Communities - The MOBIlearn perspective

Dirk Frohberg, University of Zurich, Department of Information Technology

frohberg@ifi.unizh.ch

Introduction

MOBIlearn[1] is a worldwide European-led research and development project exploring context-sensitive approaches to informal, problem-based and workplace learning by using key advances in mobile technologies (www.mobilearn.org). The University of Zurich is involved with formulating requirements for a mobile learning system, doing user tests with prototypes developed by MOBIlearn and evaluating those prototypes. Furthermore it will contribute to a theory based report about mobile learning (state-of-the-art, guidelines etc.). All presented results in the framework of the project MOBILearn are financially funded by the Swiss Federal Office of Education and Science (BBW).

Relevance of communities in mobile learning

Mobile learning can be viewed from two perspectives.

One more technical oriented perspective regards traditional behaviouristic educational paradigm as given and tries to represent or to support them with mobile technology. A main concern from this perspective is how to create, enrich, distribute and display ready-made multimedial learning material on mobile devices. The claimed benefits are to personalize learning (learn where you want, when you want, what you want, as fast as you want etc.) and to reduce costs of traveling, missing times at work or printout of materials. This perspective on mobile learning is very common, but it focuses often very much on the learner as an individual person.

When we talk about mobile learning communities we would like to point out a second perspective on mobile learning which is driven by a (socio-)cognitivistic paradigm of pedagogy [Pavard and Dugdale, 2002]. In this perspective we challenge traditional designs of teaching and learning and try to push community oriented learning like collaborative learning, problem based learning, game based learning, experimental learning, informal and ad-hoc learning etc. Such modern forms of learning do usually

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require a community of learners that support each other and perform their learning together. Learning in a learning community is meant to rise the quality and level of knowledge. People who communicate with other learners, who exchange and who explain each other their ideas are more likely to get a deeper understanding about what they learn and to reach a level of learning which is beyond repeating detail facts [Hron, Hesse et al. 2002]. Learning in a community might as well mean more fun with learning. That may lead to a rather intrinsic learning which is known to be more effective than extrinsic motivated learning. Furthermore a community can be used for distributing, produce and store knowledge.

Communities in the practice of education - the gap

Companies which face new challenges (globalisation, high competition, high need for flexibility) claim for an education which goes beyond a transfer of knowledge. Pure teaching of detailed facts are nowadays in danger to be already antiquated when presented. Companies see instead a high need of employees who have social competence, competencies in problem solving and the ability and possibility for life long learning. Pedagogical research offers for decades concepts to meet those claims. But if we look in the educational practice we find still rather behaviouristic than socio-cognitive forms of education. Both, analog as well as electronic learning communities are often not explicitely or only poorly supported. In most cases community building is not at all taken into account.

Communities in mobile learning - one step to bridge the gap

We assume mobile technologies and its possible impacts on education might have the potential to lower barriers and add value for a community of learners. Such potential is derived from following factors:

a) mobile devices belong to the learner's personal sphere,

b) mobile technology can integrate context and context awareness to learning

c) various computer supported learning settings can be arranged ad hoc and flexible

d) chance to integrate computer support in face to face meetings

e) chance to enrich the phase of community building

a) Mobile devices (mobile phones or smart phones, PDA (personal digital assistant)) will or do already belong to a learner's personal sphere and will be an accessory like glasses, wallet or the keys. That means the learner can take learning opportunities directly in the situation where they occur, because he has his learning environment always at hand.

Here an example: If you walk as tourist through Zurich, you may come to a street "Spiegelgasse". There you may detect an unostentatious sign telling you "Lenin was living here for 14 month". You may become interested why he lived there, what was he

doing there and so on, but it is very unlikely that you will make a note and research it back home. But if you had the chance to get information right there on that spot, you might take the opportunity and learn something. Other people might as well have been on that spot before and might have had similar questions. With mobile devices there would be a chance to put virtual post-its on the object, read post-its from others and suddenly you are part of a location aware community.

b) Another value of mobile devices is their potential to integrate context in your interactions with the community [Sharples, 2002]. Let's extent our little example with this context awareness dimension:
You know possibly some friends which are extremly interested in Russian history and want to tell them about your findings. You see on your mobile device two pals being online and currently not occupied, but free for chat. Your mobile device allows them to see where you currently are by location based services and you can send them what you see by MMS. Without long explanations you are able to start communication with them. You may as well take a picture of the sign as learning material and annotate it with your thoughts and discussions.

c) A more practical value of mobile devices is the possibility to arrange learning settings very flexibly and spontanously. Teachers and learners will get the possibility to jump from a class setting to group-work further to individual work and back to a class situation. Such a scenario is for instance typical for case study based education or for educational computer simulations. Currently such a design of education is hardly computer supported, because PCs are heavy, fixed by cables, large screens block natural face-to-face communication, or simply not available in sufficient numbers in the lecture/ meeting room. If each learner had a mobile device (could be as well a tablet-PC or laptop) such arrangements could become so much easier.

d) Another chance of mobile learning is to melt virtual with real communities. Even when the community members (like a class of students) meet in real, there might be needs to interact electronically. Put yourself in a typical conference situation. A lot of people with similar interests meet on one location and still there are limited space and limited opportunities to interact with each other. Participants might want to interact during presentations, comment on the presentation, rise questions, discuss issues or give feedback, find interesting discussion partners during breaks etc.

e) Until now we discussed only possibilities of mobile technology how to fuel an active community by availability of access anytime and anywhere. A more or less ignored critical factor of success for a mobile community lies in the question how to build it.

There is little research available about the role of mobile technology in this matter. A very common mean to build a strong real life community among young people or children is to play games with them. In Sweden new students at a university experience usually the "nollning" periode organised by older students. They spend several days to get to know each other by playing games and doing orientation tours through the new city and institutions of the university. Those few days lead often to strong friendships through the whole student's lifetime and gives orientation which cost students in other countries months to gain it. With new possibilities to integrate location based services, computer supported cooperation, and electronic communication we would be able to add new services in this crucial periode of student's life.

Activities in Zurich

Our research group's issue in the EU-project MOBIlearn is to formulate and substantiate ideas, produce new mobile learning tools, test them in real environments, and give finally recommendations about how to integrate mobile learning in education. MOBIlearn decided three scenario strands to test and show the consequences of mobile learning. Those strands are health, museum and executive MBA-course [D2.1]. They allow us to research a wide variety of learning situations as formal and informal learning, learning synchronously or asynchronously, learning collocated or distributed, learning as individual, in small or in large groups.

In Zurich we are focussing on the executive MBA strand, because we are involved in the local executive MBA courses and have for that reason selective access to that group. There are two sub-scenarios available. A case study scenario deals with a more formal type of education. Executive MBA students get the task to work with a case study, prepare a presentation in small groups, discuss questions in the whole class and compare the situation in their companies during everyday worklife with issues from the case study. The main idea is to test the educational usefulness of mobile devices for cooperation among students. We want to experience the impact of context awareness and see how communication can be linked and integrated with learning material that is already existing or created by the students themselves. [Sharp, Taylor, Löber, 2003]

The other scenario deals with an orientation game for study beginners [Göth, 2003]. The participants do some type of rally through the instances of their university and have to perform tasks. At the same time each group is in competition with other groups which they either have to catch or mustn't be caught. The game is heavily supported by location based services on mobile devices. The localisation works outdoors by GPS as well as indoors by using wLAN access points as reference points.

Outside the project MOBIlearn we try to develop a system with location aware communication. Furthermore there are research initiatives on virtual communities in tourism [Prestipino, 2003].

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