

The Mobile Learning Ecosystem:

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Good day everybody and welcome to this webinar on the mobile learning ecosystem. At the end of this webinar you will be able to identify the various components of the mobile learning ecosystem and understand how they come together to contribute to the effectiveness of mobile learning. You will understand how the interplay of the different elements impact the effectiveness and quality of mobile learning.

Please enjoy.

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Before we actually look at all the elements of the system, it would be helpful to define what mobile learning is. The definition has been discussed in literature over the years, starting with the focus on the mobile technologies and then shifting to the role of the mobile learner and the mobility of the mobile learner, including the mobility of the location, times and context. For the purpose of this webinar let's define mobile learning as:

Learning or training that results in knowledge construction, skill development and performance support.

Learners participate in this learning across various times, various locations and settings. That learning is enabled by mobile technologies, by mobile infrastructure and by the devices - which are handheld, or a little bit bigger; they fit in your pocket, they fit in your purse, or maybe a bag (like iPads); they are definitely portable. What characterizes all of these devices is that they're connected, or capable of being connected and always on, and, obviously, they are personal. Many people would say they're ubiquitous; they're available all the time or whenever you need them. The *actual* definition of mobile learning truly depends on the needs of the learners we are working with, and the context in which we are designing and providing that learning.

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This image demonstrates the various categories of the mobile learning ecosystem. I've tried to isolate the most vital dimensions of the mobile learning ecosystem, but, obviously, they do not work in isolation. All these various categories overlap, interplay, and it's the relationship between them that actually makes the mobile learning happen. I will spend a little bit more time on every one of these dimensions on the next slides, so we will start with the temporal then go into transactional, physical, technological and pedagogical dimensions of the system.

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Let's have a look at the **temporal** dimension. We're looking at the time of learning, *when* we're learning, *how long* we're learning for, within what *time limits*. We always talk about mobile learning being flexible -time flexible, but it's very important that the learning episodes are conducive to knowledge construction. We're looking both at these learnable moments occurring at the right time and place for learning, as well as the convenience for the learner. What we're looking at is mobile learning taking place both within schedules and outside of schedules. It may be scheduled as a component of a class, but usually it is augmenting the learning that takes place in the classroom. Mobile learning is time-flexible or time-bound. It can be a brief learning event or it could be a series of those events, that we go into or come out of at our convenience, or it could be a more focused, longer learning episode. We could be starting at a time that is convenient for us, pause for some time, and then return to the learning later on. It's very important that when we design mobile learning we take that into consideration. It's not always that the learner, or the teacher, the expert, the facilitator chooses the time of learning flexibly. As I said before, quite often we have to plan ahead what the most conducive to learning environment is and work it into our instructional design. There are opportune times where we can focus on our private practice - learning, be it even rote memorization or listening to a podcast, answering an email, asking a quick question over a text - and these are the learning activities that can be completed, for example, on the bus, while we're waiting in a lineup, even when you're watching TV - I don't know if I recommend that - but we all do that; we all pick up our phone spontaneously and ask a quick question. Now, that might be - doesn't have to be - but might be part of our learning process. As you can probably hear by now, mobile learning, as far as the time that we're spending on it, should be rather chunked-up, but it could also take a little longer period of time, for instance, when we focus on a learning activity, be it an individual and collaborative learning activity. It could be totally time flexible, or it could be attached to a particular moment and place in time.

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I just mentioned the **place** of learning - obviously, the time and place of learning are interwoven and the two of them have to interplay for effective mobile learning to take place. When we look at the physical dimension of learning, we are actually asking ourselves, "where does the learning take place, what is the layout of the setting, and what are the physical limits we're working with?" The mobile technologies do let us navigate across various locations, various spaces making learning more flexible and this is one of the main benefits of mobile learning; but we also have to remember that some of the learning is context dependent. It's our interaction with the context we are learning within, that brings in additional information. It is important to understand that it's a spectrum of flexibility, once again, like it was with the time dimension. The place depends on what the learning outcome really is - is it just listening to a podcast on the bus, or at home, or is it actually focusing on some context-embedded learning activity that involves other players as well.

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For any learning to occur, we need the internal cognitive processes, but we also need to communicate, to collaborate, to enter into a transaction with others – with other learners, with our facilitators, experts, passerby’s, etc. Here we are talking about the **transactional** dimension of mobile learning. As you see, I divided it into three categories; the first one being **intrapersonal**: the learning activities that are happening within the individual. These are the internal learning processes like thoughts, ideas, reflections, they are within your private space within your mind. Then we go to the **personal space**: an intersection of your intra- and interpersonal regions; it’s the zone where interactions with external actions, artifacts, information, tools and any other resource occur – it’s like writing an email, or reading a book, listening to a podcast. Then we move over to a not-so-private space anymore – to a space where we share. The **Interpersonal (shared) space**: the social and public zones within which learning also takes place, and good learning – mobile learning – takes place. We’re really looking at the dimension, at the space, where we exchange information, share information, share learning, [and] collaborate, either within an ad hoc community or an established community. Here we will be looking at tools like *Facebook* and *MOOC* – like the one we are participating in right now – or just going into a café and just learning and reflecting within your own private, personal space.

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How do you take learning into a café or onto a bus? That would be the portable technologies. Which takes me to the next aspect of mobile learning: the **technological** dimension of the ecosystem. What tools are we using, how are we using them and within what infrastructure? [Those] are the questions we have to answer for the design of mobile learning and the usage of the right technology to take place.

I like to think of the mobile technologies as the tools – as the enablers of what is a good mobile learning design. These are vital enablers, this is a very important component that actually affords the flexibility for the learners, for the expert, for the professor to communicate, and learn, and exchange information anytime, anywhere, and at the right time and place.

The main role of the technology would be to enable access to content, access to other learners and to the experts. While you are actually interacting with the technology, certain cognitive processes take place as well. On top of that the technology allows you to capture the context around you, allowing you to interact with the setting with which you are learning...allowing you to create artifacts which support learning processes and the learning outcomes, as well as sharing those artifacts at the end. The mobile technologies let you use educational apps, educational games that are designed for the particular device, and, on top of that, they offer tools like augmented reality that allow for the empowerment and engagement of the learner in the actual learning process. Once again, the mobile technologies are vital enablers of what mobile learning is all about.

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Finally, the **pedagogical** aspect of mobile learning. It is crucial how we approach the learning-teaching relationship – why we do the things we’re doing. What are the

right approaches and the right theories to be implemented in the learning that we are designing? Who is doing what? What materials are we using? And what mobile learning frameworks and models are we going to incorporate? We have to look into what really works in that unique environment of learning that is done on the go - the learning that is often situated and embedded in a particular context - that learning that doesn't have the expert present in person all the time, but still requires the guidance and facilitation of the expert from time to time. We have to look very carefully at what particular strategies work in this unique mobile learning context. We have to design appropriate activities for the learners to be engaged, for the learners to actually do the learning themselves. What procedures and what content and materials are we going to put together and how are the students going to access them? Also, what kind of scaffolds and supports are we going to offer those students so that they are not lost in the learning process using new-to-them technology but, also, taking upon themselves a new approach to learning - learning that's often spaced out, chunked-up in bit-sized pieces that have to be put together in a seamless way. What models and theories of teaching and learning are really the most appropriate for this rather unique approach to learning - learning on the go, learning often outside a classroom - formalized environment, and very often having elements of informal learnable moments, informal learning episodes that students get involved in? Is situated learning what we should really be looking at? The activity theory? I propose ecological constructivism that actually involves an element of interaction with the context around you, and learning from the context around you. The context of our activities are very powerful when you look at where mobile learning takes place. How are we going to assess the learning of our students?

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We've spent a little bit of time looking at the vital elements of the mobile learning ecosystem. I discussed the five aspects of the system rather briefly, but I encourage you to think of them as interrelated. They co-exist and have to be considered together. They have to be considered and looked into in much more detail for mobile learning to be designed effectively and have effective outcomes. The elements that we have talked about evolve - they evolve as the pedagogy of mobile learning evolves, the technologies and their capabilities - the affordances of the technology progress. As they evolve, the whole system emerges into something new. It offers quite an array of possibilities and benefits as well as challenges. I encourage you to look into the benefits and the challenges of the five elements of the ecosystem in a little bit more depth.

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I hope you enjoyed the webinar and learned what you were hoping to learn. Now you should be able to identify the various aspects of mobile learning. You should be able to understand what constitutes mobile learning and what contributes to its effectiveness.

I'll see you in the next webinar. See you then. Bye.