

Open Source and Web 2.0 for supplementary teaching

Elisa Spadavecchia
Liceo Scientifico Quadri
Vicenza, Italy
spadavecchia@liceoquadri.it

Abstract: The aim of this paper is to point out the achievements and the drawbacks of the integration of Open Source Technology and Internet 2.0 tools with traditional classroom teaching through the account of a supplementary course that took place in an Italian secondary high school last summer holidays. It can be regarded as an example of how the world of traditional school learning can meet the demands of the collaborative and participative E-Learning 2.0 in the broader landscape of the development of a digital competence and life-long learning.

The idea

The idea of integrating Open Source and Web 2.0 tools to enhance student classroom learning and school success was born in June 2008 as a response to the learning needs of eighteen 'weak' 15-year-old students who had to take an extra exam in English as a foreign language by the end of August to pass the school year. The school could afford only a remedial course of 15 hours in the period from June 25th to July 11th, while the exam was scheduled on August 26th and 27th. It was decided to exploit the availability of the Open Source Learning Content Management System (LCMS) Moodle to organize some learning activities (<https://gibi.liceoquadri.it/moodle>) and an online helpdesk for English as a foreign language carried out on a blog (<http://www.sportelloinglese.it>) plus a podcast (<http://www.quadripodcast.it>) to integrate, sustain and enrich the learning opportunities offered in the traditional course by the school. Seventeen out of eighteen students decided to attend the summer course.

Organizational aspects

The objectives to attain by the end of the course were the following:

- To revise the syllabus and improve the students' abilities/competence in the foreign language
- To overcome the learning difficulties in some language strategies
- To get a positive assessment at the final exam
- To recognize the importance of cooperative learning in one's own growth
- To acquire new learning tools for writing in a cooperative way
- To help students become active and co-participative involving them in group work
- To stimulate peer confrontation and horizontal scaffolding

- To learn to use the ICT and Web 2.0 tools to facilitate communication, collaboration and learning.

A pragmatic approach was chosen. The project was developed through the exploitation of the technology and resources already available at school with tools, materials and activities freely available on the Internet besides some personal materials to enrich on the basis of the students' needs. Then, a repository of lessons was created on the e-learning platform Moodle with an individual login for each participant. The following phase was the preparation of the school documents and of an "educational agreement" drawn between the course teacher and the students where all the members of the learning community undertook to participate actively and responsibly to the remedial activities, accepted to interact in group work and agreed that their works were published, shared and assessed within the project.

The initial idea was to motivate the students in trouble to use the web to solve their learning problems preparing some modules where the students were guided gradually in their recovery process aimed at the acquisition of the knowledge, competence and abilities that are necessary to interact in a particular communicative situation or to attain a specific learning objective. This kind of activity demanded a well organized and complex work, with problems of time, localization of the resources, availability, adaptability of the various materials, learning management problems and so on.

Another important consideration stemmed from the awareness of how, after the success of the so called Web 2.0 that is characterised by a more and more active role of its users in the production of contents, some authors have started to criticize the distance learning approach based on the exclusive use of Learning Management Systems (LMS) and foster new types of approach (Cross, 2006). The objective to attain for an effective e-learning is the integration of different kinds of knowledge acquisition, from formal to informal, as it happens in traditional learning. So, it was chosen to integrate the formal experience provided by the online knowledge management and traditional classroom learning activities with others deriving from informal e-learning because of the strong motivation that drives towards what has come to be called "e-learning 2.0" (Downes, 2005). E-learning 2.0 requires a new way of considering online learning. It is not a technical question but rather a methodological issue, in other words it deals with the opportunity of becoming authors in the web as well as readers by means of the creation of blogs and podcasts, photo and document sharing and so on through any kind of social interaction. Thanks to the Web 2.0 tools, the traditional distance practice based on the transmission of contents is turned into a more stimulating, appealing interactive process, an aspect of great importance in one's own learning.

For all these reasons it was decided to prepare only a limited number of modules and a few activities connected to the syllabus of the course focusing the attention on the needs and difficulties on which the students were most in trouble and set the other problems aside. This choice proved to be appropriate, as the results of the learning experience and the feedback by the students showed.

The learning environment

From the didactic point of view, the integration of formal education as it is provided by LMS and informal learning as it can be found in the cooperative Web 2.0 embraces the principles of Constructivism and Socio-Constructivism with its theory of cooperative learning viewed as an interactive process through forms of social interaction and negotiation where people learn the one from the other, both formally and informally. Moodle (<http://www.moodle.org>) is a system that gives educators a great variety of tools to manage and promote learning, from the most traditional teaching methods to the new cooperative approaches based on the constructivist learning theories (Piaget, 1976). Moodle has features that allow communication, interaction at different levels and in different ways and so on. One of its positive characteristics is its ergonomic, in other words the immediacy and relative simplicity for both the teacher/author and the students in creating and performing the activities provided on the platform.

There are other two important factors to consider in the use of this tool from the educational point of view. The former is the reflection that school times are often too narrow and concentrated to give enough opportunities to establish an effective pedagogic relationship with the learners, particularly with students in need of help like the ones considered in this paper. The exploitation of these technological tools allows to extend the learning dialogue to extra-scholastic times, in this case the months of July and August, normally considered as holiday time and not studying time as was the case, unfortunately, for these needy students. The latter is the opportunity of tracing the students' learning activities provided by the platform. In Moodle it is always possible to monitor the users' activities and their connection times, focusing the attention not only on the final product of the interaction but also, more importantly, on their learning process as such.

Moreover, thanks to the use of an e-learning platform integrated with the Web 2.0 tools, the notion of learning environment changes considerably from a traditional learning situation where there is a strong vertical interaction between teacher and learners. The teacher becomes a facilitator, an assistant on demand who is always available and sensitive to their needs, who is learning to use the technological resources and webtools in a parallel developing process together with his/her own students. The position of the learners changes as well. In this learning context the students use an environment that is congenial to them and contribute actively to it also in a cooperative way. Each learner can organize his/her own learning times, spaces, modalities with great flexibility, which is a major advantage particularly during the summer holidays, integrating formal and informal learning occasions. If students are shy in a traditional classroom activity, the mediation of a computer and the Web 2.0 participative tools help them have fewer inhibitions and decrease the factors that create psychological barriers. Horizontal scaffolding can be another advantage for the learners because it cuts down anxiety and helps develop self-confidence.

Teaching activities

Besides the teaching materials uploaded to the repository of the e-learning platform (<https://gibi.liceoquadri.it/moodle>), the course was enriched with some posts on the blog (<http://www.sportelloinglese.it>) and some podcasts (<http://www.quadripodcast.it>) in addition to several individual and collaborative activities, chosen by the tutor with the aim of arranging some assessment tools to use both during and at the end of the learning process. The platform has a memory of the time when a file is uploaded and allows the e-teacher to send his/her feedback about the students' work also individually.

Various kinds of documents were uploaded to the LCMS: texts, audio files, pop songs, video clips and presentations, not just video transpositions of papers but materials that try to exploit the new opportunities offered by multimedia. As Donath points out, "the task of teachers is to create a multimedia learning environment which means to structure and to organize the learning process" (Donath, 2008).

As regards the creation of communicative virtual places, the forum, the chat and the blog were used. As often happens, the forum soon became a virtual place of formal discussion and sharing of problems and tools for peer and vertical assessment of the work. The platform provides an e-mail notification of the new posts in the forum. The use of the blog and the chat, instead, met the demands of an informal learning environment where further peer interaction is allowed, something that is particularly appealing and motivating for teenagers, many of whom are passionate and experienced chatters and bloggers. By the use of both technologies, the condition for effective e-learning through the integration of the formal and informal dimension is fulfilled.

Project results and evaluation

In accordance with existing Italian regulations, the results of the experience were assessed through a traditional written and oral test carried out at school. It is worth noticing, however, that this experience gave the opportunity of assessing not only the students' final preparation after the course, but also their learning process through the monitoring of their activities on the web. All the seventeen students enrolled in the remedial course passed the final exam, some of whom got very positive marks.

For the assessment of the project by the students, a questionnaire was provided online at the URL http://www.farnt.unito.it/trincher/qgen/richiama.asp?codice=elspad_idei_2008 using an online questionnaire generator implemented by prof. Roberto Trincherò at the FAR (Formazione Aperta in Rete) at the University of Turin. The evaluation of the project was surprisingly very positive, as shown in figure 1.

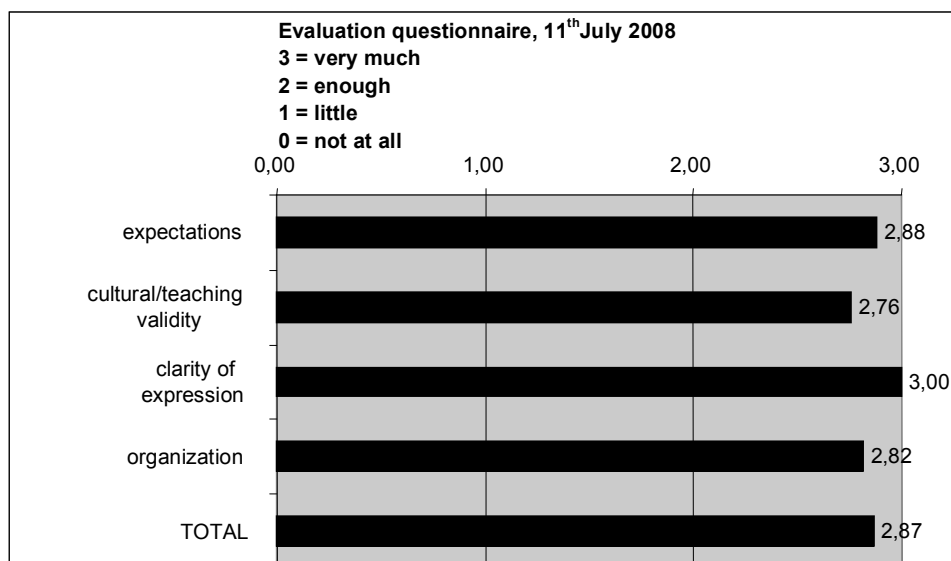


Figure 1. Results of the evaluation questionnaire by the attendees

Besides the recognition of the validity of such a kind of learning experience as an alternative to traditional teaching practice, the students suggested to extend the project to the ordinary classes during the following school year as a form of integration and enrichment of curricular classroom activities.

As far as the teacher's opinion is concerned, the educational and democratic value of the Open Source technology and Web 2.0 tools that allow learning without the necessity of great economic investments or the use of pirate programs in addition to the positive sides of cooperative learning in the learners' growth were the main advantages; a great organizational effort compensated for by a modest budget (online supplementary activities are not recognized explicitly by the Italian Ministry of Education) and the e-tutor's loneliness in assuming his/her teaching responsibilities or making his/her educational choices were the most important negative aspects.

Conclusion

Without pretending to offer a universally valid answer to the problem of the effectiveness of the use of LMS and the web 2.0 tools in teaching practice, the experience described in this paper points out that their progressive introduction can represent a further learning opportunity in both teaching and learning. This does not imply that being able to use the new technologies leads automatically to the acquisition of an effective digital competence as the one recommended among the key competences for life-long learning by the European Parliament (EEC, 2006), but the use of ICT can offer some opportunities that can be seized just in the same way as a rich semantic-lexical competence can favour deeper thinking abilities. The challenge is now to keep the students' interest towards this learning experience alive, perpetuating it in time and adapting it to their educational needs.

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