Mobile Learning and Self-Regulation

By Christian Glahn

Right before the end of the year, Martine Baars and I had the opportunity to host a joint workshop on the constraints and opportunities of mobile technologies for facilitating self-regulated learning. Nine participants joined the workshop. The participants' background ranged from researchers and lecturers at universities, to trainers in the industry and HR officers in public administration.

We started off the workshop with a small survey among the participants on their belief that learning with smart phones on public transport, such as on the bus or the train, is beneficial for the academic achievement of students in higher education. Seven participants agreed that learning in public transport is beneficial for academic achievement.

The workshop had three parts. First, I presented the Mobler app and our findings on how students use the app for claiming new learning contexts. Second, Marine presented the experimental self-regulation app that is part of her research project. Finally, we asked the participants to reflect on the constraints and conditions when using mobile technologies for stimulating their students' self-regulation.

Feedback-loops and Reminders

The presented apps target self-regulation from two different angles. The first angle aims at lowering the barriers for learning activities in fragmented time intervals. This requires removing the obstacles for engaging and disengaging in learning quickly and easily, while maintaining a full feedback loop. This removes the need for maintaining cognitive tensions between activities. The student's self-reported and actual regulative behaviour indicated over the period of five consecutive years that only lowering these barriers encourages the students to expand their learning environment into new contexts. Self-regulating students utilise this for increasing their overall time on learning and reducing the exam preparation time. Mobiles are particularly suited for supporting such learning activities, because they are often in close proximity and easy to start without much overhead.

The second angle aims at the meta-cognitive dimension of learning by making students better aware of their learning. This is achieved by a small questionnaire that is presented to the students periodically together with the opportunity for exploring the changes of the personal learning over time. This solution makes use of the ability of mobile devices to trigger smart alerts and receive notifications. The key assumption is that the app helps students to develop a deeper understanding of their learning and to improve their self-regulation strategies.

Opportunities and Constraints

The last part of the workshop was dedicated to the participants. Their exercise focused on identifying the opportunities and constraints for mobile learning in their teaching settings. The discussions yielded three interesting topics:

1. Suitable media formats for mobile learning
2. Reducing in-class time in favour of practice time
3. Balance between access to learning and information overflow

One interesting discussion sparked around the idea of multimedia micro learning and suitable resource formats for accessing. Given the success of videos in MOOCs, the participants asked themselves, if this format can be translated to mobile learning settings. One challenge of videos is that the learning activity is constrained by the duration of the video, which requires full attention. This is not suitable for all learning situations. Another challenge was the use of sound and audio. Like videos, audio has a duration. While audio requires less attention by the students, these activities cannot get started or finished easily. Moreover, consuming streaming resources provides little opportunities for active learning and feedback because these formats constrain different modes of interactions.

In relation to the second topic the participants discussed the connections between practical relevance of learning and student engagement. Mobile technologies hold the potential of bringing learning experiences closer to practical experiences. From the organisational standpoint this creates the opportunity of reducing in-class study time and creating closer ties to the practical tasks. However, this also requires that stakeholders need to become aware that mobile devices are not only distractors. Another constraint is the recognition of learning when using primarily mobile devices. This demands for a new understanding of the teaching expert.

With regard to the third discussion topic the participants identified many opportunities of mobile technologies for increasing the accessibility of learning. By reaching into and bridging between different learning contexts, mobile and smart technologies allow to organise information transfer more efficiently, allow students to get faster support, and help lecturers to communicate among each other. This creates the opportunity for more efficient and effective in-class experiences, such as the flipped classroom. The flipside of these opportunities is that the technology has to work out of the box and the amount and rhythm of information requires careful consideration in order to avoid information overflow, stress and pressure for the students. Therefore, it is important that lecturers balance between the enabling and the constraining aspects of mobile learning.