Chapter VII
Knowledge Flow and Learning
Design Models towards Lifewide E-Learning Environments

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ABSTRACT

This chapter considers the affordances of social networking theories and tools in building new and effective e-learning practices. We argue that “Connectivism” (social networking applied to learning and knowledge contexts) can lead to a re-conceptualization of learning in which formal, non-formal, and informal learning can be integrated so as to build potentially lifelong learning activities which can be experienced in “personal learning environments”. In order to provide a guide for the design, development, and improvement of e-learning environments, as well as for the related learning activities, we provide a knowledge flow model and the consequent learning design model, highlighting the stages of learning, the enabling conditions, and possible technological tools to be used for the purpose. In the conclusion to the chapter, the derived model is applied in a possible scenario of formal learning in order to show how the learning process can be designed according to the presented theory.
Formal, non-formal and informal learning have become subjects of study and wide experimentation. The pervasiveness of telematic technologies in current learning and knowledge processes justifies the hopes of success and the emerging approaches are becoming always more open, de-structured and non-formalised. According to this vision, formal, informal and non formal learning can be seen as integration of actions and situations which can be developed both in the network and in physical contexts. New reflections can therefore be made on the practice known as e-learning, starting from a revision of these dimensions.

**Formal learning** has been defined as a type of learning that occurs within an organized and structured context (formal education, in-company training) and is intentional from the learner’s perspective. Normally it leads to a formal recognition (diploma, certificate) (European Commission, 2000; Cedefop, 2000). As regards adult e-learning, formal education in the last decade has encountered and experimented a sort of paradox which often witnessed low returns in term of knowledge acquisition, compared to cost investment which is often significantly high.

**Non-formal learning** has been defined as learning embedded in planned activities that are not explicitly designated as learning, but which contain an important learning element. Non-formal learning is intentional from the learner’s point of view (Cedefop, 2000). **Informal learning** is learning resulting from daily life activities related to work, family, or leisure. It is often referred to as experiential learning and can to a certain degree be understood as “accidental” learning. It is not structured in terms of learning objectives, learning time and/or learning support. Typically, it does not lead to certification. Informal learning may be intentional but in most cases, it is non-intentional (or incidental/random) (Cedefop, 2000). Informal learning is an adaptive process determined by the exploration need which is realised in specific experiential contexts (Calvani, 2005). People acquire their competence in everyday life, talking, observing others, trying and making mistakes, working together with colleagues, more or less expert. Informal learning can therefore be intended as the natural corollary of daily life (Bonaiuti, 2006).

**Intentionality** of learning is a discriminating factor which shifts “non-formal” learning into “non-intentional” or “incidental” learning. Contrary to what happens in formal learning, informal learning is not necessarily intentional and can be un-recognized sometimes by the subject himself as knowledge and competence acquisition (Cross, 2006). According to such perspective, which is aimed at retrieving and valuing the potentialities embedded in spontaneous contexts – in this case the network – the emerging domain of study of informal e-learning is receiving greater attention because of the widespread social networking practices and technologies. The online transposition of the social network is nowadays referred to as the “social networking” phenomena, and it is related to a set of available technologies and services allowing individuals to take part in network-based virtual communities. Social networking is emerging as a highly natural practice because it is deeply rooted in our daily behaviour; spontaneous relations, interactions and conversations support informal learning practices, contributing to the creation and transmission of knowledge. In informal learning practices the social behaviour and the support of technologies converge toward the “network”; a network made of people and resources, a social network, unified by personal needs or common goals, interaction policies, protocol and rules and telematic systems all together, which favour the growth of a sense of belonging to the “net” community.

At the same time, the culture of lifelong learning is gaining importance as one of the most effective answers to face the challenges brought