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Paper

Title of paper

The Australian Mobile Learning Network: Australian Innovations

Category

Technical Showcases

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Keywords

Australian Mobile Learning Network

Abstract

This presentation will provide a unique and interactive snapshot of current mLearning initiatives within the education and training sector of Australia.

Innovations in mobile learning include;

Mobile Learning: Hand Held Innovations in Flexible Learning , a National New Practices in Flexible Learning initiative, funded by the Australian Flexible Learning Framework and managed by the Institute of TAFE Tasmania.

The project examined the practical and cost effective application of handheld mobile technology (PDA) for the delivery of flexible learning in the workplace. Specialist applications were developed through a joint collaboration between the learning institution, industry, staff and the learners as well as key stakeholders from many industry sectors.

QTI m-Player: question and testing interoperability (QTI) player for mobile devices
Selected businesses and registered training organisations (RTOs) around Australia will be the first in the world to use mobile learning in a secure environment.

It will allow the vocational education and training (VET) system to create assessing instruments for teachers and trainers to test students anywhere and anytime using mobile devices.

TAFENSW – New England Institute, another National New Practices in Flexible Learning initiative, which explored three initiatives for Handhelds:

- self-induction offsite by visitors - safety requirements of building sites, via dial-up to a website
- training and assessment in calibration skills for chemical mixing using interaction with a website
- GPS for personal interpretation of points of interest at sites such as zoos and botanical gardens.

Access and General Education Centre, TAFE NSW are in research trials engaging clients with m-learning initiatives including an interactive Mobile Film Festival, emailSMS broadcast activities as well as Mo-blogging and Video-blogging for workplace assessment, general education and Indigenous culture and story telling.

Swan TAFE, Western Australia conducted research as a New Practices in Flexible Learning initiative, in conjunction with the Australian Flexible Learning Framework (AFLF) in 2004 in the 'TxtMe: Supporting Disengaged Youth Using Mobile Technologies' project explored the dimensions of SMS messaging in the retention of disengaged youth via a collaborative, networked learning environment.

TAFENSW Access and General Education Curriculum Centre: EngageMe – Personal and Community Identity Online Project

TAFE NSW Access General Education Curriculum Centre, in partnership with VIBEWIRE, and OPTUS are engaging young learners in e-learning by using the converged technologies of mlearning and online learning to create learner generated content in an on-line community. Learners generate content by moblogging text and images related to specific learning activities to an on-line site hosted by VIBEWIRE, an online youth media platform. OPTUS (an Australian Telco) provide subsidised rates and equipment for the project.

Young learners are being asked to investigate personal and community identity through images and text, by using the camera and text feature of the mobile phone. Each SMS text is attached to the

images on the phone, the learners then email the images and text from their phones to specific and community moblogging pages on the internet. Groups of learners are then required to review and respond to each others individual and community representations by commenting on-line.

This project has utilized a number of features to engage learners:
- the opportunity for the learner 'voice' to be heard through the use of learner generated content and responses
- social and collaborative learning
- using technologies that the learner group are familiar with and interested in using.

The participants

The participants include 10 groups of 10 learners enrolled in the Certificate 1 in Foundation and Vocational Education (FAVE) and the Certificate 2 in General and Vocational Education (CGVE) . The groups of learners include indigenous groups, and groups from rural and remote areas with one group of learners having been drawn from each of the 10 participating TAFE (Technical and Further Education) NSW Institutes.

The learners in this VET area have some of the following characteristics:
- have come into contact with the juvenile justice system, including youth drug courts
- are homeless
- are long-term unemployed
- have left school early
- are economically disadvantaged
- are from an equity target group (i.e young Aboriginal and Torres Strait Islander people; young people from non-English speaking backgrounds; young women and young people with disabilities, including young people with mental health issues such as depression)
- have significant and/or numeracy difficulties
- are living in a region with a high concentration of economic and social disadvantage
- are living in rural areas
- are geographically or socially isolated.

The project was designed to meet the specific learning needs of the courses that the learners are enrolled in by supporting the achievement of the module '*Community Identity*', a module common to both courses (FAVE and CGVE).

The module purpose of Community Identity states:

"*The purpose of this module is for participants to develop an understanding of their place in their community and their rights and responsibilities as active citizens.*

On successful completion of this module, participants will be able to: investigate identity at personal and community levels"

By undertaking the project the participants have engaged in learning the concepts of personal as well as community identity and improving literacy skills by practical application; by considering how best to present concepts through the use of learner generated images and the related text that describes these images.

The use of mobile and on-line technology has been a major feature of engagement for the learners as they readily embrace these tools in their everyday life. The project will continue to contribute to the development of foundation skills for learners to successfully continue to further education, or work.

The VIBEWIRE site http://vibewire.net , is an online youth media platform that is hosting the moblog, it provides an additional benefit to young learners by giving them access to resources and a sustainable on-line youth community. VIBEWIRE is a not for profit community organization that have provided an online community and events for young people to express themselves through art, politics, film, blogging for the past 10 years

The project supports e-learning and other needs of the target learners through

- Recognising the nature of the community engaged in by young people today, which includes geographically dispersed friendships developed and continued through online technology

- Employing 'connected learning' using familiar and popular technology

- Allowing 'student voice' to be heard and displayed

- Supporting access to technology that may otherwise not be available

- Engaging learners by relating content to their own lives and constructs

Further information can be obtained through the EngageMe project space at:
http://engageme.wikispaces.org/

TAFENSW – New England Institute

A National New Practices in Flexible Learning initiative, which explored three initiatives for Handhelds:

- self-induction offsite by visitors - safety requirements of building sites, via dial-up to a website
- training and assessment in calibration skills for chemical mixing using interaction with a website
- GPS for personal interpretation of points of interest at sites such as zoos and botanical gardens.

1. Trial of Handhelds for Building Site Induction

The trial was held in December 2004. The technology developed for the Handhelds allowed building site managers to construct building site inductions according to prevailing occupational health and safety regulations by uploading information from the Handhelds, including photographic images, to an induction website. Inductees off-site could induct themselves into a building site by dialing the induction website and working through the induction process on their Handhelds. The inductees presented themselves to the building site office for sign off and approval by the administrator that they had completed induction and were free to move around the site.

Technology and process

Technology
The following technologies were used within this trial:
- O2$^®$ Xda$^®$ II personal digital assistant (PDA) with general packet radio service (GPRS) mobile access (code division multiple access [CDMA] version not available)
- *Snap*, a Windows$^®$-based handheld device photo storage and retrieval application developed by a member of the project team
- Microsoft$^®$ Visual Studio$^®$ 2003 (VB.NET)
- OpenNET CF framework
- Microsoft$^®$ SQL Server$^™$ Enterprise Manager
- CodeKeeper .NET$^™$
- ASP/ASP .NET
- Microsoft$^®$ SQL Server$^™$

Process
An overview of the process is illustrated and described below.

Handheld access

Users login to the site using their personal logon permissions

If a user is not registered then they will fill in their personal details.

A user then selects a site that that would like to be inducted in.

Induction information is then displayed. As many pages as are needed by the site to display relevant OH&S and other safety information.

A final form is displayed allowing the user to agree with the site induction conditions

Administrator access

Administrator access to the self-induction resource enables site managers to modify, update, check and approve the resource data that is uploaded to the handheld device resource. The following screen shot displays some of the features of the self-induction resource that the administrator is responsible for including:

- adding new users, employees and trades
- setting user rights (that is, what the user can and cannot access and/or modify)
- adding new sites
- modification of induction content

Screen shot of administrator access options

Trail outcomes overview

General comments by building-site staff

General comments made by the staff at the trial building-site were that the handheld technology:
- had great potential of allowing site managers to construct their site-inductions 'on-the-fly' through the ability to incorporate new hazards into the site induction resource as these hazards emerged on the building-site
- would save site manager's time through only having to sign-off a site visitor upon the visitor's successful completion of the induction, rather than having to personally conduct the induction process themselves during a face-to-face meeting with the site visitor.

Clearly, the building-site managers require a system in which they can have confidence that visitors to the building-site have been thoroughly inducted and that the induction process conforms to mandatory requirements and regulations.

Equally, the technology has demonstrated the potential to save subcontractors (and other visitors to the site) considerable onsite time by allowing them to download and undertake the induction themselves, at their convenience, and prior to arriving at the site. In such instances, upon arrival at the site office, the site manager would simply locate the site visitor's name on the system database, see that they had successfully completed the induction and then sign them off as having been inducted.

Organisational environment

During the trial, several subcontractors visiting the building site were reluctant to take the handhelds with them and to become more familiar with their use due to concerns related to the potential risk of loss or damage of the borrowed hardware.

An implication of this concern for the security of borrowed hardware is the need for the site-induction system to be reconfigured in order that it is able to run on all types of mobile phone-enabled handheld devices, or enhanced mobiles, that may already be owned by a site visitor.

An alternative option that may be considered, in the case of a large organisation such as a large building company, is to issue relevant staff and frequent visitors to their building-sites with a company-specific handheld that they could use during site inductions.

Suggestions for improvement

The following suggestions for improvement of the trialed resource have arisen in response to observations during, and outcomes of, the handheld device site-induction trial.

- The trial site was unfortunately situated within a general packet radio service (GPRS) blackspot, which made dial-up at the building-site difficult. Consequently the handhelds had to be taken off-site in order to dial-up to the website when an upload or download of information was needed. In this situation, availability of a handheld linked to CDMA mobile service provision would have been a more versatile option.
- It is suggested that a self-assessment activity be incorporated within the resource content following each key section of the induction. For example, after providing content that discusses the relevant emergency response plan for the building-site, insert self-assessment questions such as, 'Where is the emergency exit?' and, 'Where are the fire extinguishers located?'. These questions/activities can require the inductee to check-a-box for a multiple choice or true/false answer etcetera. A further suggestion is that the user not be able to proceed with the next section of the induction until the inductee provides the correct answers to a preceding section.
- It is important to consider presentation of induction information in auditory as well visual text forms so as to take account of any literacy issues that the visitor may have. Through inclusion of such, the site visitor would have the option to listen to and view the site induction information, successfully answer the self-assessment questions (perhaps using voice recognition) and proceed through the induction.
- Consideration may also need to be given to the complexity of the language used to present the induction information (either verbally or in text form) in order to take into account the needs of any persons for whom English is not their fluent language.
- As a way of potentially increasing the integrity of the self-induction system, it is suggested that a protocol be established whereby each self-inductee is required to take a photo of themselves, via the handheld, as the first step in the induction process. This photo, together with their induction information, could then be uploaded to the website server. Then, when the visitor presents to the building-site and claims having undertaken the self-induction, the site manager can verify their identity (by examining their photo) in addition to verifying that they have successfully undertaken the induction.

2. Trial of Handhelds for Farm Chemical Calibration Skills

This trial, to be completed in October 2005, involves agricultural industry learners using mobile technology in the field, to develop skills in calibration of equipment and mixing of agricultural chemicals.

Achieving an accurate mix of chemicals is vital to ensure that no harm is done to crops and livestock. Some students and trainees have difficulty with calibration skills because of lower level literacy and numeracy skills.

The process involves students downloading training materials and assessments by dial-up or synced 'cradle' connection to an internet-enabled PC and in turn to the project website. Students are provided with fixed scenarios which have one correct answer and they can then practice working through the calibration equation as many times as they like. They then undertake a specific calibration exercise that is relevant to their context and upload the answer to the website for evaluation by the assessor.

The project aims to 'personalise' the learning experience for students by:
- Providing an engaging learning program to suit the needs of the individual student wherever they are located
- Confirming individual mastery of a task considered important by industry
- Address individual student characteristics, for example lower literacy and numeracy levels by providing clear and accessible information and assessment where possible in audio-visual format to complement text-based information.

- Ensuring individuals receive immediate feedback on self-assessment activities related to a range of scenarios and at least 24-hour response time for summative assessment items.

Technology and process

Technology
The PDA software is developed using Microsoft Visual C# using .NET the Compact Framework.

Hardware and software:
- O2® Xda® II personal digital assistant (PDA) with general packet radio service (GPRS) mobile access (code division multiple access [CDMA] version not available)
- FTP function to transfer data/files to an external server and from the server to the PDA. In this context we are transferring XML and image files to the main server from the PDA and download XML files, Images, PDF and Word Documents to the PDA.
- Camera Capture Function to use the camera capabilities of the PDA.
- SD Cards to store all the data created by the students when working on the PDA.
- XML data used to transfer information to and from the PDA.

The Web Site uses an ftp account to allow secure transfer of data from the PDA to the server. A small database is then used to store all the relevant information created by trainers and students. The web site is developed using ASP and SQL technology to allow dynamic data to be displayed and created once the software transfers the data to the server.

The Process
The process begins on the web site.

A new Activity or assessment is created.

Assessment Name: [   ]

[Insert Assessment]

Questions are then added to the Activity.

New Question

Title: [   ]

Type: [Answer ▼]

Question: [   ]

Type
Answer: Use this to allow a student to type in a text box answer that you will mark.

Correct Answer: Use this type to allow the PDA to tell the student if they typed in the correct answer. The correct answer must be type into the Correct Value box before saving this item.

Calculation: This type allows you to use the ID numbers of some questions and check if the student answer equals the calculation of these items. You must type in the calculation into the Calculation box before saving this question. NB. ID numbered questions must be before this question and the answers must be numbers with no addditional text charachters. eg: A12 + A14 * A16

Value: [   ]

Calc: [   ]

Position: [   ]

Help/Additional Information: [   ]

True False: True False type allows you to as a true false question and the PDA will let them know if the answer is correct. You must type the correct answer (True or False) into the Correct Answer Box before saving this item.

Help Pop: ☐

[Insert Record]

- A question or task can have an absolute answer. i.e. 26 (The user must type in 26 to get the answer correct)
- Help or additional information can be added to the help box to assist students with difficult questions.

Once all the information is entered into the web site. The tasks are compiled ready for the PDA to download.

The PDA is then inserted into the cradle on a PC that has Internet access. Or connection is made via dial-up to the website.

The user then selects Calibrate TAFE from the start menu on the PDA.

The PDA will check for internet access and then download any new assessments from online. At this time the PDA will also download any new library items (Word Documents, PDF or images) to add to the library.

The PDA will then ask for a student number and name. This creates an XML file on the SD card on the PDA for storage of individual students data.
More than one person can use the same PDA using different student numbers.
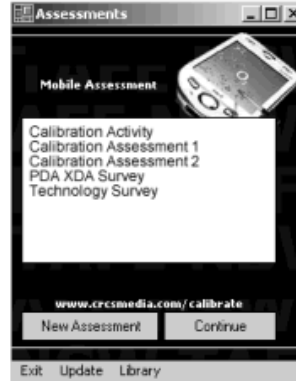
An XML file of all the assessment questions is then loaded to allow the user to select the activity or assessment that they would like to complete.

The user will then be asked a list of questions or tasks to complete. They enter their answers in the Answer area at the top. (This allows room for the PDA keyboard to be opened.) They then continue through each task.

The options to take a photo using the PDA or view the library are given in the bottom menu bar.

Any photos taken will be transferred up to the server once complete.

If a user turns off the device or the battery goes flat, the data will still be stored on the PDA for next time.

Once the PDA is placed back in the cradle or has dial-up online access a user can start the Calibrate TAFE program and all the user's data and images will be transferred to the server -using FTP (file transfer protocol) - and will be available for the trainer to check.

The data on the PDA is then removed ready for more users.

Example boomspray scenario

Area to be sprayed	53 ha		
Chemical	Paragon		
Weed	Cape weed (Arctotheca calendula), – 4 leaf growth stage		
Crop	Oats (Cooba Variety) – 5 leaf growth stage		
Tank size of boomspray	600 litres		
Nozzle type/size	Hardi F-110, size 01-orange		
Pressure	3 bar		
Nozzle outputs (mls/minute)	1	400	7	393
	2	415	8	411
	3	412	9	381
	4	429	10	428
	5	408	11	417
	6	427	12	433
Speed calculation information	Distance		100 meters
	Time		57 secs

3. Exploration of the use of GPS and Handhelds. This initiative provides a walk-through of a prototype process using Handhelds and GPS for instructional or interpretive learning resources in the field, for example in a botanical garden, heritage site or national park. The user positions themselves near a point of interest, and the Handheld provides textual, graphical and audio-visual information and activities related to the point of interest. More information and current updates on this initiative are available at the Australian Mobile Learning Practitioners Network:
http://www.groups.edna.edu.au/course/view.php?id=222

The Institute of TAFE Tasmania
Mobile Learning: Hand Held Innovations in Flexible Learning

This project was inspired by the ongoing advances of handheld mobile technology and its potential to provide a valuable addition to the flexibility of training delivery. It has stimulated new thoughts and directions for the way in which learning can be delivered in the workplace.

The project was a National New Practices in Flexible Learning initiative, funded by the Australian Flexible Learning Framework and managed by the Institute of TAFE Tasmania. It has had a strong industry and community focus with an aim to ensure strong collaboration and mutual learning partnerships between industry organisations, community groups and TAFE Tasmania.

A large proportion of TAFE Tasmania students are workplace trained, creating a strong need for flexible approaches to the way job training is delivered. This includes hand-held on-the-job flexible delivery concepts for normally desk-bound activities, including the use of the World Wide Web and electronic assessment systems, these are just a couple of several ideas that has been examined by this project.

The project has had a strong industry and community focus with an aim to ensure strong collaboration and mutual learning partnerships between industry organisations, community groups and TAFE Tasmania.

The project has focused on the following areas:

- **Horticulture and Tourism** through the development and trial of four innovative PDA resources for the Royal Tasmanian Botanical Gardens, which included:

  1. Pete's Vege Patch, an information resource based on the Australian media gardening guru Peter Cundall and his popular vegetable garden, which is based in the Tasmanian Botanical Gardens. A statement from the original project report, Ragus (2004) states that 'Pete's Vegie Patch is one of the most visited sites in the RTBG and there is increasing community interest in establishing and growing vegetables in a similar way. The interest in organic gardening at home is undergoing resurgence, with all classes and talks provided by the RTBG dealing with backyard production, being well patronised. The 'Explore the Gardens' tour of Pete's Vegie Patch is one of the most successful of all the classes in the series.' The resource was produced as an interactive interpretive learning resource for those visiting the gardens it was designed in a manner that would enable it to be used by a wide audience including students and older age visitors.

  Below are examples of pages within the resource, 1.1, Australian gardening guru Peter Cundall introduces the resource, 1.2, provides the main menu
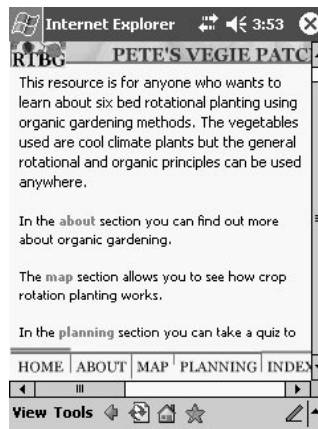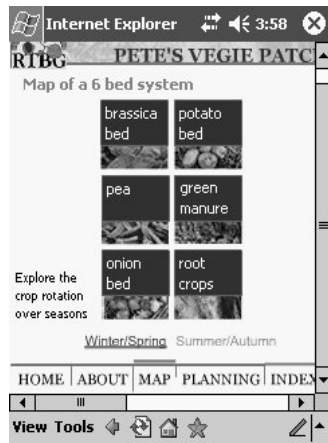
  1.1

  1.2

Image 1.3 details the rotational planting system and 1.4, provides a screenshot of the interactive planning tool.
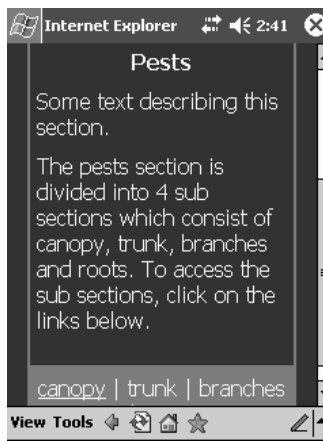
1.3

1.4

2. The Catalogue of Tree Disorders, which provides the user with written and pictorial details on tree disorders found within the Tasmanian Botanical Gardens.
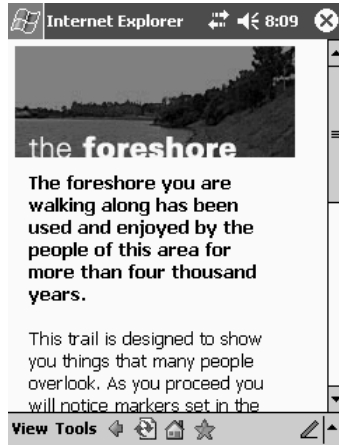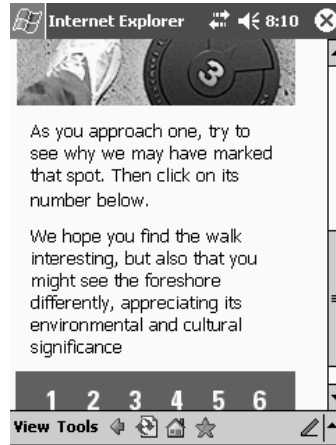
2.1

2.2

3. The Foreshore Walk, an electronic virtual tour guide for use on the Botanical Gardens Indigenous foreshore walk, where areas of the resource are linked to marker points on the trail (image 3.2).
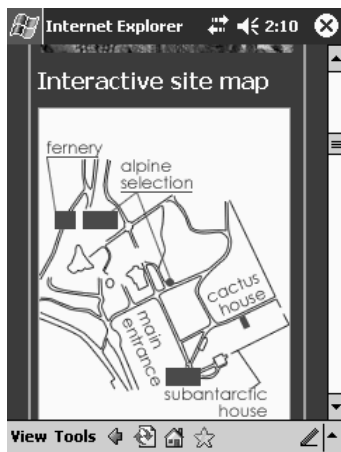
3.1

3.2

T

4. The Plant Adaptation Trial, provides an interactive interpretive resource for the learner as they make their way through a series of plant environments within the grounds of the Tasmanian Botanical Gardens including, rainforest, subantarctic, alpine and desert. The resource contains a hyperlinked map and a formative self-assessment.

4.1

4.2

- **The food and hospitality sector** where trials were conducted as part of the food and hospitality programs run through the Drysdale Institute of TAFE in Hobart. These trials were set up to demonstrate the application of an existing PDA image program known as Conduits® Pocket Album™ that would be used in a unique way to compile a learning resource for the bar and gaming certificate. The learners used the product as a 'just in time' resource in the workplace and could engage with the resource by writing text directly on images (image 1.2) and adding voice files.

1.1

1.2

Type of spirit:
BURBON WHISKEY.
Alcoholic content: 37%
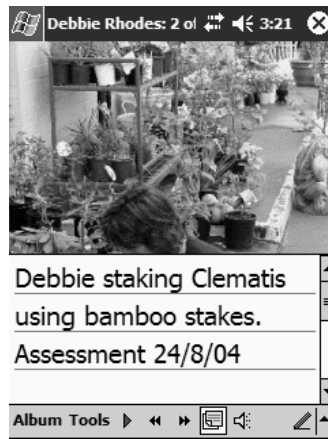
Album Tools ▶ ◀◀ ▶▶ 🔲 ◀:
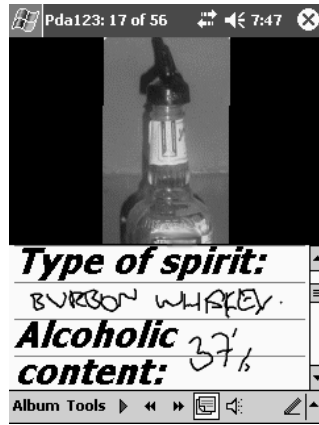
- **Workplace assessment practice** trials were undertaken within the horticulture sector with two specialist assessors. The aim was to use PDAs and a peripheral plug in camera to document assessment activities in the workplace as an evidence capturing exercise.
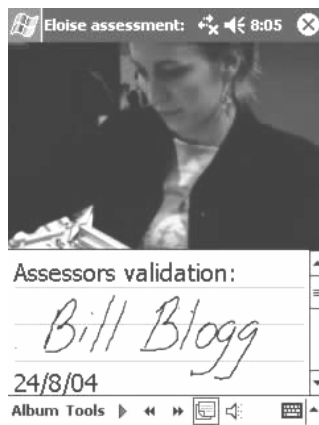
1.1   1.2

Debbie Rhodes: 2 of   3:21

Debbie staking Clematis
using bamboo stakes.
Assessment 24/8/04

Album Tools ▶ ◀◀ ▶▶ 🔲 ◀:

Assessors can validate the images by signing off directly on screen (1.4) or by adding a voice file to the image.

Eloise assessment: 8:03

Eloise assessment: 8:05

Assessors validation:

Bill Blogg
24/8/04

Album Tools ▶ ◀◀ ▶▶ 🔲 ◀:

- **Tree evaluation database**

The evaluation database provided an answer to an ongoing issue of double handling of field data at the Royal Tasmanian Botanical Gardens. The program was produced using embedded visual basic for Pocket PC available as a free down load from Microsoft[®]. The completed program enabled the user in the field to enter tree evaluation data on a mobile device and on return to the office the data could then be actively synced to a Microsoft[®] Access database on a desk top PC. Initial trials in 2004 produced good results with further updates and additional trials to be held later in 2005.
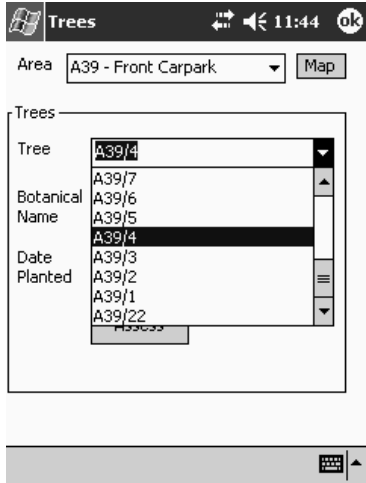
Technology used
Hewlett Packard IPAQ™ 2210 were used primarily due to their dual memory card expansion options and their cost effectiveness. The peripheral devices included a plug in Hewlett Packard Photosmart™ camera.

Additional to these trials the overall project also investigated:

- o Issues of PDA accessibility for disabled persons
- o Use of a PDA for remote mobile connection to weblogs, known as moblogging
- o Evaluating the potential for the adaptation of an existing Institute of TAFE Tasmania student signup and enrolment database for use on a PDA in the field.

Outcomes

Feedback from the trials indicated that most who participated were enthusiastic about using the handheld technology for learning within the workplace. The majority of participants indicated that, if provided with the opportunity, they would like to continue using the PDAs for work and as part of their ongoing learning practice.

Further information, outcomes and case studies from this project:
http://flexiblelearning.net.au/projects/mobilelearning.htm

Project web site:
http://flexiblelearning.net.au/projects/resources/2005/Mobile%20Learning/resource/index.htm

The Institute of TAFE Tasmania QTI m-Player: question and testing interoperability (QTI) player for mobile devices

This project is a 2005 Australian Flexible Learning Framework funded, New Practices project. Its basis is to produce product-generating technology such as the QTI Creator™ to generate a wide variety of assessment tools and the capture of reporting in standards-compliant, extractable files on a mobile device.

This application will radically extend the current workflows and possibilities for VET assessment in Australian workplaces, including enabling assessment to:
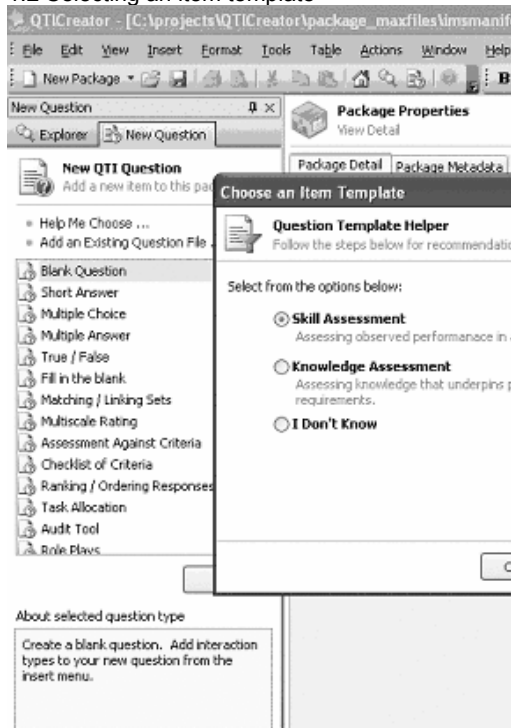
- Be played and viewed in the format it was created in without variation.
- Span knowledge, learning and performance outcomes.
- Be based on older hardcopy or digital files that are converted into QTI.
- Occur over cellular, wireless, satellite or fixed networks.
- 'Reach' into enterprises where the internal networks are secure and thus prevent access by independent learning management and reporting systems.
- Report assessment results through data synchronisation over multiple different, low bandwidth networks, not just through docking devices.
- Occur whereby the assessor creates tools on a desktop or online environment and then can reuse them in any compliant course management, learning management, or learning content management system; or learning object repository.
- Operate within businesses' internal networks where systems are 'protected' and external LMS access is prohibited.
- Be designed and delivered on mobile devices with metadata aligned to IMS, SCORM or related regimes.

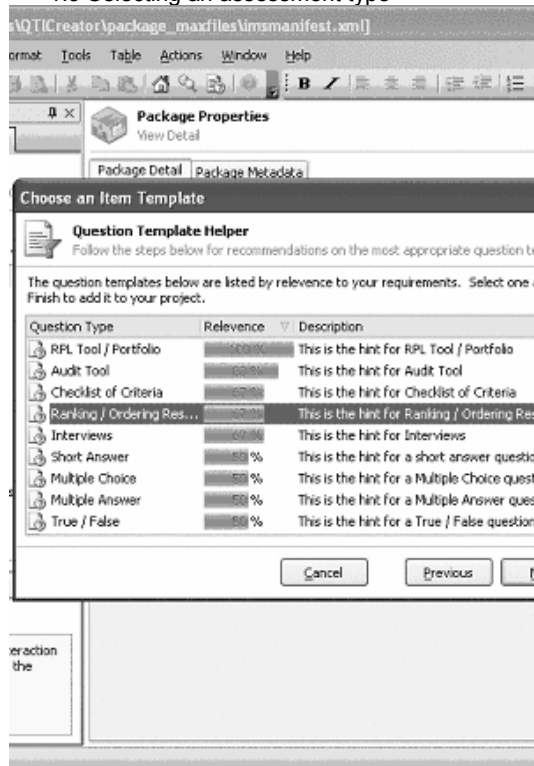More information at: http://www.flexiblelearning.net.au/projects/qti_m-player.html

1.1 QTI Creator
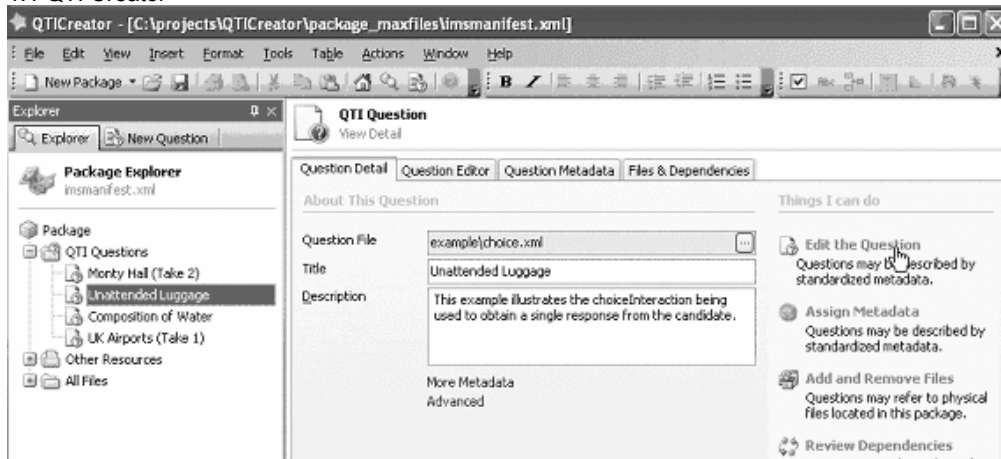
1.2 Selecting an item template　　　　　　　1.3 Selecting an assessment type

References

Attewell, J. & Savill-Smith, C. (2004) Learning With Mobile: Research and Development,

MOBIlearn : Learning and Skills Development Agency.   ISBN 1 85338 833 5

Department of Education and Training (2004) Draft: Youth Advantage Strategy, Government of Western Australia.

EngageMe project space (2005), At http://engageme.wikispaces.org/

Hewlett-Packard[®]. (2004) http://h50025.www5.hp.com/hpcom/au_en/11_26_60.html, 31 August 2005

MOBIlearn (2003) WP 4 – Guidelines For Learning In A Mobile Environment: Version 1.0   Mobilearn: Learning and Skills Development Agency.

Microsoft Visual #C™ (2004). At http://msdn.microsoft.com/vcsharp/

New Practices in Flexible Learning 2004: Txt Me: supporting disengaged youth using mobile technologies (2004). At http://flexiblelearning.net.au/projects/txtme.htm

New Practices in Flexible learning 2005: QTI m-Player: question and testing interoperability (QTI) player for mobile devices (2005). At http://www.flexiblelearning.net.au/projects/qti_m-player.html

O_2 (2004). XDA O_2 ™. At http://www.seeo2.com/

Prensky, M. (2003) But the screen is too small… [online] Available: http://www.marcpransky.com/writing/Prensky%20%20But%20the%20screen%20is%20too%20small.pdf

Ragus, M (2004). Project Report Mobile learning: handheld innovations in flexible learning. At: http://flexiblelearning.net.au/projects/mobilelearning.htm

Rumsey, D. & Associates (2002) Shaping the VET Practitioner For The Future West Australian Department of Training : Government of Western Australia ISBN 0 7307 9130 0
(2005)

The Australian Flexible Learning Framework (2005). At . At http://flexiblelearning.net.au , 31 August 2005

VIBEWIRE (2004). At http://vibewire.net, 25 July 2005

Biography

Alexander Hayes

BA (Education)
BA (Art)
Hons. (Fine Arts)
Certificate IV in Workplace Training & Assessment

Alex Hayes provides consultation services to organizations seeking competitive business solutions which integrate mobile technologies in an educational training context.

Alex draws upon an extensive history of collaboration with government and non government education institutions, telecommunication industry specialists, industry training councils and community based organizations.

Hayes tailors professional development programs to extend upon existing mLearning knowledge in flexible delivery settings, often integrating e-learning discussion forums, workshops, and interactive online events to demonstrate best practice.

Recent and up-coming key note address and mLearning symposium presentations include ;

- Teaching & Technology: mLearning 2005 Symposium - Key Speaker
- DEET Training Forum - Keynote Speaker
- FLAN Conference, West Coast TAFE College WA 2005 - Keynote Speaker
- TRIC Conference, Central West College WA 2005 - Key Speaker
- South West Regional College WA, PD Workshops 2005 - Facilitator
- Killara Youth Support PD Workshops 2004 - Facilitator
- Sixth Annual Best Practice Teaching Forum, Central College WA 2004 - Keynote Speaker
- CSSN Gate Curriculum Advisory Group PD Workshops 2004 - Facilitator
- DEET EVE Pilbarra Regional PD 2004 – Facilitator
- Pilbarra College of TAFE FLAN 2004 – Keynote speaker

Biography

Sam Meredith

BA (University of Queensland)
Grad. Dip. Media (Australian Film Television and Radio School)

B Lit. & Comm. (Murdoch University)
M Ed. Studies (University of Queensland)

Sam has more than 20 years experience in provision of flexible education and training, within both the vocational education & training and university sectors.

Sam was an Australian National Training Authority (ANTA) funded Flexible Learning Leader in 2002 researching systems for sharing and trading of learning resources.

Sam has specialist expertise in:

- application of new technologies to teaching and learning
- project management
- instructional design
- systems for developing, storing, accessing and trading learning resources to enhance re-usability
- facilitation of staff development programs
- action learning
- distance education

Biography

Anne Paterson

M.Ed. Sydney University
B.A Education Macquarie University
Diploma of Teaching, Technical, Sydney College of Advanced Education
Certificate IV Workplace Training and Assessment

Anne Paterson is a workplace trainer and training consultant with over 20 years experience in general / vocational education training and instructional design.

Anne has experience in providing consultancy services, content design, conference and workshop presentations and professional development in using mobile and wireless communication technology for;

- workplace assessment design and implementation
- just in time training and product information for sales staff
- staff induction and orientation programs
- occupational health and safety and quality procedures
- coaching and mentoring programs
- team and community building
- organizational learning
- knowledge harvesting through the use of blogs, mo-blogs and video-blogs
- engagement of young people in learning
- training of remote and geographically dispersed staff

Anne has tertiary qualifications in Training and Development and Workplace Training and Assessment.

Biography

Marcus Ragus

Associate Diploma Science (Horticulture), Northern Sydney Institute of TAFE, Ryde School of Horticulture

Biology / Applied Science, UTS Sydney

Methods of Instruction, Hunter Institute of Technology, Gosford

Teaching & Learning Diploma, Hobart TAFE

Workplace Trainer II, Hobart TAFE

Workplace Assessor Certificate IV, Hobart TAFE

Marcus has been teaching within the VET sector for over twenty years and has been actively involved with technology for learning for ten of those years.
He is committed to the fundamental principles of workplace training and has been actively acknowledged as a leader in the move to implement training packages as part of real-on-the-job learning.
He has been a consultant to organizations and individuals, specialist committees and industry panels relating to learning innovation, product design and technologies to assist learning

Recent mLearning projects include:
Facilitator / Manager National LearnScope Online Special Interest Group 2004

Manager, National New Practices in Learning Project, Mobile Learning Technologies 2004
http://www.flexiblelearning.net.au/projects/mobilelearning.htm

Co-Manager, National New Practices in Learning Project, Mobile Learning QTI player 2005
http://www.flexiblelearning.net.au/projects/qti_m-player.html

Facilitator and Manager for the Networks of the Australian Flexible Learning Community, national M-learning practitioners network project, 2005
http://www.groups.edna.edu.au/course/view.php?id=222

Marcus is a regular speaker, presenter at various learning conferences and symposiums nationally. Current confirmed engagements for 2005 include:
- 2005 Tasmanian Learning and Skills conference,
- Brisbane Adelaide TAFE, July 2005
- AusTAFE Conference 2005, NSW
- FLAN (Flexible Learning and Networking 2005), Western Australia, Perth and Pilbara
- ACPET, Australian Council for Private Education and Training, Adelaide 2005
- ICVET, International Centre for VET Teaching and Learning conference Sydney, 2005
- E-dayz Conference Adelaide 2005
- Botanical Gardens, Australia and New Zealand Congress 2005

Biography
Additional project members

Daniel Dacey

Daniel has over fifteen years of teaching experience in areas ranging from networking to multimedia. He has worked in almost all areas of Information Technology, including network, PC support, systems analysis, document writing, Project Management and software development. Over the last three years Daniel has been involved with many TAFE related projects as a programmer. He has developed CD-ROM, web and PDA based applications for state and national projects.

In the past year, Daniel has returned to industry, where he is leading a small team building cutting edge software and custom hardware for PDAs and tablet PC's, using GPS technology.

Daniel is a Microsoft certified developer and partner.

Chris Richter
www.crcsmedia.com

Chris Richter is the Media Development Manager of Chris Richter Computer Services. Chris has qualifications in Music, Information Technology and Assessment and Workplace Training. Chris has over 6 years experience in developing Online/Web and CD-ROM based training materials. Chris has worked on various projects developing dynamic data driven applications, interactive flash applications and PPC PDA applications specifically tailored to the education sector. Over the past 4 years Chris has provided online learning support to staff and students, staff training in online platforms and media development workshops.