

## INTERACTION MATTERS IN M-LEARNING IN SITU

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### Abstract

The use of mobile devices and Location-based Systems (LBS) enables technicians and practitioners to rethink learning, teaching and assessment strategies. The “Effective assessment in digital age” report claimed that technology has to be used to create authentic assessment (JISC, 2010). This authentic means that learners should be able to demonstrate and practice their skills like in real life tasks. Mobile phones integrate features such as cameras, Internet connection, GPS, etc. Several researchers study the effect of using these features to support situated learning activities. With the population of smartphones, approximately 10 years ago, the authors in this field showed special interest in understanding how to support principles of self-motivation and engagement during an exploratory learning experience by supporting students in their interaction with the space and with other players (Sharples et al, 2002; Facer et al., 2004). In particular, some authors studied how to use wireless communication and context awareness to assess/learn in situ the knowledge of students about local information (Huang et al 2009; Hwang & Chang, 2011, Santos et al, 2011). Nova, Girardin, & Dillenbourg (2005) performed an experiment where groups of students had to use Tablet PCs finding a virtual object in a campus by collaborating with team mates. As an experimental condition they studied the effect of using (or not) context-aware mechanisms with different groups. The groups without context-aware mechanisms had better communication with their partners than the groups that had the awareness. Their conclusion was: “location is not enough”, space and location-awareness are important data that can be provided during learning in situ experiences but the information cannot be limited to a simple broadcast of people’s positions. Previous studies have been mainly focused on understanding the learning benefits and behaviour of students when interacting with real locations/objects & peers by using mobile devices. But in this context two questions arise:

- Are the current m-learning in situ solutions designed in a way that allows authors and learners to understand how to exploit the interaction possibilities (not only with physical objects/locations but also with their peers) in terms of learning benefits?
- Which contextual and technological factors have to be considered when m-learning in situ activities are designed to support and promote the development of higher order skills?

Holland et al (2000) claim that the organization of cognitive systems is extended to cover the interactions between people and with the resources and materials of the environment. The authors propose that cognitive processes are distributed amongst (1) other persons, (2) coordinated between internal and external structures and (3) distributed in time. For this reason I claim that in order to

enhance cognitive processes, m-learning solutions have to provide guidance and scaffolding mechanisms (e.g. hints, awareness) based on the interaction possibilities. These mechanisms have to facilitate the design and enactment of the m-learning in situ activity, to enhance the process of decision-making and meaning making when interacting with contextual learning resources. The European Network of Excellence in TEL, STELLAR (2011) published a report titled “Education in the wild: contextual and location-based mobile learning in action” this report claims that a re-conceptualization of educational theories have to be done in order to develop an approach for the present and future of learning designs (Cook, 2010). Cook proposes the term: Augmented Contexts for Development (ACD) where students have to use mobile phones to interact with each other and interact with the physical environment with the goal of creating their own ACD. In the line of understanding better how to improve the design of contextual m-learning in situ environments, Santos et al, (2013) study in real scenarios the factors that have to be considered when designing, virtually or in situ, m-learning situated activities. The results lead to a set of implications (in design, enactment and monitoring) for the development of m- learning systems.

The main aim of this idea is to discuss how as technicians our role should be to design/implement tools that maximize the interaction possibilities of learning physical contexts. This idea claims that the interaction possibilities of mobile devices and their corresponding features (e.g. gps, camera, accelerometer..) can be studied and captured as learning scaffolding mechanisms and included in authoring tools to guide users (e.g. teachers, learners) to understand how to create contextual learning in situ resources and activities. Our view is that mobile devices have the potential to develop new types of learning resources integrated within real locations (and physical objects) in ways that stimulate and motivate students and support their meaning making. My interest deals on researching a new approach for learning in situ activities, enhancing their design, creation, implementation and execution in order to support users through the different phases of these activities. M-learning tools should have to allow users to understand how to create personalized contextual learning content to potentiate their explorative and creativity skills, being more aligned with the current learning objectives of the educational curriculums.

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