G89 - E-learning to M-learning, an investigation into the potential for content conversion

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E-learning to M-learning, an investigation into the potential for content conversion -
Introduction

- Initial concept for the project was the development of an idea to support an MSc Thesis
- Agreement of context with Mobilearn WP3 (Terry Keefe)
- Successful because of the support from Ufi, Mobilearn and University supervisor, Stylianos Hatzipagnos, @ Middlesex University
E-learning to M-learning, an investigation into the potential for content conversion - Introduction

- Literature review
- Identification of the research question
- Substantive research and planning
- Results
- Discussion and Conclusion
E-learning to M-learning, an investigation into the potential for content conversion – Literature Review

- Learning objects – what are they?
- Learning object research and their adoption in industry
- Standardisation
- Use of learning objects for mobile learning
- Definitions of learning objects – choosing a definition to use for this research
E-learning to M-learning, an investigation into the potential for content conversion – Definition of a learning object

“No one seems to know what a learning object is in the first place one of the absurd definitions I heard was, 'as small as a drop, as wide as the ocean.' In other words, if everything is a learning object, then nothing is a learning object.” (Welsch 2002)

“Discrete elements of learning content that meet a defined learning objective, and are independently assessable” Rehak and Mason (2003)

“… smallest blocks out of which learning materials are built and may take the form of text, graphics, video, stills, diagrams or audio” Brown and Hoyle (2003)

“Discrete elements of learning content that meet a defined learning objective, and are possibly independently assessable, which may take the form of text, graphics, video, stills, animations, diagrams or audio. “ Rodin (2004)
E-learning to M-learning, an investigation into the potential for content conversion – Substantive research and planning

- Research Question – *in migrating existing e-learning courseware to mobile technologies can learning objects help?*
- Device and tools used to support the research
- Content selection and review
- Planning the experiments – a seven stage process
E-learning to M-learning, an investigation into the potential for content conversion – Seven stage process for content conversion

- Stage One: Load content into e-learning environment
- Stage Two: Evaluate the E-learning materials and attempt to divide into objects
- Stage Three: Apply and Evaluate the Mobilearn Matrices
- Stage Four: Evaluate and Review the code, course design and file structures
- Stage Five: Evaluate the transfer of the content to the mobile device.
- Stage Six: Evaluate the functionality of the content on the mobile device and apply the test questions
- Stage Seven: Review previous stages and record any conclusions or final observations
### Annex 4 – Learning Object Matrix

<table>
<thead>
<tr>
<th>CONTENT</th>
<th>Reusable</th>
<th>Self-contained</th>
<th>Digital</th>
<th>With metadata</th>
<th>Interacts with other objects</th>
<th>Encapsulates other objects</th>
</tr>
</thead>
<tbody>
<tr>
<td>EAD Taster programme</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>---</td>
<td>Yes</td>
</tr>
<tr>
<td>Literacy - literacy case studies</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>---</td>
<td>No</td>
</tr>
<tr>
<td>From Word on the Street</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>---</td>
<td>No</td>
</tr>
<tr>
<td>ECDL modules</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>---</td>
<td>Yes</td>
</tr>
<tr>
<td>Getting a Job</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>---</td>
<td>Yes</td>
</tr>
<tr>
<td>Going up</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>---</td>
<td>Yes</td>
</tr>
<tr>
<td>The English Game</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>---</td>
<td>No</td>
</tr>
<tr>
<td>Surfdirect</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>---</td>
<td>Yes</td>
</tr>
<tr>
<td>Skills City</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>---</td>
<td>Yes</td>
</tr>
</tbody>
</table>

A difficulty with this matrix is that there is no column to detail if the object has any educational value. I have also evaluated video clips that are objects but in isolation do not have any educational value.

Word on the street is a series of video clips that should be combined with...
E-learning to M-learning, an investigation into the potential for content conversion – Results

- Results recorded for each stage of the seven stage process
- All content was evaluated
- Results disappointing as difficulties were experienced with most of the content
- The learning object matrix proved useful in separating the content into objects
E-learning to M-learning, an investigation into the potential for content conversion - Conclusions

The main research

- Only re-engineered content functioned on the Ipaq
- Seven stages reduced to five
- Hardware too specific and therefore software was not necessarily interoperable even when using plug-ins
- The context of the learning is very important e.g. Microsoft Word on the PC and pocket word on the Ipaq
- Blended learning a potential solution using the mobile device as an additional support tool, or using a small chunk of a course in a mobile situation
Learning Objects – a possible solution?
- Recall issue of defining a learning object
- All current definitions attempt to identify a single definition of a learning object
- Research identified particular ‘chunks’ of content that could be considered as learning object using selected definition
- LEGO bricks come in different types, shapes and sizes – why can’t learning objects?
- A learning object is a software object that can be used to support learning
E-learning to M-learning, an investigation into the potential for content conversion – Conclusions (2) Continued

– Different view of a learning object
– Model facilitated using metadata and XML technology
– Lends itself to a modelling language for learning objects, EML (Sloep 2003)
– A potential for further research
E-learning to M-learning, an investigation into the potential for content conversion – Final Thoughts

- Functional m-learning products currently are not developed and used widely
- An integrated approach to e-learning
- Inclusion of use on mobile devices at the specification stage of content development
- True interoperability irrespective of device needs to make allowances for the usability of different devices in order to manage expectation
E-learning to M-learning, an investigation into the potential for content conversion – References


Rodin L (2004) E-learning’s little brother: an investigation into current technologies for m-learning, their availability and content design considerations for mobile devices, MSc Thesis Middlesex University, UK.


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Questions?
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