Seamless Learning in new Learning Spaces

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13th World Conference on Mobile and Contextual Learning

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We invite you to the 13th World Conference on Mobile and Contextual Learning. This year the conference has the focus topic “Mobile as mainstream – towards future challenges in mobile learning” and we are expecting a wide range of contributions representing the diversity of the mobile learning community.

Register now!
#1 SEAMS AND OPEN LEARNING SPACES
OPEN EDUCATIONAL RESOURCES

iTunes U, Youtube EDU, …

Coursera, edX, OpenLearn, Futurlearn

GLOBE, Ariadne, ODS, MACE, Sharetec, MELT…
Yesterday, there was a wall of Tesla patents in the lobby of our Palo Alto headquarters. That is no longer the case. They have been removed in the spirit of the open source movement, to make advancement in the field of electric vehicle technology.

Tesla Motors was created to accelerate the advent of sustainable transport. If we clear a path to the creation of compelling electric vehicles, but then lay intellectual property landmines behind us to inhibit others, we are acting in a manner contrary to that goal. Tesla will not initiate patent lawsuits against anyone who, in good faith, wants to use our technology.

When I started out with my first company, Zip2, I thought patents were a good thing and worked hard to obtain them. And maybe they were good long ago, but too often these days they serve merely to stifle progress, entrench the positions of giant corporations and enrich those in the legal profession, rather than the actual inventors. After Zip2, when I realized that receiving a patent really just meant that you bought a lottery ticket to a lawsuit, I avoided them whenever possible.

At Tesla, however, we felt compelled to create patents out of concern that the big car companies would copy our technology and then use their massive manufacturing, sales and marketing power to overwhelm Tesla. We couldn't have been more wrong. The unfortunate reality is the opposite: electric car programs (or programs for any vehicle that doesn't burn hydrocarbons) at the major manufacturers are small to non-existent, constituting an average of far less than 1% of their total vehicle sales.

At best, the large automakers are producing electric cars with limited range in limited volume. Some produce no zero emission cars at all.
OPEN SPACES
SEAMS IN LEARNING SUPPORT
(WONG ET AL, 2011)

• Formal and informal learning;
• Personalized and social learning;
• Across time; locations, social contexts
• Combined use of multiple device types;
• Physical and digital worlds
• Multiple learning tasks knowledge synthesis

“The most profound technologies are those that disappear. They weave themselves into the fabric of everyday life until they are indistinguishable from it.”

–MARC WEISER
distributed synced data channels ...
dynamically fading channels ...
embedded in real world ...
MULTI-DEVICE OUTPUT

personal and social views ...
NOT-ANYWHERE LEARNING

CHOOSE 3 PLACES IN WHICH YOU LEARN WITH THIS MOBILE APP
#2 A TEL RESEARCH FRAMEWORK ...
Enhancement Learning

Technologies

Mobile, Seamless, Ubiquitous
Personalised and Collaborative
Sensors and Context-Aware
BigData, and Analytics

Enhancement

Awareness Curiosity ... Knowledge Reflection
#2B WHAT ARE THE IMPORTANT CHARACTERISTICS OF NEW TECHNOLOGIES?
multifunction personal hubs...
sensing and augmenting...
analyzed usage...
Sensor data

1. audio
   - a. volume analysis
   - b. frequency analysis
   - c. rhythm analysis

2. video
   - a. face recognition
   - b. lighting conditions
   - c. image and object recognition

3. accelerometer
   - a. vibration
   - b. movement
   - c. activity
   - d. agility

4. magnetometer
   - a. orientation
   - b. magnetic field
   - c. shaking
   - d. absolute orientation

5. GPS
   - a. location
   - b. environment
   - c. proximity

6. user input (ESM)
   - a. everything else

analyzed data...
networked ...
data logging learning analytics ...
Lots of Changes

Computers change. They are embedded in our daily interactions and environments. They sense our activities and analyse the data, they visualise and integrate necessary data in our personal space.
HUMANS DO NOT ALWAYS LIKE TO DO ...

REFLECTION
HUMANS STRUCTURE AND ...

EPISODIC REFERENCES ...
LEARNING IS EMBEDDED …

… IN A SOCIAL CONTEXT …
WHAT MAKES IT PERSONAL IS ...

FEEDBACK ...

#6 AWARENESS
measuring power consumption on campus with standard facility management, plus sensors on workplaces and public devices, personal registration of power consuming activities.

Energy consumption ...
Notification Level: Make Aware
MAIN RESULTS ENERGY AWARENESS

• Situated displays have a generic effect of raising awareness and energy consumption on a mid to long term

• Badge and social incentive systems must be embedded with social media to have an effect

• Real world action foster curiosity, discussion, and reflection about the topic when combined with public displays
attention-aware displays ...

• raise and retain attention significantly better.
• lead not to higher cognitive load but to a significant higher knowledge gain.
#7 CURIOUSITY
Wonder
:-o ... curiosity ...
**Participants**

<table>
<thead>
<tr>
<th>Name</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mo</td>
<td>Scout</td>
</tr>
<tr>
<td>Marcus</td>
<td>Data Gatherer</td>
</tr>
<tr>
<td>Lucia</td>
<td>Annnotator</td>
</tr>
<tr>
<td>Nick</td>
<td>Researcher</td>
</tr>
<tr>
<td>Milos</td>
<td>Analyst</td>
</tr>
<tr>
<td>Alex</td>
<td>Reporter</td>
</tr>
</tbody>
</table>

**Task Overview**

**Flower Task**
- Collect pictures of at least 10 different flowers you can find on the meadows.
- Find out at which places they preferably grow and check if that matches your findings.
- Ask the expert which of the flowers is the rarest and which he likes best.

- States: Finished
- Participants: Mo (Scout), Marcus (Data Gatherer), Lucia (Annotator)
- Repository

**Tree Task**
- Collect pictures of at least 10 different flowers you can find on the meadows.
- Find out at which places they preferably grow and check if that matches your findings.

- States: Ongoing
- Participants: Mo (Scout), Marcus (Data Gatherer), Lucia (Annotator)
- Repository

**Communication**

<table>
<thead>
<tr>
<th>from</th>
<th>subject</th>
<th>time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lucia</td>
<td>A new task for you</td>
<td>11:35</td>
</tr>
<tr>
<td>Nick</td>
<td>Can you please...</td>
<td>11:27</td>
</tr>
<tr>
<td>Marcus</td>
<td>Question concerning task 1</td>
<td>11:22</td>
</tr>
<tr>
<td>Mo</td>
<td>Hello</td>
<td>11:21</td>
</tr>
<tr>
<td>Roderick</td>
<td>What shall we do next?</td>
<td>11:17</td>
</tr>
</tbody>
</table>

**Navigation**

Here are a lot of different flowers and old trees.

- Related to: Flower task
- Discovered by: Mo
inquiry engine, mobile data collection, learning analytics

Enhancement

Inquiry process, authentic data, formal to informal

weSPOT...
Demo inquiry for review

Description:
This inquiry demonstrates how the weSPOT workflow engine integrates with the ARLearn data collection framework.

Owner: Stefaan Ternier
Inquiry members: 1
Open membership

Help: Data Collection

Phase 3 - Data Collection
Last updated 8 days ago by admin
Guide, Data Collection

The data collection phase refers to testing a hypothesis and seeing whether the real world behaves as predicted by the hypothesis. Scientists test hypotheses by conducting experiments, which determine whether observations of the...
OPENSOURCE FRAMEWORK FOR MIXED REALITY GAMES

ARLEARN
LANGUAGE LEARNING

- http://www.elena-learning.eu
#8 REFLECTION
context indicators ...
reflection amplifiers


**Figure 8.2.** Student reflective practice a. Daily SMS received by students. b. What were your main learning channels today? c. How intense was your learning day? Rate it from 1 to 5.
METALOGUE

REFLECTION IN A MULTIMODAL DIALOGUE

Metalogue - FP7 ICT
Grant Agreement 611073
PRESENTATION TRAINER

BEST DEMO AWARD - ECTEL 2014
#9 SUMMARY
SO …

• #1 There are seams between the different learning contexts, locations, times, social contexts, …

• #2 There are opportunities with new technologies that are open, ubiquitous, context-aware, and personalized.

• #3 look at the aimed effects on awareness, curiosity, creativity, knowledge, latent variables, …
MINDFUL AND SEAMLESS LEARNING ...

- ubiquitous open content access,
- flexible sensor data aggregation,
- synchronisation of channels (to context and person),
- and dynamic visualization and output indicators (ambient displays).
THANK YOU!

M.M. SPECHT