Research Project

Mobile Learning in work-based contexts
Agenda

Mobile Learning in work-place contexts

1. Research area of the FernUniversität in Hagen
2. Cooperation partners
3. Mobile Learning
4. Research design and methodology
5. First results
6. Didactical implications
Duties and responsibilities

• Scientific Monitoring

• Lead Management
  ➢ Conceptual design
  ➢ Development and expert advice of didactical scenarios

• Evaluation of different application scenarios

• Documentation of the project
Investigation topics

• Which didactical scenarios are appropriate for mobile learning?

• What kind of topics fit to operating processes?

• How do mobile learning applications have to be created for specific groups?

• What are the benefits and values of mobile learning?

• Which potentials and conditions apply to mobile learning in work-based contexts?
Cooperation partners

DAIMLER
implementation

development
conception, scientific monitoring, evaluation

FernUniversität in Hagen
## Target groups

<table>
<thead>
<tr>
<th>Company</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Daimler</strong></td>
<td>Technician gather up information directly at the working place.</td>
</tr>
<tr>
<td><strong>IAG</strong></td>
<td>Truck drivers use mobile devices (e.g. netbook; tablet pc etc.) in their break to learn more about labour protection.</td>
</tr>
<tr>
<td><strong>Handylearn Projects</strong></td>
<td>Apprentices as electronic technicians use a central learning platform at school, company and on the job to support a process oriented working style.</td>
</tr>
<tr>
<td><strong>Help-master.de</strong></td>
<td>Bank assistants learn with smartphones and multimedia programs in order to improve their English and learn about EU-guidelines.</td>
</tr>
</tbody>
</table>
Characteristics of Mobile Learning

- Learning processes with mobile devices
- Instantaneous, unlimited availability and access of know-how
- Possibility of professional training without constraints in terms of time and space
- Situational and contextual learning

MOTTO: „always, here and now!“

→ wherever and whenever you want
Stage of deployment 1:
- Programming the software
  - BETA-VERSION

Stage of evaluation 1:
- Focus: technology, systems engineering, didactics

Target group analysis:
- Analysis of needs and context

Stage of conception 1:
- Development of the didactical design

Final Report:
- Concluding evaluation
- Guidelines and recommendations

Planning concept

Stage of conception 2:
- Adjustment of the didactical design

Stage of deployment 2:
- Re-programming the software
  - FINAL-RELEASE

Stage of evaluation 2:
- Focus: quality, learning progress and outcome

Under operating conditions 1

Under operating conditions 2

Outcome

Implementation

Start of the project

Research design and methodology
Research design and methodology

Status Quo

• Target group analysis → 2 surveys are done
• State 1 of conception and deployment

➢ Truck Drivers (N=27)

➢ Apprentices as electronic technician (N=41)
Investigation topics of the target group analysis:

- Sozio-demographic characteristics
- Media Use
- Media Literacy
- Learning habits
- Learning content
- Didactical implementation
First results: Media Use

Frequency of different media use

(the categories "very often" and "often" are summed up; n=68)

<table>
<thead>
<tr>
<th>Media Type</th>
<th>Truck Driver</th>
<th>Apprentices as electronic technician</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile</td>
<td>82.9%</td>
<td>100%</td>
</tr>
<tr>
<td>Portable DVD-Player</td>
<td>51.8%</td>
<td>87.8%</td>
</tr>
<tr>
<td>Notebook/Laptop</td>
<td>30%</td>
<td>37%</td>
</tr>
<tr>
<td>PC</td>
<td>22.2%</td>
<td>14.8%</td>
</tr>
<tr>
<td>Portable Video-Player</td>
<td>34.1%</td>
<td>14.8%</td>
</tr>
<tr>
<td>Portable MP3-Player</td>
<td>14.8%</td>
<td>14.8%</td>
</tr>
<tr>
<td>Portable game console</td>
<td>9.8%</td>
<td>9.8%</td>
</tr>
<tr>
<td>Smartphone/PDA</td>
<td>9.8%</td>
<td>9.8%</td>
</tr>
<tr>
<td>Netbook/Mini-Notebook</td>
<td>7.4%</td>
<td>7.4%</td>
</tr>
<tr>
<td>E-Book-Reader</td>
<td>0%</td>
<td>2.4%</td>
</tr>
</tbody>
</table>

percentagewise
First results: Experience in eLearning

- both groups have almost no experience with eLearning
First results: Learning strategies & needs

Learning strategies and needs

(the categories "I fully agree" and "I rather agree" are summed up; n=68)

- Exploring
  - Truck Driver: 88.9%
  - Apprentices as electronic technician: 88.9%

- Flexibility of time and space
  - Truck Driver: 85.2%
  - Apprentices as electronic technician: 85.2%

- Game-based Learning
  - Truck Driver: 74.1%
  - Apprentices as electronic technician: 74.1%

- Learning in small groups
  - Truck Driver: 63.0%
  - Apprentices as electronic technician: 63.0%

- Learning with the internet
  - Truck Driver: 90.2%
  - Apprentices as electronic technician: 90.2%

- Paper and pencils are essential
  - Truck Driver: 59.3%
  - Apprentices as electronic technician: 59.3%

- Prefer concrete tasks
  - Truck Driver: 92.6%
  - Apprentices as electronic technician: 92.6%

- Self-determined point in time
  - Truck Driver: 100.0%
  - Apprentices as electronic technician: 100.0%

- Taking notes
  - Truck Driver: 74.1%
  - Apprentices as electronic technician: 74.1%
First results: Learning problems

In case I have learning problems...

(the categories "I fully agree" and "I rather agree" are summed up; n=68)

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Truck Driver</th>
<th>Apprentices as electronic technician</th>
</tr>
</thead>
<tbody>
<tr>
<td>I ask my colleagues for help</td>
<td>88.9%</td>
<td>78%</td>
</tr>
<tr>
<td>I solve them myself</td>
<td>74.1%</td>
<td>73.2%</td>
</tr>
<tr>
<td>I ask the training staff</td>
<td>51.9%</td>
<td>24.4%</td>
</tr>
</tbody>
</table>
I learn best...

("I fully agree"; n=68)
Didactical implications

for Mobile Learning in work-based contexts

should have the focus on

→ the specific generation and occupational group
→ learning by concrete problems
→ situation oriented learning
→ self directed learning and learning by doing
→ no constraints in terms of time and space
→ taking notes, operating practically and learning by case studies
→ participation on practical know-how of colleagues

easy, clear, instantaneous, operational, short learning units
Thank you for your attention

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