Mobile Augmented Reality 4 Learning

prof. dr. marcus specht
Centre for Learning Sciences and Technologies
mailto:marcus.specht@ou.nl,
socialmedia: marcuspecht

Courtesy of “Window to The Future” By Steve Kosareff
Open Universiteit - CELSTEC
Centre for Learning Sciences and Technologies
Research Group Mobile Media

Prof. Dr. Marcus Specht, marcus.specht@ou.nl

Mobile Media for Learning, Reflection, and Personal Development
Research Lines and topics

#1 Mobile and ubiquitous learning content
*Ubiquitous access to learning support and distributed multi-format learning content.*

– Mobile Video and Audio Content (Youtube EDU, iTunes U), Cloud-based learning content, Mobile data collection and aggregation, eBooks and tablet content.

#2 Orchestration of seamless learning support
*Instructional design of nomadic and seamless learning support.*

– Ubiquitous LMS access, Mixed Reality Games, Excursions and Field Trip systems, Mobile Augmented Reality, Mobile Learning Games, Object and location-based service access.

#3 Situated learning experiences
*Connect the Learning and the real World, context-aware learning systems, sensor-based learning support.*

– Experience sampling apps, Sensor-based location ambient displays, Context-aware social media, Tangible and smart-objects for learning
Mobile Learning Applications Domains

• **eHealth and healthcare**
  EMURGENCY: performance support and notification system, Handover procedures, Reference apps for daily practice

• **Law and Management education**
  OpenScout, OUNL iPad pilots, UNHCR mobile simulated games

• **Architecture and creative industries**
  MACE location-based content and social media, Cloud-based cooperation methods in design and architecture

• **Cultural Heritage**
  Mixed reality field trips with Cultural Sciences

• **Logistics**
  SALOMO: Situation Awareness and Mobile data collection

• **Language learning**
  ELENA, PhD projects

• **Teacher education and networking**
  mobile social networking apps
Service and research portfolio

- **How to innovate?**
  *Innovation workshops* for mobile media and learning in the OUNL Learning Innovation Laboratory, Desirability and technology acceptance studies of innovative solutions, Open innovation policy, open source frameworks

- **How to learn best?**
  Educational and instructional design for blended and ubiquitous learning
  Evaluation of increased awareness, efficiency, effectiveness.

- **How to implement your mobile learning support?**
  Prototyping mobiles cross-platform and with embedded technologies.
  Mashup and visualisation technologies for integrated solutions.
  Customized mobile solutions integrating legacy software.

- **What is my return on investment?**
  Piloting and evaluation of new solutions, following standardized methods.
  Usability and acceptance studies (mobile eye-tracking).

- **How to optimize your existing processes for mobile?**
  Content engineering and automation for mobile and multi-platform delivery.
  Multi-platform access to legacy systems integrated in daily practices.
#3 CELSTEC: leren in context

- Augmented Reality Games,
- Excursions,
- Mixed Reality Games,
- Mobile Games and Simulations.

http://code.google.com/p/arlearn/

Authoring

Mobiele App

StreetLearn
New media for learning and professional development
Mobile Augmented Reality 4 Learning

prof. dr. marcus specht
Centre for Learning Sciences and Technologies
mailto:marcus.specht@ou.nl,
socialmedia: marcuspecht
whitepaper online: 
http://www.e-learningevent.nl/e-blog

youtube playlist: 
http://www.youtube.com/playlist?list=PLA2A5852D66C31396

follow my blog for updates: 
http://www.marcuspecht.de

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http://openu.nl
What is mobile augmented reality?
Components

- smartphones
- AR browsers
- camera
- HUDs
- wireless networking
- GPS
- sensor technology
- magnetometer
- gyroscope
- accelerometer
- magnetometer
- gyroscope
- accelerometer
- embedded displays
- tagging and tracking
Mobile Augmented Reality is about linking digital and real world artefacts based on context parameters.
AICHE: Ambient Information Channels

http://www.designbynotion.com/metamirror-next-generation-tv/
Mobile Augmented Reality for Learning

Concept
Mobile augmented reality for learning

Concept

Enrichment

Aggregation

Sensor

Sensor

Sensor

Sensor

Sensor

User

Channel

Artefact
Mobile augmented reality for learning

Concept

Synchronisation

Framing

User

Channel

Env.

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Augmented Reality
by marcuspeel's video channel

Examples of augmented reality applications.

1. BMW augmented reality
   by VR41
   828,142 views

2. Augmented Reality Business Card
   by augmentedrealtyab
   113,116 views

3. Augmented Reality Business Card
   by urlancarlo
   37,987 views

4. ARthmrr - An augmented reality shooter
   by ARLe5T
   876,405 views

5. PIT Strategy - Augmented Reality Board Game
   by BeyondReality09
   75,151 views

6. Gizmondo Augmented Reality Game
   by takarma
   322,566 views

7. Wikitude AR Travel Guide (Part 1)
   by joes2522
   297,862 views

8. Layar, worlds first mobile Augmented Reality browser
   by raem
   1,427,891 views

http://www.youtube.com/playlist?list=PLA2A5852D66C31396

mobile augmented reality for learning
HUD

http://www.peakfinder.org/
Tricorder

Interaction
HCI Patterns
Holo chess
X-Ray Vision
Different Modalities
Educational Patterns
3D Dynamic Objects

3D Models to visualize concepts of the learning content (Geometry, Math, Astrology, Engineering, Architecture)
Augmented Books

Enrich a book experience with augmented content, can be 3D Models or contextualized information.
RWO

Scanners, Proxy

Scan RWO for additional information, exploration driven. Example: Language Learning
Sensor Based Layers

Present POI Information based on the current sensor information got from user device. Example: Wikitude
Collaborative Annotation

Shared digital annotations filtered by user context and following a learning logic. Example: Locatory.
Mijn grootouders hebben vroeger ook al stickers op de koelkast geplakt. Is het tegenwoordig anders omdat ik de stickers nu bekeek door een smartphone?

Augmented Reality (AR), dat doet toch iedere goede gids in een museum? Is het tegenwoordig anders omdat er geen gids meer is?
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<th>Reflection</th>
<th>Collaboration</th>
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**Reflection**
meer weten?