Social, Local, Mobile for Learning Management

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#0 DESIGNING TECHNOLOGY ENHANCEMENT DRIVEN BY ...

SOLOMO
NEW DIGITAL CONTENT

OER, iTunes U, Youtube EDU, …

LOR: GLOBE, Ariadne, ODS, MACE, Sharetec,…

Mobile: GLOBE, Ariadne, ODS, MACE, Sharetec,…
Scaling Processes

MOOC: Coursera, edX, OpenLearn, Futurlearn, yOUlearn
NEW INTERFACES

Mobile Access, Augmented Reality
Tangibles, Sensor-Based Interfaces, Tabletops
Situated Displays, Ambient Displays, Public Displays
INTIMATE TECHNOLOGY

• Technology integration into our daily live
• on personal, environmental and infrastructural level

<table>
<thead>
<tr>
<th>Aspects of Formative Assessment</th>
<th>Number of Prototypes</th>
<th>Strategies Used</th>
<th>Example of Sensors Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge of subject matter</td>
<td>12</td>
<td>Presenting sensor data about the learner’s performance</td>
<td>Accelerometers, Cameras, Gyroscopes, Software sensors</td>
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<tr>
<td>Knowledge of criteria and standards</td>
<td>15</td>
<td>Presenting sensor data about the learner’s performance. Presenting sensor data about the learner’s physiological state</td>
<td>Accelerometers, Cameras, EEG, Heart-rate monitors, Galvanic skin response sensor, Gyroscopes, Software sensors</td>
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<tr>
<td>Attitudes toward teaching</td>
<td>2</td>
<td>Informing the tutor about the emotional state of the learner while performing learning tasks</td>
<td>Camera, Galvanic skin conductance, pressure mouse, accelerometers</td>
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<tr>
<td>Skills in setting</td>
<td>8</td>
<td>Setting assessments according to learner’s location. Setting assessments according to learner’s physiological state</td>
<td>GPS, EEG, Heart-rate monitors, NFC, RFID, Software Sensors</td>
</tr>
<tr>
<td>Evaluative skills</td>
<td>4</td>
<td>Evaluating answers of learners</td>
<td>GPS, NFC, RFID, Software Sensors</td>
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<tr>
<td>Sharing learning expectations</td>
<td>0</td>
<td></td>
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</tr>
<tr>
<td>Self-Assessment</td>
<td>6</td>
<td>Presenting an overview of the learner’s performance</td>
<td>Accelerometers, GPS, Software sensors</td>
</tr>
</tbody>
</table>
RESEARCH AND DESIGN CHALLENGE:

HOW TO DESIGN SEAMLESS LEARNING SUPPORT IN TEL SPACES?

- 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
HOW TO CREATE LINKS BETWEEN DIGITAL AND PHYSICAL

#1 LINKING THE WORLDS
audio augmented spaces ...
objects as controllers of ambient displays …
LANGUAGE LEARNING

- [http://www.elena-learning.eu](http://www.elena-learning.eu)
Feedback Cube

A tangible interactive ambient display to support learning scenarios
Time will tell: The role of mobile learning analytics in self-regulated learning

Bernardo Tabuenca a,*, Marco Kalz a, Hendrik Drachsler b, Marcus Specht c

mobile LA trackers ...
#2 LINKING TO HUMAN LEARNING
#2A AWARENESS
measuring power consumption on campus with standard facility management, plus sensors on workplaces and public devices, personal registration of power consuming activities.
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
#2B REFLECTION IN AND ABOUT ACTION
LINKING ACTIVITIES IN CONTEXT TO ...

REFLECTION ABOUT ACTION

Figure 7: The teacher invites the student to the tabletop
WHAT MAKES IT PERSONAL IS ...

FEEDBACK ...

context indicators ...
reflection amplifiers ...
Personal Context Notifications

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.
Presentation Trainer
#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, ...

• #4 think careful about methodology and experimental designs dependent on your research questions ...
THANK YOU!

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