Chapter 13
LMS Adoption at the University of Genova: Ten Years After

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ABSTRACT
The last two decades have seen the spread of LMS among schools, universities, and companies to augment the traditional teaching process with ICT and network technologies. This chapter presents the process leading to the adoption of a Moodle based LMS at the University of Genova in the last decade. By analyzing the data collected from the LMS logs and from questionnaires proposed both to students and teachers, we found out that the needs of the stakeholders are largely limited to resource sharing and organizational support, satisfactorily provided by the current service. Further improvements could be achieved by the introduction of a policy encouraging or forcing the teachers to use the provided LMS. A project on instructional design and, as a case study, the evolution of some of the courses involved in it are also presented. Though the redesign of such courses has improved their results, the impact on the overall organization of the degree program has been negative. We infer that this is due to the excessive freedom the students enjoy in taking their exams in Italy.

INTRODUCTION
The advent of the Web in the mid-1990s has dramatically changed the way people communicate, look for information, produce and share textual and multimedia content, access to (online) services, buy goods, etc. The Web – the largest cognitive artefact ever built – offers an easy access to data, their sharing, and collaborative elaboration, and this new opportunity has also an important impact on education. Indeed, the different forms of communication, cooperation, and knowledge building, which are central in modern theories on education,
are not anymore limited to classroom activities. But, they can be moved online thanks to an easy access to network technologies. To prompt these new forms of interaction, in the last two decades, schools, universities, and companies have started offering LMS (Learning Management Systems) to the different actors involved in education.

The adoption of LMS at the university level may follow two approaches, most often with the early adopters evolving from the first to the next. From the one hand, single departments or degree programs may develop or customize their own LMS, offering students and teachers a supplement to the traditional educational process. This approach leads in time to a plethora of different systems coexisting in the same institution, often using different technologies, maintained by separate groups of technical staff; thus, it is hardly scalable. This was, indeed, the situation for the case study of the University of Genova, up to 2004. On the other hand, the adoption and management of a LMS may be centralized for all the substructures. At the University of Genova, such a centralized service, called AulaWeb, was introduced in the academic year 2004/05 and is currently supporting education for all the Faculties of the University, as this chapter will illustrate.

Measuring the achievements of an institution in implementing technology enhanced learning, being completely online or a blend of face-to-face and Web-based activities, is difficult. Indirect and partial information may be obtained by a systematic analysis of LMS usage. Indeed, if the activities are taken online, the kind of tools used and the interactions between students and system give a rough measure of involvement. Unfortunately, according to (Janossy, 2008), even quantitative analyses of LMS usage are generally difficult to obtain, since those available rely on incomplete log data or ad hoc surveys. One of the major contributions of this chapter is presenting a large amount of data about the usage of LMS across all the Faculties of the University of Genova. Janossy (2008) proposes a five levels model to measure LMS usage. The five levels span from Level 0, corresponding to no use of the LMS, to Level 4 in which students’ activities are recorded and made accessible to all students for review, or made available in real time to remote participants. Surprisingly, this classification does not include collaborative group activities, which indeed started to appear in the recent years. In this metric, the University of Genova is at Level 3. In addition to course syllabus and reading materials (Level 1), assignments and assessments (Level 2), the students also find forums for asynchronous communication and online tests to evaluate their preparation, although with different numbers depending on their curricula.

After a short analysis of background literature in Section 2, this chapter describes in Section 3 the adoption of the central LMS software platform at the University of Genova, from the early experiences to the present. Data extracted from the log files of the LMS are presented together with a project, focussing on instructional design and ICT supported learning. In Section 4 the findings obtained by two surveys administered respectively to faculty members and students are discussed. Finally, Section 5 presents conclusions and future research directions.

**BACKGROUND**

Learning Management Systems have become an important resource for Higher Education Institutions willing to modernise their curricula and teaching methods as well as to widen their audience by attracting new students, geographically remote or adults, who could not otherwise attend traditional lectures. This is witnessed by the rich literature on e-learning, ranging from the proposal of different pedagogical models, to the description of LMS technical development, adoption, qualitative and quantitative usage, to the analysis of success case studies at the school, university or company levels.
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