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EDITORIAL

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Focus on:
ICT and Experiential Learning: Models, Methodologies, Technologies, Research

This paper is the editorial page devoted to presenting the topic of the first issue in the year 2017 of Je-LKS and the papers that are comprised in it. Since a clear, unambiguous, and generally accepted definition of experiential learning is hard to give, the first section will consider the more recent frameworks of experiential learning and the manners in which the concept is used. Then, the next section will deal with the analysis of ways in which ICT (Information and Communication Technology) can broaden and enhance experiential learning in higher education settings both for experiential approaches in classrooms and out-of-class experiences.

The issue focuses on the interplay between experiential learning and ICT in higher education settings. Although both of them have long traditions of theorising and practice, as yet, there is little research on the ways in which the ICT can provide support and maximise experiential learning. The aim that it was intended to achieve is to provide all high quality research evidence relevant for scholars, stakeholders, university faculty members, but also for students and newcomers to this expanding field.

The primary reason that drove me to make this choice is the awareness that higher education institutions have an increasing need to include experiential learning practices within the curriculum for at least three goals. Firstly, to improve the employability of graduates by meeting employers' skill needs; secondly, to make more competitive many adults who are returning to study to advance or change their careers; thirdly, to enhance student learning, allowing to link theoretical concepts with their applicability, as well as establishing a complementary relationship of thought and action.

The second reason is to offer examples of how ICT can aid to improve different aspects of experiential learning, to overcome the restrictions of lecture-based learning, to involve and engage students in both experiential approaches

in classrooms and out-of-class experiences.

In this Editorial the topic of the issue and the papers that are comprised in will be presented through an excursus of the more recent frameworks of experiential learning and the analysis of ways in which ICT can broaden and enhance experiential learning in higher education settings.

Since a clear, unambiguous, and generally accepted definition of experiential learning is hard to give, one of the first things to consider is identification of the more recent frameworks of experiential learning and the manners in which the concept is used.

In spite of the fact that Dewey never used the expression experiential learning, he is considered the most famous founders of its theoretical frame. That's because in his book "Experience and Education" (1938), he has highlighted the relationship between education and experience and has emphasized the educative value of experience and reflection. According to Dewey, «education in order to accomplish its ends both for the individual learner and for society must be based upon experience» (p. 89), but the experience is educative only when it is guided by two chief principles: continuity and interaction. Continuity and interaction describe the aspects of the better quality of human experience as they relate respectively to the individual and environment. A system of education based upon the connection of education with experience must discriminate and select «the kind of present experiences that live fruitfully and creatively in subsequent experiences" and modify the growth of learner "not only physically but intellectually and morally» (continuity). In addition, it must adjust the "objective conditions" of the situations in which a learner is engaged, that is, it must treat «what is done by the educator and the way in which it is done […] equipment, books, apparatus, toys, games played […] and, most important of all, the total social set-up of the situations» (p. 45) (interaction). However "the heart of intellectual organization", as claimed by Dewey, is to reflect over what has been done so as to discriminate, record, and organize "the significant features of a developing experience". The assumptions that underlie the Dewey' educational philosophy relate to the view of learning as doing, observing, and reflecting on experience.

Following Dewey, Kolb elaborated the most fully articulated and consolidated theory of experiential learning at the heart of which lies the idea that learning is experiential learning since it is «the process whereby knowledge is created through the transformation of experience» (1984, p. 41). The crucial purpose of Kolb's work (1971; Kolb, & Kolb, 2005) is to explain how experience is transformed into learning and knowledge. More precisely, according to his theory, learning occurs through a recursive process consisting of four stages with regard to two opposing modes of grasping experience (concrete expe-

rience and abstract conceptualization) and transforming experience (reflective observation and active experimentation), combined alternatively. In this holistic model, «concrete experiences (experiencing) are the basis for observations and reflections. These reflections are assimilated and distilled into abstract concepts (thinking) from which new implications for action can be drawn. These implications can be actively tested and serve as guides in creating new experiences» (Kolb, & Yeganeh, 2012). Since its first statement in 1971, the Kolb's experiential learning theory has stimulated many research studies concerned with its theoretical, methodological, and practical issues and has especially attracted a renewed interest and attention for traditional methods that combine work and study in higher education, such as field placement, apprenticeship, and so on. And that's although Kolb has always made clear that his «intention in using the term "experiential" was to describe a theoretical perspective on the individual learning process that applied in all situations and arenas of life […]. Truth is not manifest in experience; it must be inferred by a process of learning that questions preconceptions of direct experience, tempers the vividness and emotion of experience with critical reflection, and extracts the correct lessons from the consequences of action» (Kolb, 2015, pp. XX-XXI).

Starting from the teachings of Dewey and Kolb, contemporary scholars have developed further research on the experiential learning. They have paid attention to the teaching approaches for the experiential education (Wurdinger, & Carlson, 2009; Boud, 1989), have unveiled what abilities and emotions are needed to be highly effectiveness in the experiential learning process (Finch et al., 2015; Usher, 2009), have designed materials and exercises (Beard, & Wilson, 2002), have elaborated methodology to assess the experiential learning processes (De Zan et al., 2015).

Despite the wealth of theoretical, methodological, and empirical contributions, and the evidences of experiential learning's effectiveness in the development of life-skills and higher-order thinking skills, however, passive learning methods are still commonly used in classes and lecture continues to be the main method used in higher education. In order to better understand this phenomenon, **Scott Wurdinger** and **Pete Allison** (*Faculty Perceptions and Use of Experiential Learning In Higher Education*) present the results of a research study on use of experiential learning that surveyed two hundred ninety-five faculty teaching in U.S. undergraduate programs. Their investigation highlights that «the survey participants recognize the values and benefits of experiential learning, but use it very sparingly». In the paper, Wurdinger and Allison have also realized that, despite the important benefits of experiential learning to students, expansion of such strategies is being impeded by a number of barriers such as class times, classroom structure, class size is too large, not enough time, and so on.

As will be discussed in the next section, some of which could be broken down through sophisticated uses of ICT. ICT can broaden and enhance experiential learning because they offer learners a range of affordances that aids to perform a complex, authentic and experienced-based task.

After exploring literature about the interplay between experiential learning and ICT in higher education settings, there are different types of aids that ICT can provide to broadening and maximising experiential learning. The first type of supports consists in to make the experience and the action possible, creating scenarios in which students can acquire experience by practicing virtually before meeting reality and in which diverse kinds of skills can be acquired and practiced through observation, construction, manipulation, and conditioning of objects, structures, and phenomena. The second type concerns tools and services that can improve and encourage reflection on the experience, increase critical thinking, promote student interaction with each other and the content, and, more generally, enhance the dimensions that are typical of the concept of experiential learning.

Three-dimensional virtual learning environments, both those termed desktop and sensory-immersive, are technologies of the first type that have pedagogical potential of create the conditions to implement innovative educational programs that overcome the restrictions of lecture-based learning and involve and engage students through an educational model that is experience-based and student-centered. They have a series of learning affordances that Dalgarno and Lee (2010) have identified in facilitating

- learning tasks that lead to the development of enhanced spatial knowledge representation of the explored domain;
- experiential learning tasks that would be impractical or impossible to undertake in the real world;
- learning tasks that lead to increased intrinsic motivation and engagement;
- learning tasks that lead to improved transfer of knowledge and skills to real situations through contextualisation of learning;
- tasks that lead to richer and/or more effective collaborative learning than is possible with 2-D alternatives.

As can be noted, three-dimensional virtual learning environments - such as simulation, 3-D serious games, virtual worlds, virtual computer laboratories, and so on - facilitate experiential learning tasks in all educational activities that are too difficult, dangerous, expensive or impossible to implement in real contexts.

Luca Ludovico, **Giorgio Presti** and **Corrado Saija** (*A Multimodal Sound*

Installation for Experiential Learning) focus on an alternative way to explain the production, propagation, and perception of sound to non-experts, through a multimedia installation in order to provide a low-level experience of sound-related phenomena through synesthetic experiential learning using multiple sensory channels (i.e., hearing, touch and sight).

Maria Denami and **Benjamin Luft** (*IAM & PNA: from Instructional Design to a Usability Test for Learning. Understanding, Designing and Analysing the Technology Appropriation Process*) define the Instrumental Adaptation Model (IAM), for designing experiential learning using ITC, and the Process Network Analysis (PNA), for making visible and measurable the learner's learning process, and apply them to the design a 3-D virtual simulator for training in production of medicaments.

As regards the second category of technological supports experiential learning, Conole and Dyke (2004) consider that «asynchronous technologies offer the potential for encouraging reflection and critique». In particular, Web 2.0 services and social media tools (like blogs, wikis, Facebook, Twitter, Youtube, Google Drive), in addition to foster interaction that is primarily interpersonal, provide the possibility for many to become producers of information. Moreover, social networking services also promote the creation of "online groups of individuals that are self-directed, vital, selfmanaged and active in the generation of new ideas, and that are compelling examples of thriving knowledge creating communities, open to all who wish to participate" (McLoughlin, & Lee, 2007, p. 664). So, Internet becomes a dialogic space (Wegerif, 2013), a new landscape for dialogue in which people can express the diversity of opinion. Connecting with others, information discovery and sharing, and personal collection and adaptation of information make modern communication technologies a medium through which the meaning of experience is consciously followed by an individual or a community of individuals.

An example of the second types of uses is in the article of **Stefano Cacciamani** (*Experiential Learning and Knowledge Building in Higher Education: an Application of the Progressive Design Method*). The paper develops and tests the implementation of Progressive Design Method (PDM) for connecting the Experiential Learning perspective with the Knowledge Building model and introducing the dimension of collaboration into the different phases of the Kolb's Experiential Learning theory. «In particular PDM is oriented toward involving students in a KB community working toward the progressive elaboration of a project (Experience), with the possibility of receiving distributed feedback from community members through the online environment (Critical Reflection), making a team decisions about the feedback received (Abstract Conceptualization) and implementing the decisions made in a new version of

the project (Active experimentation)».

Moreover, **José António Moreira** (A *Pedagogical Model to Deconstruct Moving Pictures in Virtual Learning Environments and its Impact on the Delf-concept of Postgraduate Students*) proposes and analyzes a pedagogical model for the design of e-tivities centered on the "deconstruction" of moving images and the subsequent discussion. He describes their impact on the self-concept of twenty-four graduate students. The deconstruction and the discussion are the essence of the e-tivity that involves students interacting with one another in an online communication environment.

Antonella Poce, **Francesco Agrusti** and **Maria Rosaria Re** (*Enhancing Higher Education Students' XXI Century Skills Through Co-Writing Activities in Science Teaching*) describe a collaborative writing activity as a learning method that improves students' critical thinking skill. The activity has led to remarkable results in terms of participation, organisation of the work, and quality of the products.

In the issues there are also two papers addressing the subtheme of experiential learning for teacher professional development.

Orlando De Pietro, **Maurizio De Rose** and **Antonella Valenti** (*Methodologies and Technologies to Support Didactics for Competences. Realization of an Active and Participatory Teaching Activity in a University Context*) illustrate the design and development of an activity based on the competence-oriented teaching and learning approach with the aim of fostering the professional digital competence of pre-service teacher students.

For her part, **Letizia Cinganotto** (*Experiential Learning for teacher training: a case example on language, content and technologies in a Learning Event by eTwinning*) concentrates on experiential learning and teachers' training for continuous professional development, and describes an online training initiative promoted by eTwinning on CLIL (Content and Language Integrated Learning) and technology within an International community of practice.

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