

## GUEST EDITORIAL PREFACE

# Special Issue on Mobile Learning and Creativity: Current Concepts and Studies

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## INTRODUCTION

Internationally, there is a growing body of research related to mobile learning dedicated to the design, implementation and evaluation of mobile learning tools and scenarios (Buchem et al., 2011). However, whilst some studies within the socio-cultural framework address important aspects such as user-generated contexts (Pachler et al., 2010), ownership and changed power relations (Traxler, 2011), the role of mobile learning for fostering creativity is still an under-explored and under-researched area. As such, the relationship between mobile learning and creativity is ambiguous and in need of attention. This Special Issue aims to contribute to this developing area of knowledge and practice while locating mobile learning with a socio-culturally orientated approach proposed by Pachler, Bachmair and Cook (2010).

The papers in this volume contribute particularly to the role of mobile learning for

fostering creativity. They explore the relationship between learning and creativity in different contexts (for instance, formal education, workplace learning, informal learning), and analyse ways in which mobile media and methods applied to in the design of mobile learning may – or may not – foster creative learning.

## Theoretical Background

Creativity has been proclaimed as one of the so-called key 21<sup>st</sup> century skills and as the driving force of economic development in a post-industrial era. With the ‘creative class’ (Florida, 2002), comprising different types of creative workers, tackling complex societal problems, ranging from solving economic problems, through creating innovative technological solutions to devising new ways of social entrepreneurship, the role of creativity will arguably increase dramatically in the years to come. Already today many of the

fastest-growing jobs and emerging industries rely on workers' creative capacity, such as the ability to think laterally, inventing new scenarios and producing novel solutions. To face this demand, both education and business have to embrace new technologies and design new ways to foster the creativity of students and workers.

Since research on creativity is based on contradictory definitions like the great mind approach or individual creativity (Guilford 1956), systemic understandings (Csikszentmihalyi, 1996), the subjectivity of creativity (Gauntlett, 2011) and the questions of what is creative (a creative person, a group, an organization, a process, a product, the environment), a number of questions remain: Who views what as creative and novel in what context? Is a novel every day idea a creative effort? Who can judge whether processes and outcomes are creative? Is creativity in one context (e.g. school) of equal value in another context (e.g. work place)?

The understanding of creativity underlying this Special Issue is based on an open, multi-dimensional concept allowing different views and approaches, favouring process-orientated and person-centred conceptualisations of creativity, including such notions as "connective, social activity" (Fischer, 2011) or "collaborative creativity" (Herrmann, 2009), "making something new, something valuable or useful for a particular group" (Sternberg, 1999), "making something novel in a given context" (Gauntlett, 2011), or as "connecting with others, sharing and putting together ideas and artifacts to create something novel from the creator's perspective in a particular context" (Jahnke, 2011). These approaches emphasize the importance of creativity for the engagement with social and physical environment, active and meaningful participation.

With mobile devices offering ubiquitous connectivity or ubiquitous online presence, mobile devices can be viewed as media for learning that have the potential to foster creativity. However, the explicit reflection on the role of mobile media for fostering creativity and systematic research are missing in the current discourse. A number of authors argue

that today's academic and workplace learning is often designed by yesterday's didactics and technology (Collins & Halverson, 2009; Goggin, Jahnke and Wulf, 2013). At the same time research on individual appropriation of mobile media points to how creativity, participation and connectedness intersect the life-worlds of users (Gauntlett, 2011). Jahnke et al. (2012) note that there is a gap between creative uses and creative pedagogies of mobile media on the one hand and the design of mobile learning on the other. Following the current discussion related to mobile learning, we believe that there is a need to rethink current designs for teaching and designs for learning supported by mobile media.

## Papers in this Special Issue

Grounded in meta-design as the emerging conceptual framework aimed at defining and creating social and technical infrastructures for participatory cultures, the question guiding this Special Issue is how to design mobile learning to enhance creativity, i.e.: How to design learning to be creative when the answer to the problem is not yet known? (Fischer, 2011).

This Special Issue presents five papers that give answers to this question. They focus on identifying effective and promising approaches, practices, designs and developments utilising the potential of mobile media to model creative learning and nurture the development of creative skills across different learning contexts such as formal education, workplace learning and informal learning. This special issue therefore contributes to the aim of consolidating work in this area and spurring on the discourse about the role of mobile media in fostering creativity in context.

The first paper in this volume by Isa Jahnke entitled "Teaching Practices in iPad-Classrooms—Alignment of Didactical Designs, Mobile Devices and Creativity" reflects on didactical concepts for creativity using mobile devices and presents two empirical case studies. Jahnke challenges the concept of creativity as a notion which can be assessed objectively by an external authority and frames creativity as

a subjective, socially co-constructed concept, which should be studied in context. The first case study explores teacher conceptions of student creativity in context of higher education. The case study is based on 20 expert interviews and its result is a framework for analyzing creativity in teaching based on classroom observations. The second case study analyses creativity in iPad-classrooms in K-9 schools. The studies show that most creativity can be observed when teachers design student learning activities enhanced by mobile technology where no correct solutions are available. In this regard, Jahnke argues that there is a shift from traditionally separating ICT and education to new co-located settings where mobile devices and education merge into new teaching spaces. Jahnke goes on to argue that these new teaching spaces require rethinking from traditional Didaktik towards Digital Didactical Designs, bridging a curriculum driven learning (i.e. learning what is known) and creative learning (i.e. learning when the answer is not known). The empirical cases illustrate how to bridge these two types of learning to trigger deeper learning.

The second paper by Maria Ranieri and Isabella Bruni entitled “Empowering creativity in young people through mobile learning: An investigation of creative practices of mobile media uses in and out of school” investigates the potential of mobile learning for creativity in and out of school with a focus on media production. Ranieri and Bruni challenge binary perspectives on the nature of creativity, e.g. individual vs. social, and define creativity as a relational process that occurs in the interaction between individuals and society, a definition based on the Vygotskian perspective of creativity as a transformative process of culture and the self. Ranieri and Bruni describe experiences from three different projects in different contexts, i.e. project 1 at school (formal learning), project 2 during the annual school trip (formal and informal learning) and project 3 in an after-school program (informal context). All three projects are related to engaging groups of young people in the production of digital artefacts by means of mobile devices. By analysing creative processes

and creative outcomes in these three different settings (formal, informal, mixed) and focusing on self-expression (project 1), innovative media practices (project 2) and self-representation/identity (project 3), the authors explore the potential of mobile media for creative learning, and the role of teachers and teaching in supporting creative processes. Ranieri and Bruni present some results from the three projects, demonstrating how mobile devices serve as cultural resources that young people use for meaning making and transforming themselves. This especially refers to collaborative creativity, transformation of media practices, creative self-expression and creative self-representation. In addition to the learner perspective, the authors explore the educator perspective and conclude that teachers’ ability to take risks and support unplanned events, as well as appreciate the role of the media in promoting identity transformation prove to be crucial in fostering creativity of learners.

The third paper by Sobah Abbas Petersen, Emma Procter-Legg and Annamaria Cacchione entitled “Creativity and Mobile Language Learning using LingoBee” provides an insight into creativity in language learning and explores the ideas of mobility and creativity through the use of LingoBee, a mobile app for situated language learning developed as part of the EU LLP project SIMOLA, Situated Mobile Language Learning. The LingoBee mobile app is based on ideas of crowdsourcing and social networking. Petersen, Procter-Legg and Cacchione argue for a more socially oriented and contextualized perspective on linguistic creativity in everyday contexts and explore language content created with LingoBee by second language learners in several European countries as part of user studies. As a result, the authors identify three perspectives of creativity in mobile language learning, i.e. creativity spurred by situated context, collaborative creative construction of content and creative use of language. The authors argue that LingoBee may support creativity in language learning as it facilitates collaboration, provides a social environment for learners, fosters the ability for

language learners to work more autonomously and creates a social network of language learners that helps support the user creativity. The paper concludes that mobile language learning can stimulate creativity among learners provided the solution fosters learner autonomy, supports spontaneity and includes a possibility to capture the moment.

The fourth paper by Steve Wright, Ben Short, Gale Parchoma entitled “Supporting Creativity in Craft Brewing – A Case Study of iPhone Use in the Transition from Novice towards Mastery” presents a case-study in an informal context based on an online ethnographic observation of an individual engaged in the practice of craft brewing. This case study explores the ways in which the use of a mobile device supports informal learning underpinning a transition from novice towards mastery. The authors present a rich description of how mobile technologies are used in the context of craft brewing. As opposed to prevailing conceptualisations of informal learning as lacking assessment and external assessment being considered inappropriate for evaluating creativity, Wright, Short and Parchoma argue for the importance of considering the role of constraint in the creative process. Derived from ethnographic analysis of learning situated in the context of craft brewing, i.e. learner-initiated activities of a home brewer who uses a mobile device and other technologies to inform and perform the brewing practice, the authors emphasise the place of expert assessment in evaluating a product as creative. Based on the observation that in the process of transition from novice to masters learners seek critique from more experienced peers and professionals, expert assessment of creativity is considered important for learners moving from novice status (e.g. reproducing recipes) towards mastery status (e.g. producing their own recipes).

The fifth paper by Jennifer Masters entitled “Creative Teaching and Learning Strategies for Novice Users of Mobile Technologies” addresses creative teaching and learning strategies in the context of mobile learning, particularly of novice learners. Masters argues for Creative Pedagogy as a combination of teaching

for creativity, creative teaching and creative learning and requires both design of learning experiences and design of learning spaces. Masters argues that pedagogy for creative learning requires educators to let go of some previous understandings of ICT and learning and to focus on using ICT to foster creativity as a key to empowering learners. The author frames her discussion about creativity by two case studies conducted in informal settings using an ethnographical approach. The two case studies are based on participant observation and focus on experiences of users of mobile devices who do not have much prior experience with information and communication technologies. The author argues that using mobile technology tools can advantage learners with little prior experience with mobile technologies to work in new and creative ways and that such new approaches may not be equally accepted by more experienced users. Masters identifies facilitation by intentional support, innovative teaching strategies and imaginative teaching scenarios as important components of mobile learning.

## CONCLUSION AND OUTLOOK

The five papers included in this Special Issue provide rich theoretical and empirical descriptions of creativity and of how mobile technologies can be applied to foster creativity as part of the learning process. In view of the main research question guiding this Special Issue, i.e. “How to design learning to be creative when the answer to the problem is not yet known?” (Fischer, 2011), the five papers provide valuable insights into designing mobile learning to foster creativity in context. From a meta-perspective, three main issues related to mobile learning and creativity emerge.

The first key issue is the need for a more comprehensive and integrative view of creativity. The five papers included in this Special Issue point towards the theoretical and empirical value of an integrative view of creativity, catering for diverse, and traditionally considered as opposed, conceptualisations of creativity:

- Creativity can be equally studied as a process and as a product;
- Creativity can be a quality of both highly specialised and everyday activities;
- Creativity has an individual and a social (collaborative) dimension;
- Creativity can be assessed internally (by creators themselves) and externally (by more knowledgeable others, e.g. peers, professionals, educators);
- Creativity can be fostered across different contexts (e.g. formal, non-formal and informal) also bridging these contexts;
- Creativity can be explored from the perspectives of different stakeholders involved in creative endeavours, e.g. learners, peers, educators, professionals.

A multi-dimensional and integrative conceptualisation of creativity is necessary as a starting point for designing mobile learning which aims at fostering creativity. It is crucial to develop an understanding of the different facets of creativity and take informed decisions about which aspects or types of creativity are aimed at.

The second key issue is the role and impact of mobile technologies (devices, applications, media) in fostering creativity. Papers in this Special Issue point to the fact that using mobile technology for teaching and learning does not automatically lead to novel educational forms or creative pedagogies. The relationship between creativity and mobile is thus not straightforward. Mobile technologies – as any other technology – can both reinforce traditional teaching patterns or change current practice into a creative experience depending on individual understanding of creativity, especially its nature and role in learning and education, as well as individual dispositions such as readiness to take risk, abandon previous conceptions or try something new. Given individual understanding and dispositions of teachers and learners, mobile technologies can enhance but not necessarily determine improvement in creativity.

The third issue is the design of mobile learning to foster creativity. As papers in this Special Issue show, designing mobile learning to foster

creativity is not only about designing activities with the application of mobile media which aim to stimulate creativity but also about creating spaces for creativity such as creativity-friendly or playful learning environments which cater for exploring, playing and making mistakes. Creative designs seem to be closely related to the notions of learner-centeredness, autonomy, ownership, making own decisions, spontaneity, the freedom of continuing learning when and where it suits the learner, playfulness and creating new artefacts. Mobile technologies can be further conceptualised as cultural resources used for meaning making and identity construction. From this perspective, designing mobile learning to foster creativity is also about self-expression and transformation of creator's identity through social interaction and manipulation of culturally significant artefacts. As such planning for mobile learning to foster creativity is about designing opportunities for creating and co-creating (user-generated, collaborative) artefacts (ideas, knowledge, content, resources) – at best spurred by a situated context and supported by feedback from others (peers, professionals, educators). The opportunity to share creative experiences with others is valuable for learners both in terms of feedback on originality and appropriateness and as a chance to celebrate a sense of own creative achievement.

The contributions to this Special Issue show, however, that research on the design of mobile learning to foster creativity is still in its infancy. Further studies need to take a more analytic approach, examining in more detail how mobile learning can support teaching for creativity, creative teaching and creative learning, allowing us to arrive at a next level answer to the question “How to design learning to be creative when the answer to the problem is not yet known?” (Fischer, 2011).

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