation, evaluation procedures, team/project management issues). Our culture of education is not yet a culture of active pedagogy and of inter-intra-institutional collaboration. ELearning is even more associated with individualistic and teacher or machine controlled approaches than face to face teaching. Based on our research experience (Deschryver & Charlier, 2000; Viens & al., 2001; Peraya, D., 2002) the only way to have a significant impact on such a large-scale problem is to adopt a systemic approach taking these multiple actors and their different perspectives into account. This may enable us to propose activities and support tools going beyond pedagogy and addressing culture in terms of harmonization and activation of representations, abilities and current practice. The payoff in terms of culture development and societal changes may be worth the effort. However it is only in the long run that we will be able to assess them.

We have seen a new role coming up for us. In fact, we are in between the SVC steering committee and the projects; we are also in between the project partners coming from different universities and between projects and other available resources (mandates and local resources). In doing so, we are asked to play a mediator role that may be important for the success of the SVC. We may help people from different levels, institutions, and opinions to communicate and to build on each other's perspective.

Finally, we will adapt our strategies in order to take into consideration each projects' specific context and needs. We will also adapt to address the multidimensional problems that are emerging as projects are evolving. In this perspective, our efforts will go beyond the pedagogical

procedures support to embrace the evolution of a vision/culture of ICT integration in online education.

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