Meeting the challenge: producing m-learning materials for young adults with numeracy and literacy needs.

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Abstract

M-learning is a European funded project investigating Mobile Communications Technologies for Young Adult Learning and Skills Development. CTAD have produced a range of content in collaboration with the project partners. The content is delivered on mobile phones and Pocket PCs and includes materials about issues around moving into a flat and football refereeing.

This paper considers a range of the learning resources and technologies that are being developed for piloting with 60 young people in June and July.

A presentation at the European Workshop on Mobile and Contextual Learning will include demonstrations of some of the prototype content that has been developed.

1. The Project

m-Learning is a 3 year pan-European collaborative research and development programme supported by the European Commission under the Learning Citizen strand of their Information Society Technologies (IST) initiative. The Learning Citizen initiative aims to facilitate and enhance lifelong learning for all members of society.

m-Learning addresses 3 problems relating to many young adults in the EU:

?? *Poor literacy/numeracy - see e.g. Improving Literacy and Numeracy: A Fresh Start (UK DfEE 1999) and Literacy in the Information Age (Statistics Canada & OECD 1997)*

?? *Non-participation in conventional education - see e.g. Learning Works (UK DfEE 1999)*

?? *Lack of access creating ICT "haves"/"have nots" resulting in inequality of opportunity -see e.g. "Closing the Digital Divide: ICT in Deprived Areas" (UK government 2000).*

The m-learning project is developing prototype products and innovative approaches to delivering learning experiences through the medium of hand held information and communications technology (ICT) devices e.g. mobile phones and palmtop or pocket computers. The prototype products and services developed are being designed to assist in the development and achievement of life long learning objectives. The primary target audience is young adults who are not currently engaged in education or training including those who are unemployed or homeless. And have literacy or numeracy development needs.

The m-learning consortium is a partnership of organizations (LSDA, CTAD and Ultralab from the UK, Lecando from Sweden and CRMPA from Italy) combining skills in pedagogy and technology. Research activities, and user trials of products developed within the project, will be carried out working in partnership with education and training providers and organisations that reach out to disadvantaged young people.

The technologies being explored within the project range from leading edge (location-aware devices, hand-held browsers, WAP, advanced voice technology) to those in widespread use, but normally outside education (SMS on standard mobile phones).

The focus of the m-learning project is on those young adults (16 – 24 years old) in Europe who are most at risk of social exclusion. They are not involved in education or training and have not previously succeeded within the education system. They may not be able to read and write adequately and have problems with simple calculations except in familiar contexts.

2. Initial Prototypes

CTAD is developing initial sample content to provide modules of learning via portable devices. These will be

piloted with groups of young people during June. The pilots will be evaluated and the outcomes will inform the developments in the second, two-year phase, when more extensive pilots and substantial products are planned.

The technologies are developing fast and it is not possible to know which technologies will emerge as the most popular by the end of the project in 2004. Therefore, m-learning is initially developing materials for a variety of devices, Applying open specifications will maximise interoperability across products and within environments. In particular some of the ADL SCORM, IEEE LTSC, and IMS specifications are under consideration. In the longer term, it is expected that learner preference and performance information will be integrated into delivery mechanisms.

It is expected that the learning episodes will be short. For the prototype phase, a typical piece of aggregated m-learning content will have a maximum typical learning time of 20 minutes. The size of a resource will clearly be limited partly by the bandwidth of connection and by the richness of the media, but an assembly is likely to have a maximum size of 2.5Mb. Assemblies will be broken down into modules that can provide an effective piece of learning in a just few minutes or less. The learner should be able to seamlessly stop and restart.

CTAD will build on its relationship with several initiatives and community based centres that are supporting young people. This will have the advantage of ensuring that the learning is contextualized and blended into existing, real-life learning experiences.

Some of the initial content will be integrated into specific projects that the centres have already begun and where materials are already being used. Other content will be created around themes that initial research has shown are popular with the target audience.

3. The Themes

In consultation with young people and with the staff at centres based in the community, CTAD has selected the following themes in which to develop some initial content. The initial resources may be fragmented, but should integrate into other meaningful learning experiences. If justified by the pilots, these will be developed into more substantial products.

3.1. Urban Survival

A problem many young people face is taking the step of setting up their own home and becoming more independent. Issues include dealing with legal complexities of tenancy agreements, managing finances and cost effective decorating a new room. Some units will help deal with support for “on-the-street” situations. Modules will support both literacy and numeracy in real life situations.

3.2. Football Refereeing

Refereeing is popular with some of the young people. m-Learning will be used to provide sample resources to support, or help people prepare for, a short course leading to a qualification. This will include the use of voice and text to deliver information about the rules and video clips to support examples of decision-making. The materials will aim to remove literacy and numeracy barriers that may make it difficult to complete the refereeing course.

4. Technology

A variety of technologies will be used to deliver the materials. These will fit into the following broad categories, though there will also be various hybrid systems or content.

1. Online devices, such as the Pocket PC, that can provide interactions with a server or online managed learning system. Even though these devices are capable of delivering multimedia, the bandwidth is usually relatively low so the file transfers need to be small
2. Off line devices, such as Palm, Pocket PC or possibly Game Boys, that have to load content from a computer or using a form of storage media such as a cartridge. These can include interactive multimedia resources.
3. Audio, with a simple interface, such as an MP3 player or a mobile phone. There are already many commercial support services that a user can access via a telephone, using key presses or voice commands for multiple-choice navigation. Some of the learning content will exploit these kinds of technologies and voice XML.
4. Text only messaging is very popular amongst young people. When combined with server driven content, with SMS broadcast and the development of communities of learners this, is a potentially powerful means of delivery where the barriers to access are low.

Not all the learning will be delivered to individuals. There are several events planned that will use m-learning to deliver collaborative spaces and activities.

5. Accessibility

CTAD is aware of many of the issues of accessibility surrounding existing and emerging m-learning devices and content. In the second phase of the project it is anticipated that there will be materials specifically written for parts of the target audience that have specific accessibility problems. This may include using text and voice technologies to enable visually and hearing impaired young people to take part in learning communities and to access personalized content.

6. Summary

As part of the m-learning project, CTAD will be producing a small range of targeted learning resources that can be delivered using different mobile technologies.