The Co-Laboratory: a tool for research and education at the University of Parma

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Abstract—Co-Lab proposal at the University of Parma is meant to create a virtual organization, starting from Humanities and Social Science Faculties, to foster quality concerning education and research through a collaborative approach. The problem is not about IT tools, already available to use, but the creation of a mindset and stimulation of the existing infrastructure to improve results. Collaboration and the development of a project ground for everybody might upgrade learning performances inside the University. Educational frameworks such as Masters and courses have been reinterpreted as collaboration experiences and methods to gather actors have been designed through an experimental environment. Interviews to teachers and students are used to tune up the type of service needed. Organization, technology and knowledge are considered as entangled and all necessary to Co-Lab development.

Collaboration laboratory; educational resources; problem solving; experience sharing

I. BACKGROUND AND PURPOSE. THE PROBLEM.

In present knowledge society learning and educational methods and ways of thinking are basic and important elements, together with techniques for knowledge creation.

We are facing a situation that shows a spontaneous and widespread use by citizens of network and technologies such as dialogue and social environment, for confrontation and opinion exchange.

It is necessary to consider at the same time technologies, knowledge and culture for learning [1].

The University of Parma invested human and financial resources in the education- and research-supporting infrastructure following the current national trends, and made services and tools available for professors and researchers to innovate or improve education and research.

Such an infrastructure facilitates the creation of digital contents and the access through user interfaces.

The University of Parma was one of the first ones to adopt distance education by adhering to the Progetto Nettuno since its beginning. Nowadays there are two organizational structures devoted to the technological support to the University professors: SITA and CEDI. SITA, formerly Centro di Calcolo, includes a Service for the Support to Education and E-Learning that maintains Moodle (LEA) and webinar software, and manages YOUnipr video server for video files produced by University personnel and organizational structures.

The CEDI, Centro Didattico di Ingegneria, was born from a previously existing Laboratory and aims to satisfy specific needs concerning services for Faculty professors.

The University of Parma also offers an Open Archive performing on a web server hosted by CILEA and uses DSPlace, with policies defined by the University Senate that make the insertion of the results of research compulsory as far as doctoral thesis are concerned.

Educational experiences have been already carried out in the last years at University of Parma to create educational resources exploiting technologies in order to support and enrich lectures with innovative methods for individual study, review and knowledge verification.

Literature on e-learning and open access underlines that some obstacles for online or blended learning diffusion can be teachers' lack of technological expertise, sustainability and shortage of resources, including sometimes the quality of products, lack of awareness of the infrastructure, copyright issues and persistence of a conservative approach. Such problems are also present at the University of Parma; in spite of the availability of some updated IT applications and tools, resources are often not enough to supply an organizational support to teaching.

II. THE POSSIBLE SOLUTION

The proposal of Co-Lab rose up inside the Faculty of Arts and Philosophy among a group of teachers and experts, sensitive enough to information technology innovation and willing to solve precise teaching problems: it was to give birth to a sort of informal cooperation which took the name of the digital Co-Lab Unipr (Co-Laboratorio Digitale dell’Università di Parma).

The project inspiration lies upon Licklider, Engelbart and Borgman’s work, and aims to explore all possible opportunities to increase the quality of research and University educational activities by using computer technologies for professor driven activities.

Literally, the Co-Lab is a laboratory created to foster collaboration, in order to experiment the qualitative extension that technological tools allow, and increase student learning and the quality of research.
The Co-Lab focus is therefore on students, who are part of the Laboratory as real actors and not only passive characters; the range of activities also includes support for digital publishing, starting from an investigation on the evaluation of the results of research.

Data updated at July 2011 show that professors and experts from the Faculty of Arts and Philosophy are those, together with Faculty of Engineering ones, who are mostly using learning environment at the University of Parma (35.70% of the total online courses).

The team assumes that listening to needs and the evaluation of educational experiences made online by students and experts can bring significant improvements of teaching and research performance without necessity for particular investments.

Digital Co-Lab has been founded upon 3 basic principles (3C): COLLABORAZIONE (Collaboration and Co-Operation), CONDIVISIONE (sharing of techniques and methods, environments, software and contents - Open Access), CREATIVITA' (creativity and creation) [2].

Our purpose is using e-collaboration style to discover and exploit opportunities offered by IT tools, the Internet and network to reach goals together with others [3].

III. METHODS, MATERIALS AND PROCEDURES

Co-Lab activities are graphically portrayed in Fig. 1; the Agenda lies upon an experimental methodology. We start from the problem to be solved, or the activity to be fostered through a sensible use of the available technical tools. We then agree on purposes to be reached, that are definite and measurable, in order to carry out a step-by-step monitoring during experimentations.

For each activity professors and technicians keep an updated diary.

At the end of each activity the evaluation of the results leads to a collective reflection on all aspects to be improved.

Our team started laboratories and seminars to involve students, professors, teachers, experts and researchers.

The activities carried out until now include: two international Masters (the Master DILL, the Master METAV), the Seminari di Informatica Umanistica, the Workshop Futuro del Libro.

We observed activities and events during their sequence, trying to give advice and support in real time. Observation was carried out both through tutor presence and the use of different methods of communication (Facebook groups and pages, use of Moodle forum activities).

As an example of the CoLab activities, we can describe the Co-Lab support given to the META V Masters. We carried out qualitative interviews asking for the feedback of professors who were involved in META V Master, concerning pros and cons of the experience, their idea of course structure, possible improvements and a creative use of activities and resources they would suggest.

We made proposals for a creative use of tools and systems in order to give professors the opportunity to choose some activities and methods that could be used.

The proposals included a creative usage of user roles and features inside Moodle Learning Management System, in order to create an ideal environment for interactions and the birth of a community.

Interviews to Master course professors.

Structured interviews were very useful as a qualitative methodology, to determine the satisfaction degree of professors concerning the currently installed Moodle Platform, and their ideas concerning best practices and future creative educational activities.

Most professors asked for additional tools to show things to students and interact with them; that shows that they were not aware of webinar services at University.

Many of them asked for applications that are in fact already available on the platform; this means that they are not conscious of all the possibilities that available platforms offer and that it will be necessary and useful to pursue a slightly different point of view concerning service level and approach.

All interviewed experts underlined the importance and effectiveness of the social format for Moodle courses, and an active participation in forum activities. This can give evidence that a social approach inside courses can help to reach student better involvement.

The majority of professors asked for a more functional and flexible version of the platform, as concerns file management and tools to increase interactivity and co-operation.

The opinions we gathered from interviews convinced and led us to the installation of an alternative version of the LMS platform for Co-Lab team, in order to test, together with teachers and students, the advantages of Moodle 2.x releases.

Another example of the Co-Lab support activities can be evidenced by the openEyA laboratory.
We started a laboratory for the creation of online educational competences and the development of specific methodologies and contexts, as the use of multimedia contents is concerned, and a new way of cooperation with Science Dissemination Unit of International Centre for Theoretical Physics; we are testing openEyA (www.openeya.org), that is their open source solution for lecture and events recording [4]. Co-Lab team organized some tutorials for experts, teachers and students, in order to spread the voice and get users' opinions. Tutorial sessions were also practical so that participants could join and test the solution immediately.

Both teachers and students showed great will to learn how to use such tools and students started recording lessons and seminars together with teachers, and interviews to professors.

Next steps will involve experimentation on mobile devices (Apple iPad), and the investigation to find alternative suitable solutions to experiment, in order to offer open resources obtained by recordings carried out with EyA system.

An other important activity of Co-Lab is a continuous training support: MIXMeS laboratory, an uncource to co-operate on real projects

Considering the unconference model, where meeting are driven by participants, we proposed a project driven learning event, a learning by doing and cooperative learning experience, where voluntary experts, teachers and researches can join and decide together the projects they want to work upon; after a survey to investigate attitude and concepts on IT tools and their usage level among future participants, a brainstorming session to identify interesting topics and projects and a training period on the Co-Lab online Learning Platform, participants start working on educational and research projects, acquiring competences and skills concerning the right choice for the specific context and needs. We decided to adopt a plurality of methods and tools, to be coherent with project purposes: in order to choose the best tools and methods participants will have to test and verify them in specific situations and contexts. Participants are going to use and test webinar and chat tools, as Adobe Connect, Google+ hangouts and Skype. They will use social and e-collaboration environments, such as video and image sharing platforms (iTunes-U, YouTube, YOUunpr, Moodle, Vimeo, Flickr), online scheduling tools (Doodle, Google Calendar), Social Bookmarking and Social Reading activities to pursue social learning and will explore the opportunities offered by mobile learning in order to understand if students and teachers are ready for mobile learning and teaching [5] [6].

The laboratory has started in January 2012 and is on the way. The pilot project is involving participants from the Department of Foreign Languages of Faculty of Arts and Philosophy.

IV. FINDINGS AND RESULTS AT THE PRESENT MOMENT

The starting idea sprung up last year and nowadays, after a one-year activity, the Digital Co-Lab managed to make the most of some existing initiatives and aggregate professors by spreading criteria and teaching innovative methods; the Co-Lab team gave all those who were interested in experimenting in a specific educational and research field, an effective support to enhance teaching. We are now gathering further data concerning experimenting in educational frameworks as Master degrees and proficiency courses, as the Digital Librarianship Learning Program and the Master degree in audio-visual media translation.

The Co-Lab is showing efficiency in the solution of the starting problem the idea arose from, that is stimulating the use of the existing infrastructure to improve results concerning education and research carried out at the University, starting from Humanities and Social Science Faculties.

The challenge is starting from where the professors are, taking as a base for activities daily problems to be solved, and stimulating collaborative work and the sharing of experiences as a method.

The methodology chosen by the Co-Lab team, that starts from problems to reach defined and evaluable objectives, is the one that can keep the promise of technologies and make it real, that is an extension of human possibilities to foster an overall improvement of the quality of the University as a whole.

REFERENCES


