

## The affordances of social mobile media for boundary crossing

*Full paper*

Christoph Pimmer, learning.lab, IWI, HSW, University of Applied Sciences Northwestern Switzerland, [christoph@pimmer.info](mailto:christoph@pimmer.info)

Urs Gröhbiel, learning.lab, IWI, HSW, University of Applied Sciences Northwestern Switzerland, [urs.groehbiel@fhnw.ch](mailto:urs.groehbiel@fhnw.ch)

### Abstract

**In order to explore the potential of social mobile media for educational purposes, this paper combines the theory of boundary crossing with recent findings from the fields of mobile learning and social media. Particular reference is made to boundaries between formal and informal contexts.**

Learning in and across ever changing contexts is a constituent element of the expanding field of mobile learning (Kukulka-Hulme, Sharples, Milrad, Arnedillo-Sánchez, & Vavoula, 2010; Sharples, Taylor, & Vavoula, 2005). Particular potential is seen in linking learning in formal contexts such as school and universities with learning in the informal context of everyday life (Norbert Pachler, Cook, & Bachmair, 2010). Only recently, mobile learning researchers have started to investigate the relationship between mobile learning and social practices and networks under the notion of social mobile media (Lewis, Pea, & Rosen, 2010; N. Pachler, Ranieri, Manca, & Cook, 2012; Tu, Mclsaac, Sujo-Montes, & Armfield, 2012). However, while the convergence of social and mobile media may offer specific affordances for education - by connecting different learning spaces - there is a lack of empirical and theoretical work.

In order to gain first insights into this emerging phenomenon, we connect the theory of “boundary crossing” with learning practices based on social mobile media. Recent education studies have summarized the rich literature about the educational potential of boundary crossing and boundary objects; boundaries are understood as socio-cultural differences that lead to discontinuities in action and interaction and can stimulate learning. Broadly speaking, boundary crossing involves a person's transitions and interactions across different socio-cultural spaces; boundary objects are artefacts, for example teaching portfolios and school grades, that have a bridging function in boundary crossing (Akkerman & Bakker, 2011; Akkerman & Van Eijck, 2011; Star, 1989). Recently, Akkerman & Bakker (2011) have discerned four main boundary mechanisms: identification, coordination, reflection and transformation.

In our discussion we will analyse socio-cognitive and socio-cultural forms of mobile learning on the basis of these mechanisms. (For a selective overview see Table 1). In so doing we will take examples from the literature as well as from a broad range of own studies from the field of health and medical education; a field that is characterized by socio-cultural diversity and high adoption rates of mobile and social mobile media as well as dynamic learning and work contexts (Black et al., 2010; Franko & Tirrell, 2011; Pimmer, Pachler, & Genewein, 2013).

SSRE2013	Integrating formal and informal learning
SSRE2013	L'integrazione dell'apprendimento formale e informale
SGBF2013	Integration von formellem und informellem Lernen
SSRE2013	L'intégration de l'apprentissage formel et informel

<b>Boundary mechanism</b>	<b>Examples of learning practices based on social mobile media: Mobile media as boundary objects ...</b>
<b>Identification</b>	<ul style="list-style-type: none"> <li>▪ ... facilitate the negotiation of professional identities and professional status of medical students and practitioners on social network sites across national/cultural boundaries (Pimmer, Linxen, &amp; Gröbriel, 2012).</li> </ul>
<b>Coordination</b>	<ul style="list-style-type: none"> <li>▪ ... support the coordination of different professional groups, i.e. medical practitioners with different levels and domains of expertise across patient treatment and team meetings.</li> </ul>
<b>Reflection</b>	<ul style="list-style-type: none"> <li>▪ ... stimulate reflection that is closely linked to sharing and discussing of work-based experiences of geographically dispersed midwifery students (with different professional specialisations) in social network spaces (Brysiewicz et al., 2013).</li> </ul>
<b>Transformation</b>	<ul style="list-style-type: none"> <li>▪ ... can facilitate the transformation of educational and cultural practices in the classroom over time, as media is adopted from private settings (Pimmer, Linxen, Gröbriel, Jha, &amp; Burg, 2012).</li> </ul>

*Table 1: A selective overview of boundary mechanism and learning practices*

The boundary practices outlined show that, while mobile devices do not automatically act as boundary objects, (Beddall-Hill & Raper, 2010), shared representations on social mobile media can well support boundary mechanisms of identification, coordination, reflection and transformation. Portability and multimedia capture allows documenting and 'carrying' learning experiences in the form of multimodal representations across different physical contexts into (new) socio-cultural communities. Moreover, connectivity of the mobile devices and the connected nature of social media per se act as 'social glue', tying together different socio-cultural spaces in more immediate ways not possible before.

Our examples will also show how social mobile media bridge boundaries in manifold ways: between and within different professions, between 'novices' and 'experts', between people who draw from different cultural and linguistic resources, across a diversity of locations, over time as well as across formal and informal spaces. Social mobile media practices appear to arise often in informal and in private learning spaces; learning that certainly needs to be acknowledged in more formal education settings. However, the direct integration can be difficult due to the often very disparate socio-cultural characteristics of formal and informal settings. The implementation of social media into formal education has led to mixed (partly negative) results (George & Dellasega, 2011; Vincent & Weber, 2011), since classroom and teaching cultures tend to interfere with the peer dynamics of novel media practices; this manifests itself, for example, in students who do not want to 'friend' their teachers. However, our examples provide some evidence that social mobile media are particularly suitable to overcome boundaries between more formal education settings such as schools/universities and relatively informal work-based learning (Pimmer & Pachler, 2013).

Many opportunities would be missed if we understand boundaries (and their associated learning potential) exclusively as socio-cultural differences that lead to discontinuities. Instead, the analytical focus should be on the affordances that social mobile media offer for connecting different socio-cultural spaces in order to facilitate or enhance learning and problem solving - in ways not possible before.

The scope of this paper permits a limited and selective engagement and will, naturally, not allow any definitive accounts of the complex and multi-faceted phenomena at hand. However, in combining the theory of boundary crossing with recent findings from the field of technology enhanced, mobile learning and social media we intend to offer first insights and guidance for future exploration.

SSRE2013	Integrating formal and informal learning
SSRE2013	L'integrazione dell'apprendimento formale e informale
SGBF2013	Integration von formellem und informellem Lernen
SSRE2013	L'intégration de l'apprentissage formel et informel

## References

- Akkerman, S. F., & Bakker, A. (2011). Boundary crossing and boundary objects. *Review of Educational Research, 81*(2), 132-169.
- Akkerman, S. F., & Van Eijck, M. (2011). Re-theorising the student dialogically across and between boundaries of multiple communities.
- Beddall-Hill, N. L., & Raper, J. (2010). Mobile devices as 'boundary objects' on field trips. *Journal of the Research Center for Educational Technology, 6*(1), 28-46.
- Black, E. W., Thompson, L. A., Duff, W. P., Dawson, K., Saliba, H., & Black, N. M. P. (2010). Revisiting social network utilization by physicians-in-training. *Journal of Graduate Medical Education, 2*(2), 289-293.
- Brysiewicz, P., Pimmer, C., Gröhbiel, U., Walters, F., Linxen, S., & Chipps, J. (2013). *The neglected grass root adoption of mobile phones as learning tools in resource-limited settings. A study from advanced midwifery education in KwaZulu-Natal, South Africa*. Paper presented at the South African Association of Health Educationalists, Durban, South Africa.
- Franko, O. I., & Tirrell, T. F. (2011). Smartphone App use among medical providers in ACGME training programs. *Journal of Medical Systems, 1*-5.
- George, D. R., & Dellasega, C. (2011). Use of social media in graduate-level medical humanities education: Two pilot studies from Penn State College of Medicine. *Medical Teacher, 33*(8), 429-434.
- Kukulka-Hulme, A., Sharples, M., Milrad, M., Arnedillo-Sánchez, I., & Vavoula, G. (2010). Innovation in Mobile Learning: a European Perspective. *International Journal of Mobile and Blended Learning, 1*, 1.
- Lewis, S., Pea, R., & Rosen, J. (2010). Beyond participation to co-creation of meaning: mobile social media in generative learning communities. *Social Science Information, 49*(3), 351-369.
- Pachler, N., Cook, J., & Bachmair, B. (2010). Appropriation of mobile cultural resources for learning. *International Journal of Mobile and Blended Learning, 2*(1), 1-21.
- Pachler, N., Ranieri, M., Manca, S., & Cook, J. (2012). Editorial: Social Networking and Mobile Learning. *British Journal of Educational Technology, 43*(5), 707-710.
- Pimmer, C., Linxen, S., & Gröhbiel, U. (2012). Facebook as a learning tool? A case study on the appropriation of social network sites along with mobile phones in developing countries. *British Journal of Educational Technology, 43*(5), 726-738. doi: 10.1111/j.1467-8535.2012.01351.x
- Pimmer, C., Linxen, S., Gröhbiel, U., Jha, A., & Burg, G. (2012). Mobile learning in resource-constrained environments. A case study of medical education. DOI:10.3109/0142159X.2012.733454. *Medical Teacher*. doi: 10.3109/0142159X.2012.733454
- Pimmer, C., & Pachler, N. (2013). Mobile learning in the workplace. Unlocking the value of mobile technology for work-based education. In M. Ally & A. Tsinakos (Eds.), *Mobile Learning Development for Flexible Learning*: Athabasca University Press.
- Pimmer, C., Pachler, N., & Genewein, U. (2013). Contextual dynamics in clinical workplaces. Learning from doctor-to-doctor consultations. *Medical Education, 47*(5), 463-475.
- Sharples, M., Taylor, J., & Vavoula, G. (2005). *Towards a Theory of Mobile Learning*. Paper presented at the mLearn 2005: 4th World conference on mLearning, Banff, Alberta, Canada.

SSRE2013	Integrating formal and informal learning
SSRE2013	L'integrazione dell'apprendimento formale e informale
SGBF2013	Integration von formellem und informellem Lernen
SSRE2013	L'intégration de l'apprentissage formel et informel

Star, S. L. (1989). The Structure of ill-structured solutions: Boundary Objects and Heterogeneous Distributed Problem Solving. In Gasser & Huhns (Eds.), *Distributed Artificial Intelligence* (Vol. 2, pp. 37-54). San Mateo, CA: Morgan Kaufmann.

Tu, C.-H., Mclsaac, M., Sujo-Montes, L., & Armfield, S. (2012). Is there a mobile social presence? *Educational Media International*, 49(4), 247-261.

Vincent, A. H., & Weber, Z. A. (2011). Using Facebook within a pharmacy elective course. *American Journal of Pharmaceutical Education*, 75(1).