

Design Principles for Mobile Learning:

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Good day everyone, and welcome to the video on the design principles for mobile learning. At the end of this webinar you will be able to determine the basic design principles for mobile learning and identify the key limitations to the design and development of mobile instruction.

Enjoy your learning.

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Before you start the design activities, you have to ask yourself a number of questions. The first question is:

1. Is there a true need for mobile learning?
2. What is the educational problem you are going to address?
3. What can m-learning offer as opposed to other educational approaches and strategies?
4. What are the benefits of mobile learning in this unique educational context?
5. What are the resource requirements (physical/logistical, technological, human, and monetary)?

After you've answered all of these questions, you can move onto some other vital questions that are part of your needs assessment.

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The next question you want to ask yourself is in regards to mobile technologies:

1. The type of mobile technologies available to our learners and teachers and access to the Internet: are they going to complete most of the learning activities online or offline?
2. Are our students in a situation where they can use their mobile devices for hours and recharge them when necessary or maybe there are limitations to how long they can keep the device running?
3. What type of devices are they using: are they using small-screen smart phones, dumb phones, feature phones, iPads or other tablets?
4. How do people use their devices: what are their mobility patterns? What are their device usage patterns? Where and when and under what time and physical limitations will the learners be using their mobile devices? The context they take up mobile learning activities in – that context has a very significant impact on the design of both the mobile content and mobile delivery.
5. In any case of instructional design, you have to look very carefully at the learning outcome: what learning outcome are we targeting? Are we aiming at preparing students to complete a driving test or are we helping them understand mathematical concepts?
6. The learner needs and preferences would be the next thing you want to carefully look at, e.g., what media should be used for the target audience? Is text-based communication the solution?

Or maybe audio would be a preferred method? Are you designing for adult learners? Are they mature students with any prior knowledge in the subject area or are they just beginners? Are they autonomous and self-directed students, or are they students in a primary school that need guidance, facilitation and support in the process, not only in the process of using the mobile content but in using the devices as well?

7. You have to select the appropriate theoretical framework: you need an overarching approach to the learning activity and tasks. Are you aiming at a social constructivist learning environment for example? If so, you have to ensure to incorporate interaction with peers and other actors in the learning events.
8. To leverage some of the existing materials would be a good option and can be adapted for the mobile learning ecosystem. They would have to be changed, tailored and customized to the learning that you are developing.

Let's now look at some key characteristics of mobile learning that you have to leverage through your design of m-learning activities and tasks.

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I have mentioned the key affordances of m-learning in my webinar about the pedagogy of mobile learning, but I will go over them very briefly so you can incorporate them into the design of the learning experience for your students. When possible, I recommend that you make sure the learning experience is authentic – that the students get to learn in a context that is relevant to the skills they are acquiring. Contextual learning is one of the most effective ways of learning, so, whenever possible, embed the learning, and situate the learning in the real-life environment. There are activities that you design as context-independent, for example, podcasts for students to listen to while they are on the go. Whenever possible, ensure that the learning experience and the learning activities are collaborative and connected. It's a good idea to mix in both individual activities, where students can concentrate on their cognitive processes, and then enrich them with collaboration and communication so the students can reflect on the learning and deepen the learning, and then build the knowledge while working with peers and experts. [Since] we are dealing with personal devices, it's a good idea to personalize learning, [to] customize it to the diverse needs of our learners. Make sure the learners are involved in relevant activities, that they are active, and hands-on. Experiential learning is a really good strategy for students to achieve very effective outcomes. Learning should be relevant and meaningful, a mix of formal and informal learning is something you [should] also include in the design of your lessons and courses and activities. When we talk about various activities, it is important that you blend both focused and flexible activities (those that students can complete anytime and anywhere) and those more focused and structured that students are to complete either individually, or in a group and/or pair, and in a particular situation that the information is actually referring to. Such learning should be guided by experts and peers to the degree that the particular student, or group of students require. And always make sure that the learning experience is engaging and empowering.

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Mobile learning is unique. Mobile learning is not just compact, shrunk, reduced-in-size e-learning. Mobile learning has its own unique affordances, challenges, limitations and capabilities. When designing

for mobile learning, keep it in mind and look very carefully at these four aspects of the design for mobile learning:

- The content
- The delivery methods and tools
- Interactions sharing and communications methods
- The design of learning and teaching activities

Let's first look at the content design.

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Here are a few recommendations that you should consider when thinking about the design of content for mobile learning. First of all, use multi-media whenever appropriate. In certain contexts (for example, when students are only using smartphones,) text-based communication between students may be the only solution. However, when you are teaching languages, for example, you [should] like to include a little bit of audio and video to support the understanding...the comprehension of what the students are listening to. It is suggested that you chunk up the content that you are creating – that you put bit-sized modules and elements together in a connected way that enables seamless, continuous learning; however, also lets the learner pause when convenient and appropriate for him/ her. Include access to existing content and resources that are validated by an expert. Include activities and resources that are both required and optional. Students often go outside of the structure of the course looking for additional answers. It would be nice to include some pointers and point the students to additional resources. Once again, personalize: include personally relevant content that students can customize themselves – so that they can customize their own individual, diverse needs and that they can access it at any time they need it, or share it if they prefer to do so. It is a good idea to include reminders, notifications, and updates to help them with time management. If you can select appropriate educational apps that are contingent on the learning aim - the learning outcome that you're designing for, it's a good idea [to include those]. Another component that quite often is included [and] incorporated in mobile learning is social media tools.

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When designing for the mobile learning delivery, you have to consider quite a number of aspects. I put them in three main groups: starting with the physical aspect – the locations and the limitations of the location that the learning is going to take place in. As mentioned before, it could be context dependent, context independent learning, flexible learning at any place, or location-bound learning where the information comes from the context. Students could be learning in their personal space, their social space; a quiet place, or a very loud place – all of this has to be considered when designing. As far as the time of learning, you can have different lengths of the learning event: they can be brief; a series of longer learning episodes; really long activities; or you could be designing course-long mobile learning curriculum where you have to incorporate various types of activities. Once again, we talked about focused versus flexible - a mix of both is recommended. Don't forget that spaced learning - when learners learn and revisit the content information or skills from time to time in shorter chunks, but on a regular basis – has been found by research to be very effective. Finally, the technology: are we learning online, offline? Using tablets or phones (what types of phones)? Are our students using various platforms – then you have to design considering the various requirements and limitations of these

platforms. And, let's not forget, the usage of social networks, [which] should be also included in the considerations for the details of your design.

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What type of interaction do you want to incorporate in your design?

You might be looking at individual activities, even behaviourist types of learning where students are completing vocabulary assessment, for example; but, outside of that situation, you are quite often looking into involving some kind of interaction between students. It could be formal or informal interactions. It could be interaction via their mobile devices that is combined with f2f activities where students are together collecting [and] capturing data. Sometimes students are communicating and completing their tasks and activities f2f, but, in the case of mobile learning, most of the time they are either leaning at a distance, or communicating from two different places in time and space. According to what the needs are, make sure to include the appropriate channel and medium of communication. You could be using text-based chats or phlogs (phlogs are basically blogs that are using your voice.) Language learning students really take well to this type of phlog-based activity. You could be using synchronous or asynchronous activities (for example, phone calls versus email communication.) I recommend students build their own artifacts, share their own artifacts. You need some sort of exchange forum – a tool and a space that allows students to ask questions, share their resources, evaluate each other, [and] support each other. It is very important that you involve this type of support for the community of practice.

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I would like to share with you a list of activities that are most suitable for mobile learning. This is not an exhaustive list, it is just a few examples:

- It is recommended that you blend focused and spontaneous tasks and activities – those ad hoc tasks,
- Data collection and sharing should be a part of the learning,
- Personal reflection,
- Make sure that students can access resources and get just-in-time information,
- That [students] can connect with the community of practice – the community of learners,
- That they can access their experts, scaffolds and supports,
- Complete assessment tasks: either shorter ones, ad-hoc ones, or those that go over time and across various spaces and activities,
- Include more innovative activities as well, activities that are using the latest technologies (for example, augmented reality tasks in games).

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Let me finish with a few final words of wisdom based on my experience and research:

- Whenever designing mobile learning, start with the learner, start with your students – make sure it is all learner-centered,
- Define your educational problem and outcomes and design to that,

- Look at the technologies available and the technologies that are most appropriate to be used in that particular context,
- Make the learning experience engaging, empowering, authentic and active,
- Situated and context aware,
- Be prepared for change: when working with technologies, the technologies develop and change; the content develops and changes; and the expectations, needs and preferences of your students and teachers change.

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I hope you enjoyed this webinar and I will see you again soon. Bye.