It’s Pedagogy GO
with location-based mobile learning games

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http://bit.ly/21Pnc9g

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This Presentation

Reports on the educational benefits for higher education students playing and designing location-based mobile games (LBMLGs)

They are largely based on evidence from student perceptions and will focus on the impact from:

- LBMLG design
- integration and implementation strategies
- students designing and developing LBMLGs
Location-based mobile learning games

- A mobile app to deliver the contextual learning
- GPS and maps to power-up experiences with authentic location-interaction tasks
- Storytelling with rich digital media to deliver meaning, persuasion and an emotional connection
- Simple gamification strategies to help with retention and recollection of knowledge
Location-based mobile learning games
Using GPS and interactive media to unlock educational content at real places in real situations
Objectives

Building on research by Ardito et al. (2010), Avouris & Yiannoutsou (2012), Priestnall et al. (2010), Liu & Chu (2010), Alnuaim et al. (2012), Slussareff & Bohackova (2016), Hwang et al. (2016), Sailer et al. (2015) and others on the benefits and challenges of playing LBMLGs, our study has investigated:

- Benefits of playing LBMLGs on student's engagement, motivation and learning
- Impact of the LBMLG instructional design on educational experiences
- Benefits to learning as a LBMLG student designer versus player
- Challenges of implementing LBMLGs as an educational activity
- Issues of integrating LBMLGs across disciplines
Mobile Learning Academy

Provides a complete platform to create, deliver, host and administer location-based mobile learning

**University Channel:**
Multiple Director licenses to develop, publish and host games

**Game Maker:**
Web-based software to link media, challenges and rewards to places and game mechanics. No programming is required!

**Apps:**
To navigate, discover, perform challenges and upload media (iOS and Android)

**Game Community:**
To explore games and playback game experiences

**Admin tools:**
To record player analytics

http://mobilelearningacademy.org

The Mobile Learning Academy is a 7scenes product to support new forms of learning for the 21st century. 7scenes, a mobile storytelling company in Amsterdam delivers a branded, CMS based software platform, optimised for location-based applications on smartphones.
The Development Ecosystem

Design
- Identify the concept, scope it out
- Look for layers of content at the location
- Put context around the concept with a story
- Find places where key activity will occur

Develop
- Use game-maker software to link rich media to places, add location-interaction tasks, quizzes and game-play
- Test and publish

Play
- Walk to places. GPS tracking triggers the place marker to activate multiple screens of rich content and tasks
- Perform challenges, answer quizzes and upload photos and notes
- Share your experiences via Facebook and Twitter
LOCATION-BASED MOBILE LEARNING GAMES

2014
1 game
500 students

2015
3 games
700 students

2016
80 games
1400 students
During 2016 ..... 

80 LBMLG’s were developed by ....

16 academics and professional staff and ....

87 students across ....

4 disciplines (Bus, Ed, Hum, Sc) resulting in ....

1400 games being played
Data Collection

- observations / interactions with students while playing and designing the games
- online surveys to discover student experiences
- focus group sessions

E2 Ethics approval ID:36104
Results (student players)

Students either strongly agreed or agreed that playing LBMLGs provided them with an authentic (85%), engaging (88%), team building (74%), a fun way to learn (85%) land helped them understand the topic (67%).

Figure 1 - Overall survey results for LMBLGs enhancing educational experiences by playing (n=162)
Side-by-side comparison (student players)

Wide-ranging agreement (<25% variation) of the LBMLGs ability to deliver engagement, be an enjoyable outdoor experience, a fun way to learn and an authentic learning experience. These did not vary significantly among the games or across disciplines - an important finding for deployment.

There was >25% variation to five questions.

The LBMLGs:

- contribution to learning
- capacity to deliver cooperative and team building processes
- potential as an ice breaker activity
- ability to practice different skills
- being a motivator for further research

*Figure 2 - Per game results for LMBLGs enhancing educational experiences by playing (n=162)*
Results (student designers)

Students either strongly agreed or agreed that designing LBMLGs provided them with an engaging (84%), team building (84%), fun (76%) learning activity. They also reported that it gave them an opportunity to practice different skills (84%), implement their own ideas (84%) and enjoyed developing a game for an authentic audience (78%). Only 35% considered it helped them understand the topic more.

Figure 3 - Overall results for LMBLGs enhancing educational experiences by designing (n=37)
Side-by-side **comparison** (student designers)

Wide-ranging agreement (<25% variation) of the LBMLGs ability to deliver engagement and across the games or the 2 disciplines (Business, Education) indicating generalization of results.

There was only one question with >25% variation:

The LBMLGs contribution to learning

*Figure 4 - Per game results for LMBLGs enhancing educational experiences by designing (n=37)*
Conclusions

- Playing LBMLG's provide an active, engaging, motivating teaching and learning experience for HE students.

- The authenticity of playing LBMLG's in the real world strengthens a student's immersion with study material.

- Students who designed LBMLGs built their ICT capability and capacity and their online research skills.

- LBMLG's can be integrated successfully across disciplines. We have confidence in the ability to develop institution wide deployment frameworks.

- Pedagogical benefits of playing games are influenced by game design factors and implementation strategies:
  - **Design factors** (eg. content, duration, level of difficulty, location, tasks, competitiveness)
  - **Integration strategies** (selection of concept, links with learning objectives)
  - **Method of engagement** (tutorial, excursion, lecture, mandatory/voluntary etc)
  - **Staff support** (technical, pedagogical, followup, motivation)
  - **Challenges** (technical, environmental, student characteristics)
Future Work

- Complete the development and dissemination of a framework and associated resources to assist academics to plan, create and implement LBMLGs into courses.

- Pilot practices for the summative assessment of LBMLGs designed by students.

- Pilot procedures for the integration of student designed LBMLGs into fully online courses.

http://pedago.online
EDUC 3068 (Fully external)

Design and develop a location-based mobile learning game delivered as a mobile app at a destination of your choosing (e.g., your home town, public space, cultural institution).

1. TASK FAMILIARIZATION
   View resources, readings on course website, key support

2. LBMLG WORKSHOP
   Virtual Classroom
   Receive director account

3. CONCEPT PLANNING
   Choose location, key places, scope, narrative, media,

4. DESIGN & DEVELOP LBMLG
   Create/test/publish/play

5. PEER REVIEW
   Play another student's LBMLG and submit a peer review

6. ASSESSMENT
   Written reflection on value of LBMLGs in

1 week
2 weeks
2 weeks
1 week
1 week
1 week
References


Questions?
http://bit.ly/21Pnc9g

Interactive Workshop Wednesday

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Provide an experience & connect to everyday life storytelling, gameplay, augmented reality & location interaction