# TRAINING EDUCATORS: PLAN FOR REPLICATING THE EXPERIENCE

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**ABSTRACT**

This paper reports on a short survey and a training course offered to the faculty members of the University of Genova with the aim of driving the users of the university Learning Management System in the transition from Moodle 1.9 to Moodle 2, transition that took place in August 2012. The survey has been administered to lectures and staff to understand their needs and gather subscriptions before the actual starting of the training course. A similar process is now in progress in the context of the Bishkek Academy of Finance and Economics (Kyrgyzstan), where the same survey has been recently delivered. Results obtained in both institutions are presented. Indeed, although we are aware of the fact that these two universities represent two different contexts, being geographically far, different in size, and with different diffusion of ICT, we think we can take advantage of the experience of the University of Genova to transfer some practices on the organization and delivery of training courses in the Bishkek Academy of Finance and Economics.

**KEYWORDS**

Moodle, training educators, blended learning, LMS.

## 1. INTRODUCTION

In the last two decades schools, universities, and companies had to prepare for transformation and future learning in the knowledge and networked society. In the context of higher education, many universities have posed a great emphasis on promoting ICT solutions for education practices and one of the most popular choice has been the introduction of Learning Management Systems (LMS) to facilitate anytime, anywhere access to learning content and course administration, with different levels of success (Black et al., 2007; Gautreau, 2011; Janossy, 2008).

Among LMSs, Moodle (Cole and Foster, 2007) is probably the most popular alternative when deciding to adopt an open source solution, as witnessed by the wide community of users and by the active community of developers. Many universities are indeed offering Moodle installations to their instructors and learners (see the official Moodle site https://moodle.org/stats/ for some statistics). However, since it is easier to build learning infrastructures than to change one's teaching style, experience shows that many Moodle instances have been (and still are) mostly used as content repositories despite current trends in education suggest to take advantage of the array of available on-line tools to promote a collaborative learning approach with new roles for teachers and students (Downes, 2005; Anderson, 2007).

Embedding ICT in education is a slow but constant process and the universities can play different roles. From a research perspective, experts in education should develop new solutions and pedagogical models for future teachers, including strategies for engaging students of the 21st century (Prensky, 2001). Technologists should enhance traditional LMSs with new learning environment prototypes, open access repositories, social software based on the Web 2.0 paradigm to promote learners communication, peers collaboration, active participation (Mott, 2010).

From an educational perspective, research results in this field should also be internally disseminated and adopted to "modernize" current university teaching practices. Faculty members are rich sources of content in different areas, but they have different teaching philosophy and they are not necessarily instructional designers or media developers. Therefore they need help to transform their domain knowledge into digital

resources to be used on-line, possibly without excessive preparation time. They also need to be trained to take advantage of technology when used as a tool for education (Elgor, 2005; Kampov-Polevoi, 2010).

When possible, universities or single departments have invested into e-learning or media centers to provide this kind of support trying to engage faculty members and students in a mix of face-to-face and on-line sessions. This is indeed the current situation both at the University of Genova (UNIGE) and at the Bishkek Academy of Finance and Economics (BAFE), although with different diffusion, with the experience of UNIGE being more mature with respect to the current situation in BAFE. In this work we first introduce the two contexts (Section 2) and then compare the results of the surveys which have been delivered within the two communities (Section 3). We then briefly present the training course which has already been offered at UNIGE (Section 4) and a plan for a similar course to be offered at BAFE trying to take advantage from the lesson already learned in UNIGE (Section 5).

# 2. THE TWO CONTEXTS

## 2.1 University of Genova

The University of Genova, Italy, is a traditional university, delivering face-to-face courses. The educational offer ranges from sciences to humanities, from medicine to engineering, from economics to education. Starting from 2004 UNIGE has offered to its students, faculty members, and staff a Moodle-based software platform which is daily used, mostly following a blended learning approach (Cerioli et al., 2011). The users of the LMS are of several types:

1. *Faculty members*, who extend their teaching practices with on-line sessions.
2. *Students*, who find on-line courses and also other services.
3. *Referents*, i.e. members of the administrative staff involved into the administration and management of organizational procedures related to education.
4. *Technical staff*, i.e. two technicians responsible for its correct functioning.
5. A small *Board* of faculty members with different skills, who supervise the whole project, providing guidelines and directions for future development.

Table 1. Size of the on-line community in UNIGE

| | On-line community (21/04/2013) | University (31/12/2012) |
|---|---|---|
| Referents | **37** | - |
| Teachers | **916** | 1323 (69.23%) |
| Students | **28236** | 32393 (87.16%) |
| Courses | **1499** | - |

Table 1 shows some absolute numbers on the size of the LMS community; in the third column the number of faculty members and students of the university are given to provide some percentage values. According to these values, 7 lecturers in 10 manage one or more on-line courses, and more than 8 students in 10 access to the LMS.

Although these numbers are significant, the “quality” of the average exploitation of the available software tools for education is generally poor, and therefore the university has organized in the past methodological courses on Instructional Design (Puddu et al., 2008), based on a variant of the ADDIE (Analysis, Design, Development, Implementation, Evaluation) model; see (Molenda, 2003) for a discussion on the origin of the term ADDIE and http://www.instructionaldesign.org/ for links to material on Instructional Design. Technical courses on the use of Moodle's functions have been organized as well to empower teachers in the management of their on-line courses. Anonymous surveys are also periodically launched to assess the acceptance of the platform or for organizational purposes. The last survey has been administered in February-March 2012, to promote a forthcoming technical training course on Moodle 2 among faculty members and referents, before the software upgrade planned for August 2012. The survey will be presented in Section 3.

## 2.2 Bishkek Academy of Finance and Economics

Kyrgyzstan is a landlocked republic in the eastern part of Central Asia. Bishkek is the capital and largest city. The country counts 52 universities and institutes: 31 state and 21 private. In the capital there are 21 state and 9 private universities. The total number of students across the country currently stands at 230,000 people and the literacy rate is 98.7%. Bishkek Academy of Finance and Economics is a private academy offering mostly scientific and economic courses; the academy counts 53 faculty members and 1200 students.

BAFE started offering its Moodle 1.9 platform in 2011; the users of the LMS are faculty members and first grade students. Like in UNIGE, the platform is administered by a small technical staff coordinated by the chief of the Fundamental Sciences Department.

The survey administered in BAFE, described in detail in Section 3, proposed also some additional questions (see Table 2) to better understand the familiarity with technology for this sample of users. Question S1 checks the frequency of access to Internet and more than one third of the respondents declare they can access only once per month. Question S2 investigates the type of equipment used to access to Internet: 25 respondents use a personal computer, but often this is located in one department room, and shared among several lecturers. The third question, S3, asks about access through mobile devices: Only 2 in 40 respondents answer "Yes". Indeed, access to Internet through mobile devices for Kyrgyzstan's teachers is still too expensive, and therefore 95% of the respondents gave a negative answer.

Table 2. Additional questions for the survey in BAFE

| **Question** | | **Answers** |
|---|---|---|
| **S1.** *How often do you access to the Internet?* | - Every day<br>- Twice a week<br>- Once per month<br>- Other _____ | 14 (35.0%)<br>10 (25.0%)<br>16 (40.0%) |
| **S2.** *Which electronic equipment do you use to access to Internet?* | - Personal computer<br>- Notebook<br>- Mobile phone<br>- iPad | 25 (62.5%)<br>14 (35.0%)<br>1 (02.5%) |
| **S3.** *Can you access to Internet through a mobile phone?* | - Yes<br>- No | 2 (05.0%)<br>38 (95.0%) |

Despite the fact that Kyrgyzstan has now 5 Internet providers, residential access to the network is expensive too and only a small proportion of families can afford to have Internet at home. Therefore also students have difficulties in accessing on-line services. Moreover, BAFE has students coming from rural areas and many of them do not have basic skills for using computer programs. The academy provides access to computer labs with modern equipments and Internet access for the lectures but it cannot offer access to the laboratories for self-study.

Given these premises, it should be clear that the current situation in BAFE is different from that in UNIGE: if lectures can use Internet only once per month and students cannot access as they would like, the use of Moodle cannot go quickly formal. However, the adoption of the LMS has started and, despite all the difficulties, the process is not reversible.

# 3. THE SURVEY

The survey, which has been administered in both institutions, is composed of 10 common questions. Although we are aware that UNIGE and BAFE are very different in size, place, and adoption of ICT, we will present the results in the same figures to save space and discuss the outcomes in parallel.

At UNIGE, the survey has been advertised through the university mailing list, and it has been administered for three weeks using the feedback Moodle module, in February-March 2012. 174 employees, including faculty members and administrative staff involved in the use of the LMS, answered to the proposed questions, on a voluntary base.

At BAFE, the survey has been copied on paper and distributed into the post office box of faculty members, with a letter of the Rector. The survey has been motivated by the need of understanding the use of Moodle in the academy, one year after its introduction. 40 faculty members answered to the survey that means a response rate of 75% (since the academy has 53 faculty members). This high response rate is probably due to the fact that letter of the Rector made the survey official.

Question Q1 is about the use of Moodle and Figure 1 shows the responses in absolute numbers (in this and in the following figures, the caption reports the text of the question).

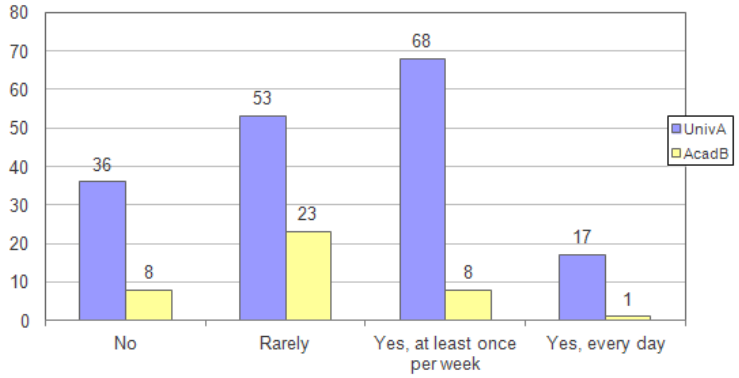


Figure 1. Answers to question Q1 *"Do you use Moodle?"*

Q2 is a multiple choice question, and we asked respondents who use Moodle (138 in UNIGE and 32 in BAFE) to indicate the resources and activities most commonly used. As expected, the content repository function appears to be the most popular in both universities, as shown in Figure 2. Indeed, university teachers are not necessarily instructional design experts and therefore they tend to shift their teaching practices from the class to the on-line platform. This means primarily a transformation of their lectures into digital learning objects. In BAFE, assignments and questionnaires for self-assessment and exams get a score comparable to that of file upload. Lectures who use Moodle are trying to automate content delivery but also assignments and exams that most likely occur within the academy computer labs, during working/lecture hours.

On the other hand, the lack of Internet connection at home, as highlighted in Section 2, does not provide many opportunities for on-line asynchronous communication with students in BAFE, and therefore the use of forum is not much developed, while it results as the second mostly used tool in UNIGE. Wiki is not selected by any respondent in BAFE, probably for the same reason or because the respondents do not really know the meaning/potentiality of such a tool.

The satisfaction level (Q3) for those who use Moodle turns out to be moderate in UNIGE: 45 respondents affirm to be satisfied, answering "Yes, and I could not cope without it", while the second answer "Yes, but it is too time consuming" is chosen by 16. There is of course room for improvement to capture those respondents saying they are "Enough" satisfied (44) and those answering they are not ("Little" or "No" for 8). In BAFE the answer "Enough" gets the highest score (15) followed by "Little" (5) and "Yes, but it is too time consuming" (5), thus suggesting room for improvement also in this case. Figure 3 shows the answers to this question, in percentage values.

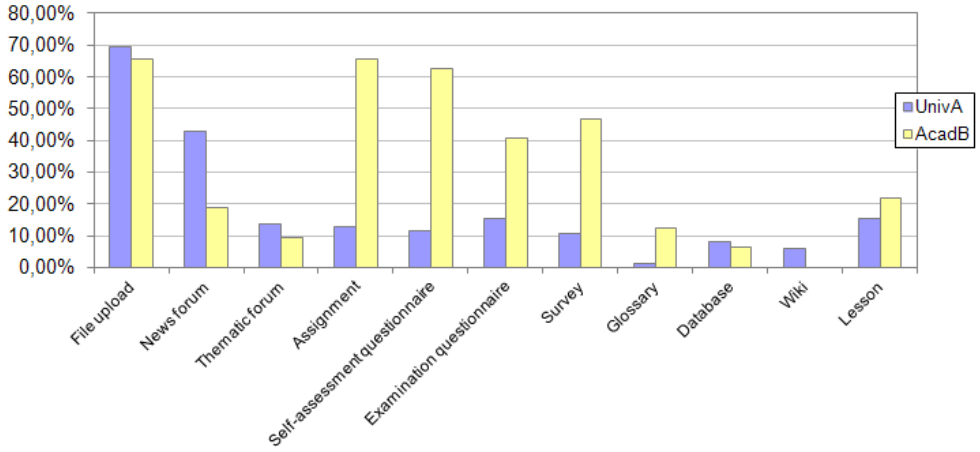


Figure 2. Answers to question Q2 *"If you answered yes to Q1, which are the platform functions you use more?"*

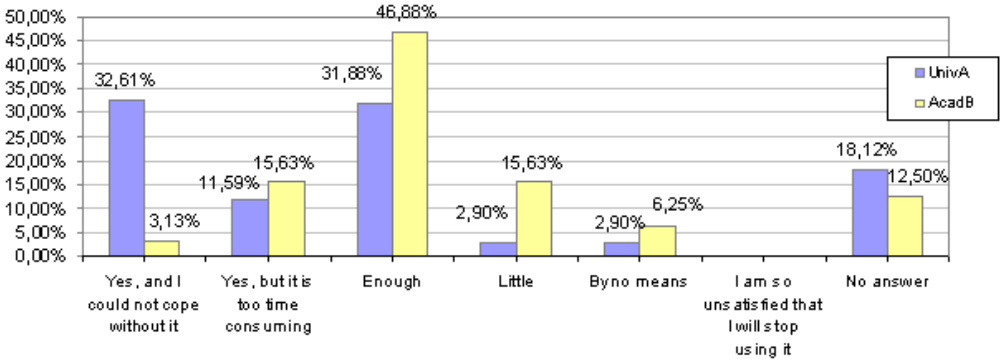


Figure 3. Answers to question Q3 *"If you answered yes to Q1, are you satisfied of Moodle?"*

Q4 is an open-ended question aiming at understanding whether the participants use other external tools for teaching. All BAFE's respondents declare they do not use other on-line tools and the situation is similar in UNIGE for the majority of participants; among the few answers we recall Google Docs (cited 14 times) and personal websites with teaching material (6 times).

Also Q5 is an open-ended question in which respondents should indicate the tools used for the development of their teaching material. In the case of UNIGE, Microsoft PowerPoint is the leader being mentioned in 81 responses. Those who use PowerPoint also mention Word (10) and/or Excel (5). Other tools which received some scores are Adobe Acrobat (11), LaTex (8) and the OpenOffice suite (5). Specialized softwares such as WebMatrix, Adobe Creative Studio, Articulate Studio, HotPotato, and others, got a single point each. In the case of BAFE, only Microsoft Office is reported (with Word, PowerPoint, and Excel).

Q6 asks to list the information sources considered relevant in the construction of teaching material. Scientific papers and journals, digital material accompanying textbooks and slides of the colleagues are the most cited sources for respondents from both institutions. The answers to this question show the differences among the various disciplines. Querying of medical online databases, scientific literature, online consultation of laws and regulations, newspapers and online dictionaries are responses dictated by the disciplines thought by the respondents. Wikipedia is mentioned only twice (and only in UNIGE), probably because its content is considered unreliable by the faculty members of both samples.

The last four questions are related to the organization of the training course itself: 129 respondents in UNIGE claim to be interested in attending it, declaring to be mostly interested into Moodle 2 novelties (110), followed by the always present repository functionality (87), by online questionnaires (76) and by the Lesson module (75). In the case of BAFE, 11 respondents answered "I would be interested but I have no time to attend it" and 2 said definitely "No". Among those who declare an interest in attending the course, the most

required functions result file upload (13), assignment (14), questionnaire (14) and lesson (11); only one respondent is willing to know more about the wiki function. In BAFE's survey question Q8 did not propose Moodle 2 novelties among the possible choices. The adoption of Moodle 1.9 is still recent in the academy, and therefore we thought that suggesting also a software upgrade could have confused (and probably frustrated) the users.

In question Q9 participants had to evaluate their skills in the use of Moodle and identify themselves as "Beginner", i.e., user who had never or very little used the platform, "Intermediate", i.e., user who already had some experience, or "Expert". Figure 4 shows how respondents self-assessed themselves. The answers to this question confirm that the experience in UNIGE is more mature with respect to BAFE where the majority of the sample (39) selected the option "Beginner" and no one selected the option "Expert".

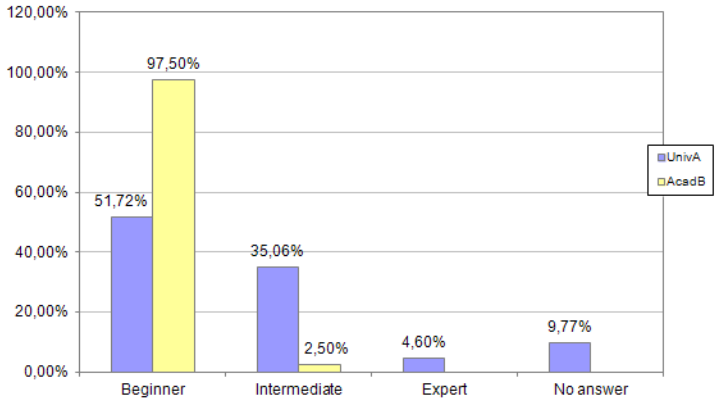


Figure 4. Answers to question Q9 *"How do you evaluate your knowledge of the platform?"*

## 4. THE TRAINING COURSE IN UNIGE

In May-June 2012 the technical course started in UNIGE. Followed on a voluntary base, the course has offered to the learners the possibility to test in advance the new functionalities of Moodle 2. It has also provided to the technical staff the opportunity of checking the proper functioning of the prototype with small groups of participants, before the full scale adoption for the whole community of users.

Participants have been organized in groups, formed on the basis of their self-reported skills. Another indication for groups formation has been the venue of the practical lessons which have been replicated in different areas of the town. 133 users took part to this phase and where split into four groups, for as many parallel courses (two Beginner and two Intermediate). One tutor, in fact a member of the board "Expert" in the use of Moodle 2, was assigned to each group together with a member of the technical staff.

Lessons followed a blended learning approach: Face-to-face meetings have been organized, supported by on-line tutoring through the Moodle 2 platform itself. The first plenary lecture, organized for all participants, introduced the use of ICT and Web 2.0 in education and some basics on Instructional Design. Then, for each group, technical lectures took place in computer labs. Table 3 shows the course syllabus, with the number of hours dedicated to beginner and intermediate participants.

For each group a working space in a new Moodle 2 installation has been prepared. The Moodle 2 space was organized by topics and each participant has been asked to work in a single block (a topic within a Moodle course), covering the teacher role. With this choice, each participant could see the work of the peers.

No ad-hoc material has been prepared but on-line videos and documents have been used as teaching material, in addition to the resources available at the official website http://docs.moodle.org.

Working in a Moodle 2 course with all participants acting as teachers was not easy since they all had the privileges to update course settings and to add/edit/delete course blocks, resources and activities. In addition, some configurations, such as the notification of the delivery of assignments, caused an unusual number of messages that generally does not occur in a "normal" course with only one or few teachers. However, also these unintentional errors have increased the knowledge of the platform, encouraging the learners to carefully check the configuration parameters of each new element added into the on-line space.

Table 3. Training course syllabus

| Content | Beginner | Intermediate |
|---|---|---|
| **Plenary lecture**<br>ICT and Web2.0 in education, Instructional Design. | 2h | 2h |
| **First practical**<br>Course settings, users and roles management, forum, Moodle web page, file and directory management, interaction with external repositories. | 6h | 2h |
| **Second practical**<br>Assignment, poll, reservation, questionnaire, feedback. | 6h | 2h |
| **Third practical**<br>Gradebook, groups, conditional activities. | | 2h |

Particular emphasis has been posed on the Moodle 2 new file management, a feature that has undergone a major change in the new version of the software. The File Picker offers a new solution to file management, but the renewed interface has caused difficulties to most of the users. In addition, the possibility of associating meta data with files, including the license of use, has highlighted a lack of knowledge of this subject among all learners. Fortunately, meta data can be omitted, being an optional feature.

Conditional activities, now present in the default configuration, have been another interesting novelty. Conditional activities offer a sophisticated tool to build different educational paths, dependent from the fulfilment of multiple conditions; none of the course participants had never used them before.

The new graphical interface, including the drag&drop option, has captured some interest. The possibility of hiding blocks in the Dock (an area on the left side of the page where blocks are minimized) has created problems to the users who have inadvertently hidden a block in the Dock and did not know how to restore it.

The Lesson module, even if requested in the initial survey, has not been seen in detail. In fact, with the introduction of conditional activities, personalized learning paths can be obtained without recurring to the Lesson control flow. The Lesson module seemed too sophisticated for the needs of the learners and therefore, although initially planned, was put aside.

As a curiosity, a moment of "confusion" occurred when new links appeared as the content of the course started shaping. This was due to the Autolink feature, activated by default on the site. This feature creates automatic links matching words or phrases used in a course (in web pages, forum messages, etc..) with corresponding names in glossary and database entries, activities and resources. In a course where many users can create resources and activities, often using the same words ("quiz test", "test message", "test text", etc.), an unusual hypertext suddenly appeared. Luckily, Autolink can be disabled, as it was promptly done.

All the four parallel courses reached their end, with less difficulties and more work done - as expected - for the intermediate users who had already some experience in the use of the previous version of the LMS. Even in the absence of a course feedback, the first impression is that learners enjoyed Moodle 2, as witnessed by the enthusiasm demonstrated during the practicals and written in a few private emails.

Formal feedbacks are planned for the end of this academic year. This will be the real test to understand whether the initial enthusiasm of early course participants is confirmed by the majority of colleagues and – even more important - by the community of students.

## 5. PLAN FOR THE TRAINING COURSE IN BAFE

Despite the difficulties already discussed in Section 3, especially the lack of computers for personal work, the few opportunities for accessing the Internet outside working hours, the lack of specialists who can introduce the use of ICT/Moodle for education, and also the lack of time, the adoption of the LMS has started in BAFE. But, to overcome the initial experimental phase and turn it into a reality, both educators and students need to be trained.

All respondents to the survey, except one, self-assessed themselves as "Beginner", and therefore a single training course, with the same syllabus for all participants, is planned. The training course cannot be centred

on the mere transfer of technological knowledge but should first introduce some basic knowledge on Instructional Design. University teachers, in fact, rarely come into contact with educational models but in general they refine a personal style in the design and the management of the teaching/learning process mainly based on in-presence lessons. However, this approach cannot work in technology enhanced learning, which depends on instructional design no matter which is the chosen learning approach – content driven learning, blended learning, collaborative learning.

Without becoming experts, teachers should be aware of the design, development and management of online activities and therefore we suggest to start the course with an introduction on this subject. After that, technical lectures on the use of Moodle should be delivered in a computer class using an interactive whiteboard or video-projector, and followed by on-line support in a blended learning style. For each tool, participants should be encouraged to put their hands-on for practical experience. In the first edition of the course we do not think that it is necessary to introduce all Moodle functions, but only a subset of them. Following the experience of UNIGE, we plan a course of 14 hours, whose syllabus is shown in Table 4, and we also recommend that the material used for lectures is translated in Kyrgyz, the official language of Kyrgyzstan.

Table 4. Plan for a training course for faculty members in BAFE

| Content | Beginner |
|---|---|
| **Introduction**<br>Overview on the use of ICT technologies for educational methods. Content driven learning, blended learning, collaborative learning. Introduction to Instructional Design. Examples. | 2h |
| **Moodle practice 1**<br>Course settings, users and roles management, Moodle web page, file and directory management. | 2h |
| **Moodle practice 2**<br>Forum (individual and group), assignments. | 2h |
| **Moodle practice 3**<br>Questionnaire (questions of different types, building a questionnaire). | 2h |
| **Moodle practice 4**<br>Wiki (individual and group), glossary. | 2h |
| **Moodle practice 5**<br>Course design, i.e., storyboard of the course with a description of the modules, planned activities, initial forum messages for the class, activities scheduling. | 2h |
| **Moodle practice 6**<br>Learning object development: select one of the module defined in the design phase, develop it, and upload into Moodle. | 2h |

Of course, the success of the use of an LMS cannot be measured by considering only its adoption by faculty members, because it is the community of students that plays the major role. In the case of BAFE this means organizing also brief training courses on the use of Web browsers, to facilitate the access to the on-line platform. First year students at BAFE are offered introductory courses on Microsoft Word and PowerPoint that need to be extended with lectures on how to access to the Web, especially for those groups of students coming from rural areas. An easier access to the network is of course an essential requirement to allow the full adoption of Moodle. In the mean time, to help students who have troubles with on-line assignments, group mates could help their peers in the uploading phase on scheduled hours in computer labs.

## 6. CONCLUSION

This paper has presented the situation at UNIGE where a Moodle-based LMS, adopted in 2004, is currently used by the majority of faculty members and students. It has also presented the current situation in a different context, where initial steps have been taken to introduce the use of Moodle for teaching and learning, with the ultimate goal of bridging the gap between education and innovation. Taking advantage of the experience already gained in UNIGE, the same short survey has been administered also in BAFE, helping identifying some difficulties but also some expectations for faculty members. A training course for educators is planned in BAFE, hoping that this could become a driving force to promote changes in the educational practices. Of course, the lack of a pervasive infrastructure and the high cost for network access still constitute a barrier to the complete adoption of LMS in education, but the process has started and it is not reversible. Another step in BAFE is the delivery of a survey for the "other side of the coin", i.e. the community of students, to understand their needs and desires. The results of this survey will be used to plan a training course on Moodle for them as well. Finally, we think that both communities (teachers and students) should also become aware of the potentiality of Web 2.0 and collaborative learning, and this is the future 2.0 task.

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