Design principles for m-learning

Outcome:
To determine basic design principles for mobile learning and identify the key limitations to the design and development of mobile instruction.
Needs Assessment

Before you start the design...

• True need for m-learning?
• What educational problem?
• M-learning versus other educational solutions?
• Benefits of mobile learning in the unique educational context?
• Resource requirements \textit{(physical/logistic, technological, human, and monetary)}?

Consider the potential enablers, challenges and risks.
Needs Assessment

- Mobile technologies
  - Access to the Internet and power
  - Device usage and mobility patterns and context
- Learning outcomes
- Learner needs and preferences
- Theoretical framework
- Existing materials incl. educational apps
Key Characteristics of M-Learning

Design learning experience that is:

- Authentic
- Contextual (context-independent vs. embedded)
- Collaborative, connected
- Personalized
- Active
- Relevant and meaningful
- Formal and informal
- Flexible and focused
- Guided by experts
- Supported by experts and peers
- Engaging and empowering
Aspects of Design

m-learning ≠ compact/ shrunk e-learning

- Content (incl. learner-generated artifacts)
- Delivery (incl. the physical and temporal setting)
- Interaction, sharing, and communication
- Learning and teaching activities
Content Design

- Multimedia
- Bite-sized yet connected
- Access to existing content and resources
- Required and optional
- Personalized and student-generated
- Reminders, notifications, updates
- Educational apps
- Social media

…contingent on needs and context
Delivery Design

- **Physical aspect (location)**
  - context-dependent <> independent (flexible <> location-bound)
  - personal <> social space
  - quite <> loud and busy

- **Temporal**
  - brief event <> series of episodes <> long activity <> course-long (continuous)
  - flexible <> focused
  - spaced-out

- **Technology**
  - offline vs. online
  - resources web-based or residing locally
  - phones vs. tablets
  - cross-platform
  - social network usage

...contingent on needs and context
Interaction Design

Individual <-> collaborative
Formal <-> informal
F2F <-> via mobile devices <-> blended

• Communication
  - channel and medium, e.g., text-based chat <-> phlog
  - synchronous <-> asynchronous e.g., phone call <-> email

• Sharing and exchange
  - artifacts
  - questions
  - resources
  - peer evaluation
  - peer support

...contingent on needs and context
Activities Design

According to the type of learning (behaviourist, constructivist, situated…)

- More suitable for mobile:
  - blend focused and spontaneous tasks and activities
  - data collection and sharing
  - personal reflection
  - accessing resources (just-in-time, on-demand information)
  - connecting with the community of practice
  - accessing experts and supports
  - assessments
  - augmented reality tasks and games…
  - contingent on needs and context
Activities Design

• Start with the learner
• Educational problem >> outcomes
• Technologies and unique context
• Make the learning experience:
  - Engaging and empowering
  - Authentic and active
  - Situated and context-aware (whenever possible)

Be prepared for change…

…contingent on needs and context