**BLENDED LEARNING**

Our department conceived the proposed LMS system as a preoperational or follow-up step to face-to-face education, thus facilitating a blended learning approach. In other words, one goal was for the LMS to suitably augment the quality of face-to-face education and student support. There is evidence that blended learning has the potential to be more effective and efficient when compared to a traditional classroom model (Heterick & Twigg, 2003 and Twigg, 2003).

Blended learning is defined as a learning solution, which implies a mix of the following (Garrison & Kanuka, 2004; Graham, 2005):

1. Varied delivery media: e.g., non-technology-supported and online electronic multimedia material.
2. Varied learning events: e.g., individual, self-paced and collective ones.
3. Electronic performance support: e.g., instruction based and knowledge management support.

Research shows that learning based on the blending of face-to-face with online training, and of formal and informal learning is usually more easily accepted than online-training alone (i.e., Colis & Moonen, 2001; Rovai & Jordan, 2004). Also, evidence suggests that the learning experience is better and completion rates are greater where there

is tutor support either face to face, on-line or over the telephone (Hamburg, Engert, Anke & Marin, 2008). Some of the advantages of traditional face to face classroom education are: (a) social interaction through personal contact and the exchange of ideas, (b) familiarity, customary method, and (c) an environment which supports multiple communication channels. (Paraskakis, Konstantinidis, Bouras, Perakis, Pantelopoulos, & Hatziapostolou, 2009).

To enable the augmentation of the face to face learning, researchers suggest a blended learning approach that combines the use of distance learning methods with the interactions which occur within a traditional classroom. Instructors mention that the blended learning model enables them to complete their educational goals more effectively than the traditional model (Irons, Keel & Bielema, 2002). Most instructors note increased interaction with students and of the students between them.Much of the satisfaction and success of blended learning experiences can be attributed to the interactive capabilities of Internet communication technology (Garrison & Cleveland-Innes, 2003; Swan, K., 2001. What makes blended learning particularly effective is its ability to facilitate a community of inquiry (Garrison & Kanuka, 2004). Students’ contact with departments increases through the blended learning model, as does their thoughtful participation in the educational activities (Garnham & Kaleta, 2002).

According to Voci & Young (2001), effective blended learning is balanced learning. This balance is accomplished by combining the advantages of two forms of teaching, traditional classroom education and self-adjusting distance learning. Some of the advantages of technologically supported education include: (a) respect towards student differences and preferences in style and rhythm of learning, (b) flexibility, since the virtual (online) classroom is available 24 hours a day, seven days a week, and (c) the educational material, which is available online, is not influenced by human weaknesses, such as instructor inability (e.g., sickness).

Furthermore, the main goal of blended learning is to combine the best features of traditional education with the most prominent characteristics of online teaching, so as to encourage independent learning and decrease the required classroom time. In order for the above goal to be accomplished, it is of vital importance to guarantee the correct ratio in the use of the different educational means.

To recapitulate, according to Trasler (2002) the advantages of blended learning include: (a) an ease in functionality and student time organization, (b) increase in interaction between students, or students and instructors, (c) spatial and temporal flexibility, (d) increased learning, (e) decrease in student drop outs, and (f) adjustability to each student’s preferences (e.g., personalized learning).

In order to support blended learning, LMSs are widely used. An LMS is usually a web-based system facilitating the organization and coordination of the learning material of an educational institution. LMSs also facilitate communication and collaboration of the students through the support of communication, collaboration and Web 2.0 tools such as forums, blogs, wikis, chat rooms etc.

Although a large number of proprietary LMS solutions are available, open source technologies are more approachable in a research context. For example, the use of an open source package was also preferred by Milano, Vanfretti, & Morataya (2007) for the following pedagogical reasons:

• The mind of the learner should be opened. S/he should not become accustomed to a program that gives all the answers.

• The learning process should develop the curiosity of the learner. Only if the code is open can the learner explore all software features