

Building Co-design Strategies in Higher Education Using Technology-Enhanced Learning Scenarios.

Symposium Organisers: Begoña Gros & Iolanda Garcia

*Department of Theory and History of Education, University of Barcelona, bgros@ub.edu
eLearn Center, Universitat Oberta de Catalunya, igarcia@uoc.edu*

Introduction

Networked learning is “learning in which information and communications is used to promote connections: between one learner and other learners, between learners and tutors; between a learning community and its learning resources.” (Goodyear et al. 2004:2). This definition of networked learning goes beyond merely denoting ‘online learning’ or ‘e-learning’, as it encompasses theoretical assumptions about learning and how to design for learning. The idea of networked learning suggests that learning is not confined to the individual mind or the individual learner, it is located in the connections and interactions between learners, teachers and resources. As such, “networked learning theory seems to encompass an understanding of learning as a social, relational phenomenon, and a view of knowledge and identity as constructed through interaction and dialogue” (Rybertm Buus, Georgsen, 2012: 44).

Many of the design practices in education are associated with the design and implementation of technological tools to support learning processes without taking into account the real needs of the learner. However, each time more interest in personal learning highly the need to include co-design processes. Roschelle, Penuel & Shechman (2006:606) describe co-design as “a highly-facilitated, team-based process in which teachers, researchers and developers work together in defined roles to design an educational innovation, realise the design in one or more prototypes, and evaluate each prototype's significance for addressing a concrete educational need”. In co-design the process is not completely democratic –as it is in participatory design– because researchers often hold the ultimate responsibility for the quality decision-making. The roles of the participants get mixed up: the person who will eventually be served through the design process is given the position of “expert of his/her experience”, and plays a large role in knowledge development, idea generation and concept development. In generating insights, the researcher supports the “expert of his/her experience” by providing tools for ideation and expression (Roschelle, et al. 2006). Designers also gain knowledge of the work context, so that the new technology explicitly incorporates the values, history, and context of the work system (Mor & Winters, 2006). There are also some experiences and research in which the product of design is the curriculum, for instance, the learning materials or the methodological model (Shrader, Williams, Lachance-Whitcomb, Finn & Gomez, 2001; Könings, Brand-Gruwel & Van Merriënboer, 2011). In general, it is mainly about funnelling educational innovations, most of them associated with the use of technological resources. The context of co-design experiences is usually the school, i.e. primary or secondary education, and the participants are teachers, researchers and, where this task is implicit, computer developers also, as partners in the process of educational innovation.

More recently, the direct participation of students as “co-designers” in different educational contexts has begun to be explored (Bovill, Morss & Bulley, 2009; Scanlon et al, 2009; Konings et al., 2011). Some results show that this approach can promote deeper learning among students and also provide key elements and opportunities to guide teacher intervention. However, and despite being a promising approach there are few studies that address the effects of co-design in higher education (Bovill, Morss & Bulley, 2009).

Co-design in the domain of networked learning is a complex and multifaceted task and it requires being facilitated by artefacts that mediate among participants' perspectives and contributions. Design patterns and visual representation tools can act as scaffolds in the co-design process (Scanlon et al., 2009) and at the same time allow the designed outcomes to be shared and reused by other teachers or researchers (Mor & Winters, 2006), thereby fostering the creation of communities of designers.

The use of co-design in higher education raises a lot of questions and issues that we would like to share and reflect on in the symposium:

- Who can take the role of co-designer in higher education?
- How can co-design practice be approached as a means of inquiry?
- Which are the most appropriate research methods for studying co-design processes in networked learning scenarios?
- What kinds of research instruments are needed to collect relevant and productive research data during the co-design process?
- What kind of conceptual and instrumental tools are necessary to support co-design processes in networked learning scenarios?
- How can the design process and design outcomes be captured and represented, so that they can be shared, repurposed and reused (tools, techniques, patterns)?
- How can co-designers assess the participatory design process?
- How can the impact of networked learning co-design in terms of learning improvement be assessed?

During the workshop, four different contributions will be presented in order to discuss some of these issues.

Iolanda García (Universitat Oberta de Catalunya, Spain). **Analysing and supporting the process of co-design of inquiry-based and technology-enhanced learning scenarios in higher education.** This paper is framed in a research project on co-design of learning scenarios in higher education. Co-design is understood as a creative process developed collaboratively by teachers, students and researchers to design inquiry-based and technology-enhanced learning scenarios. It is the purpose of the research to develop tools and patterns that support the co-design process and products through its representation and explanation. In the project, several design tools and conceptual artefacts are used to guide practitioners in the creation of a common 'language' and help them to reflect and to represent practise during the co-design process. The paper reports the first phase of the research which analyses the initial co-design work developed with a group of teachers from universities with two different models, one of them blended and the other virtual. Firstly, the theoretical framework is developed to highlight the theoretical and practical interactions between participatory design methods and tools and the domain of learning design. Secondly, the research design is described and a model is proposed for the analysis of the co-design process of inquiry-based and technology-enhanced learning scenarios. To conclude, we discuss the major implications and challenges of this approach.

Gráinne Conole (University of Leicester, UK). **The 7Cs of Learning Design - a new approach to rethinking design practice.** Designing for learning is arguably the key challenge facing education today; new technologies offer a plethora of ways in which learners can interact with rich multimedia, communicate and collaborate. Despite this teachers lack the necessary digital literacy skills to make effective design decisions that are pedagogically informed and make appropriate use of technologies. Learning Design has emerged in the last ten years as a means of addressing this, by providing teachers with guidance and support for their design practices. Learning Design is predicated on three aspects: guidance, visualisation and sharing. The paper will describe the development and evaluation of a new framework for Learning Design, the 7Cs of Learning Design. The framework consists of the following elements: Conceptualise (i.e. what are you designing and why, who are you designing for?), Capture (in terms of capturing resources to be used and activities around Learner Generated Content), Communicate (mechanisms to foster communication), Collaborate (mechanisms to foster collaboration), Consider (activities to promote reflection and enable assessment), Combine (combining the activities to give a holistic overview of the design and associated learning pathways), and Consolidate (in terms of running the design in a real learning context, evaluating, refining and sharing the design). The paper will describe the framework and how it can be used, along with an evaluation of its application in practice. It will conclude by contextualising this work within recent broader developments in the field. The framework can be used by individual teacher or with groups of teachers co-designing learning interventions. The latter has been effectively delivered in a series of workshops we have run over the past year.

Jonathan Chacon and Davinia Hernández-Leo. (Universitat Pompeu Fabra, Spain). **Learning Design Family Tree to Back Reuse and Cooperation.** The types of artefacts or solutions used towards the creation learning designs (Learning design Solutions, LdS) are diverse (patterns, course maps, activities, etc.) and have varied or multiple lives. Sometimes designs are created by an individual teacher for a single use with their students. But often, they are reused the following years or by other teachers with minor

adaptations. Other times, designs are co-outlined by networks of teacher and later refined by each teacher for their particular group of students, or they are co-designed involving students. These scenarios can imply the creation of multiple replicas of the same design, which in turn may be duplicated and refined as new LdS. In this paper we state that supporting the management and visualization of interrelated LdS can back scenarios of cooperation and reuse in the context of design communities. In particular, we propose an LdS branching model visualized following a family-tree metaphor. We define a "learning designs' family" as a collection of learning designs which weren't started from scratch but by replicating (or duplicating) a particular existing learning design. The model, and its visualization, has been implemented as a new feature in the LdShake teacher-community platform, as part of the Metis Integrated Learning Design Environment (ILDE). This first implementation of both the model and its visualization has enabled the collection of the first feedback from learning technology experts. The evaluation was carried out online. 11 experts responded to our invitation to try the feature completing a set of tasks and an on-line questionnaire. Their opinions indicate that the feature is interesting and could significantly address relevant learning design and co-design situations. They used the feature satisfactorily but also pointed out several suggestions to improve its usability and enhance its potential utility. The suggestions are being considered in a second iteration of the model and its implementation, which will be used by teachers in the Metis workshops.

Steven Warburton (University of Surrey, UK), Yishay Mor. **Assessing the value of design narratives, patterns and scenarios in scaffolding co-design processes in the domain of technology enhanced learning.** In order to promote pedagogically informed use of technology, educators need to develop an active, inquisitive, design-oriented mind-set. Design Patterns have been demonstrated as powerful mediators of theory-praxis conversations yet widespread adoption by the practitioner community remains a challenge (Goodyear et al., 2004). Over several years, the authors and their colleagues have facilitated many workshops in which participants shared experiences, captured these as design narratives, extracting design patterns, and applied them to novel teaching challenges represented as design scenarios. This paper analysis the value of design narratives, patterns and scenarios in scaffolding co-design processes in light of previous work in this area.

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