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e-Learning Design for Localisation and Personalisation

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Abstract

The University of Nottingham (UoN) is involved with two UK nationally funded e-learning projects that has involved collaborations with Universities across the UK, China and Malaysia. These multimedia online projects are the V-ResORT project, developing research training materials and the eChina-UK eEducator project, developing tutor training materials for online tutors which has been piloted in both China and Malaysia. Both these projects seek to change teaching and learning practice in Higher Education. To this end, the project resources have been designed so that they can be localised, i.e. adapted to suit local institutional needs, and personalised, i.e. learners are supported in selecting pathways through the materials to match their personal learning needs. These projects have consciously adopted a non reusable learning object approach for both pedagogic and ethical reasons and the paper explores the rationale for this. In addition these projects have involved the development of a range of bespoke tools designed by the UoN such as: an online Workspace tool that supports reflection, peer sharing and the development of a portfolio of work; and an online Learning Activity Analysis Tool (LAAT) to support the development of effective scaffolding for online learners.

Abstrak

University of Nottingham (UoN) sedang terlibat dengan dua projek e-pembelajaran yang dibiayai oleh kerajaan UK yang melibatkan kerjasama dengan universiti di UK, China dan Malaysia. Projek multimedia atas talian ini ialah projek V-ResORT, melibatkan pembangunan bahan latihan tutor atas talian yang telah dirintiskan di China dan Malaysia. Kedua-dua projek ini bertujuan untuk membawa perubahan kepada praktis pengajaran dalam pendidikan tinggi. Hingga kini bahan projek telah direka bentuk supaya ianya dilokalisasikan, yakni diadaptasikan supaya bersesuaian dengan keperluan institusi setempat dan keperibadian seseorang pelajar. Dalam erti kata yang lain, pelajar disokong dengan pemilihan bahan-bahan yang bersesuaian dengan keperluan pembelajaran mereka. Projek-projek ini telah diadaptasi kepada pendekatan objek pembelajaran diguna semula untuk alasan pedagogi dan

alasan etnik dan kertas kerja ini menyelidiki rasional kepada alasan-alasan ini. Di samping itu kedua-dua projek ini telah terlibat dalam pembangunan pelbagai alatan yang direka bentuk UoN seperti alatan *Workspace* yang menyokong kepada imbasan, pengkongsian rakan dan pembangunan porfolio kerja dan *Learning Activity Analysis Tool* (LAAT) untuk menyokong pembangunan sokongan berkesan untuk pelajar atas talian.

Introduction

This paper is divided into four sections. The first section covers the context for the V-ResORT project, the second provides some examples of the materials and the ways personalisation and localisation are addressed. The third section covers the context for the eChina-UK eEducator project with the fourth providing the structure and some examples of these materials and the tools developed. The ways personalisation and localisation are addressed within this project are discussed.

The V-ResORT Project: the Context

The project is led by the University of Nottingham and central to the web based project materials at www.v-resort.ac.uk is the recognition that video narratives can present authentic multiple representations of 'real' researchers projecting their knowledge and experience of the research process, can show complexity and the contested nature of educational research and can help to build online learning communities. The project has developed a conceptual and a pedagogic framework to support the materials. It uses internet-based technologies that support video streaming and captures a wide range of researcher experiences, case studies and expert views organized into flexible e-learning materials to give an authentic context for theory and practice. These are supported by skills training and links to resources. This represents a radical departure from conventional text based and theory led approaches to introducing research methods in education and response from academics indicates that they may be suitable for use across a much wider range of subject contexts than education studies. Figure 1 provides a view of the main navigation page, showing six key questions the researchers answered in describing their research journey. Learners can select a question, a researcher and then one of the short video clips shown. Selection of one researcher and then

questions will reveal a complete research journey. Selection of a question and then the researchers in turn enables comparisons between research to be made. The main navigation page representing the research journey and the profile of one of the researchers featured in the narratives is as shown in figure 1 and figure 2 illustrates one of the video narrative clips for this researcher.

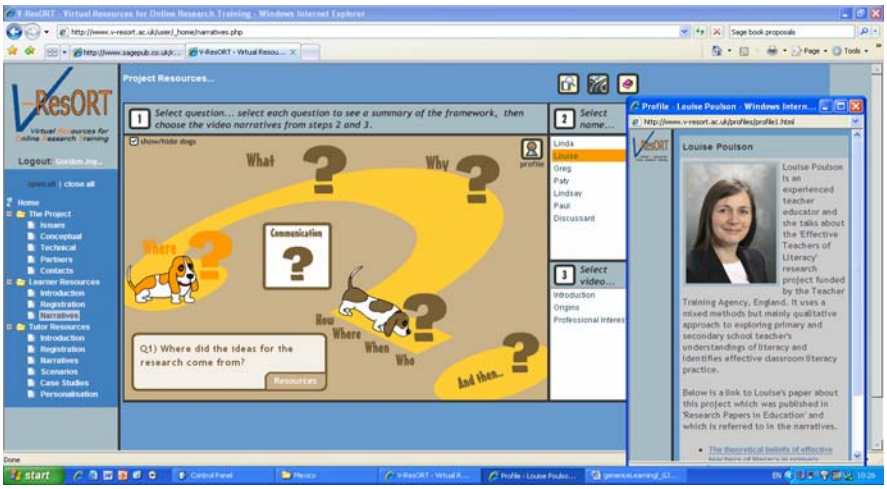

Figure 1 The research journey

Figure 2 The research narrative

A key feature of the V-ResORT website is the way the materials are integrated into a meaningful learning resource. The complete research narratives are linked to reports, articles, data, thesis chapters and other useful online and text based resources. Skills training is provided that relates directly to skills referred to within the narratives, i.e. the use of interviews, focus groups, data analysis software. Figure 3 shows a skills based training video clip covering approaches to writing at research degree level which is also used for analysis of the conduct of focus groups.

Figure 3 Skills training: discussing writing and analysing the focus group

Discussant narratives are also included that explore general methodological issues such as 'transferability' and 'ethics' that arise directly from the research narratives. This internal referencing was a deliberate pedagogic choice, the researcher narrative providing context and meaning for the learner - something research methodology texts often fail to do.

The V-ResORT Project: Localisation and Personalisation

The V-ResORT project as part of its dissemination strategy has run regional and national workshops and presented the materials at

international conferences. Interestingly in order to support localisation/ reusability, learning technologists, unlike the academics who have viewed the materials, have wanted to disaggregate the materials into smaller reusable learning objects (RLO). There is a strong economic argument for this approach as online interactive materials are expensive to produce and often the same or similar content is developed to be used in different contexts, using different technologies for delivery on different platforms. Metadata standards have been defined for RLOs and these standards define an RLO as 'any entity, digital or non-digital, that may be used for learning, education or training (p.6 IEEE, 2002)'. From an RLO perspective it is considered that interoperability (content from multiple sources working equally well with different learning systems) and reusability (content developed in one context being transferable to another context) are essential for this localisation to occur.

The reusability paradox presents an argument against RLO's being effective in supporting learning. 'To make learning objects maximally reusable, learning objects should contain as little context as possible (however) the meaningfulness of educational content is a function of its context.' (Wiley, accessed 13/11/2006). Context is clearly important for the video narratives in the V-ResORT materials. There are both pedagogic and ethical reasons for not taking an RLO approach within the V-ResORT resources. A strong pedagogic justification for the approach taken is that research into learner experiences of similar materials found (Lally et al. accessed 13/11/2006) that learners wanted complete research narratives – a single video clip of a research story was found to wet appetites for the complete story. Evaluation of V-ResORT has also found that academics and users value the integrated nature of the website. This of course makes sense in that each part of the research process is intertwined and relies upon an understanding of the whole for it to make full sense. The ethical justification relates to the agreement made with the researchers to provide a complete video narrative, albeit broken into small clips to improve accessibility and navigation. Researchers were not going to agree to have their research stories set in new and unknown contexts for the same reasons that they were attractive to learners as complete narratives. In reality users are able to localise (adapt the materials to local contexts) and personalise (take individual learning pathways to meet individual learning needs) the materials without the need to unpack and repackage the materials as discrete learning objects. This is achieved through the use of

navigation tools to support easy access to individual resources. The research journey navigation shown in figure 1 is one approach. Another is the search facility that provides quick access to video clips on such issues as ethics, interviews, data analysis etc, in addition learning pathways are provided that lead the user through commonly accessed routes through the resources such as: understanding the research process, developing research questions, ethical issues in educational research etc. In order to support localisation academics have been encouraged to suggest new learning pathways to suit their courses as well as to contribute new video narratives to the website and this work is in progress. In addition scenarios of use as well as case studies of actual use in a variety of course are being captured to support the localisation process.

eEducator Training: the Context

The School of Education, University of Nottingham (UoN), UK and Beiwai: Online, Beijing Foreign Studies University (BFSU) Beijing, China have been engaged on a collaborative project to develop an online Masters in English Language Teaching for teachers at tertiary level (MA eELT). Details of these Higher Education Funding Council for England (HEFCE) funded developments and the wider eChina-UK programme of which this project was only one part can be found at http://www.echinauk.org/. As part of the UoN-BFSU collaboration and as a result of a user needs analysis of potential tutors for the Masters course it became clear that a 'new' approach to tutor training was needed. This resulted in further collaboration by the partners to develop a generic module for the training of online tutors as part of the eChina-UK programme, funded by the institution themselves together with HEFCE. The approach to tutor training that exists in China tends to focus on supporting specific learning and teaching activities in the course. This tutor training programme like many in China involves face-to-face residential training in orienting the tutor to the nature of the course and their role. At Beiwai: Online there is also an online experiential component to the training which involves an exploration of the materials including an experience of using a discussion forum. There are two problems with this approach: firstly the training is course specific presenting models of effective practice that may not necessarily be transferable to other contexts; and secondly it is does not support tutors in developing the skills necessary to be flexible enough to meet the changing

demands of online tutoring. These increasing demands are as a result of the move to more complex learning environments which include new tools and new ways of working – often the expectation is that the online learners work autonomously and collaboratively.

eEducator Training: the Module

The UoN-BFSU materials developed for the MA eELT have self-consciously set out to include a wide range of self study, cooperative and collaborative activities which provide opportunities for students to develop as reflexive and autonomous learners using a wide range of learning tools. This experiential context for learning is 'new' for both the student and the tutor and thus demands a focus within the tutor training curriculum on supporting the range of pedagogic approaches used. Each activity will have its own specific demands. Each student and tutor will bring to the activity their own set of expectations and skills which will need to be considered if the outcome of the activity is to be successful in terms of meeting the course expectations and also the expectations of the students who desire a relevant, rewarding, motivating and social experience (Joyes & Chen 2006). Our dilemma as designers of the tutor training curriculum was that a focus on specific activities that use specific learning tools means that the training programme would not be flexible enough for use across the HE sector. Our solution was to define the curriculum in broad areas or domains (Figure 4), provide a wide range of online tools to support learning as well as a tool for analysis of online activities. This approach supports the tutor to develop an understanding of the context for learning in which they and their students are involved and of how to support their students effectively.

The eEducator Project: Localisation and Personalisation

As mentioned above, a key feature of the eEducator training module is the use of tools to support localisation and ensure the module is a truly generic one. Two of these tools, the Workspace and the Learning Activity Analysis Tool (LAAT) are described below.

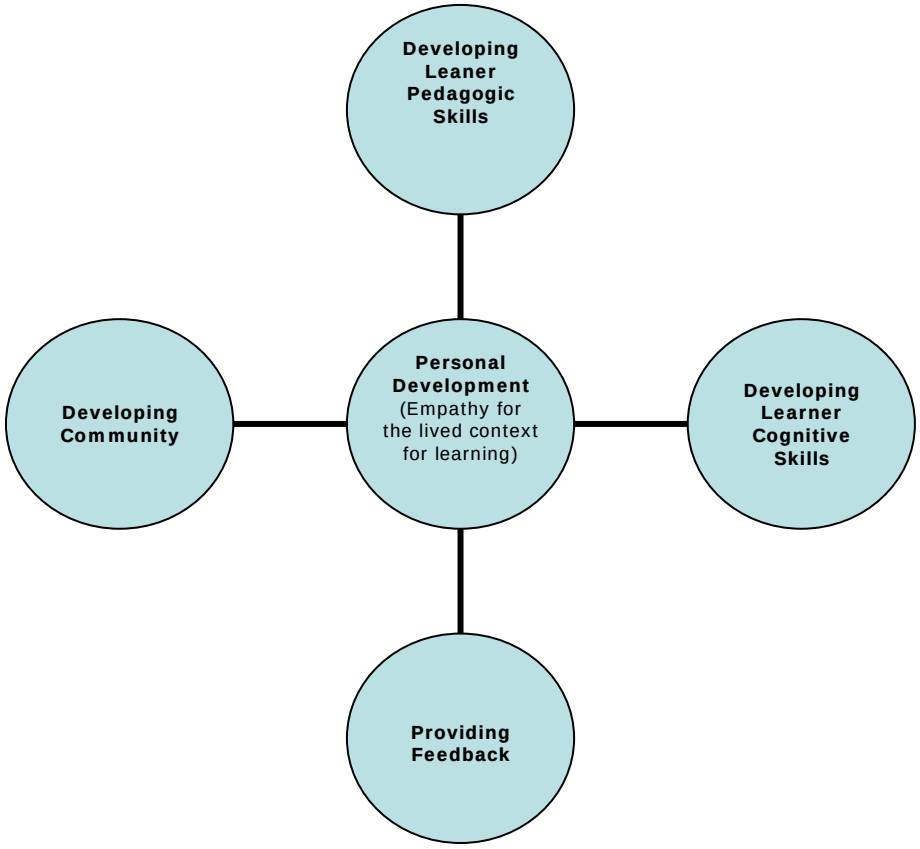

Figure 4 The tutor training curriculum domains

The Workspace-online Personalisation

The premise behind the Workspace is simple. If a student is working online then they should be provided with their own personalisable workspace with useful tools for learning, together with an archive of their work in one online space that can be accessed from any computer. The Workspace provides this online facility. This removes some of the organizational and technical barriers that face the online learner and ensures their energies are focused on engaging with the learning materials not the technology. It provides the learner and their tutor with a comprehensive set of tools (Figure 5) for effective online academic

working, reviewing completed activities/work which is archived, note taking, reflective writing, bibliographic referencing, sharing with peers, submitting assignments and getting feedback from their tutor. The Workspace has been developed as a Moodle module and is available for use under a creative commons license. The inclusion of the workspace in the tutor training module was critical in that it provides tutors with an experience of a range of tools that support online learning that raise questions related to the tutors role in supporting their learners.

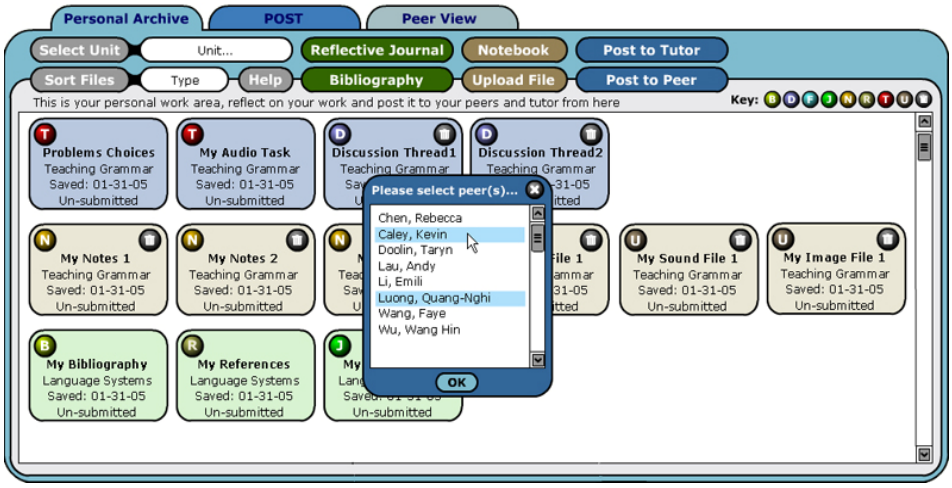

Figure 5 The Workspace

The Learning Actvity Analysis Tool (LAAT)

The LAAT (Figure 6) is an online interactive tool that represents an activity system which is way of visualizing the total configuration of an activity (Engeström, 1978). This approach is based on activity theory (Leont'ev, 1978; Vygotsky, 1978) and it has a been argued that e-learning activities that involve collaborative learning can be seen as types of learning support and can be represented as an activity system (Merrill, 2002 ; Oliver & Herrington, 2001).

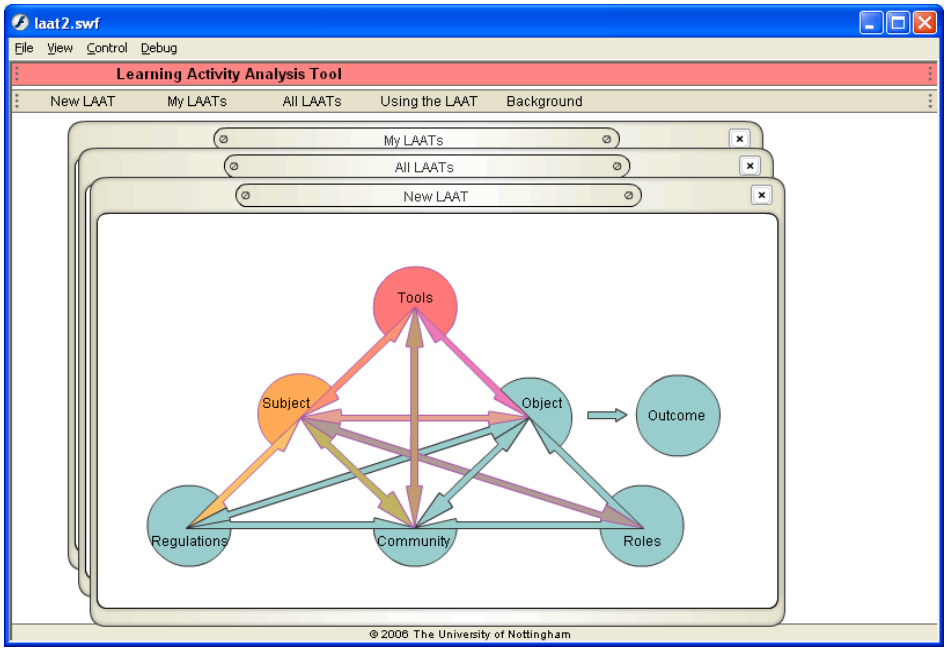

Figure 6 The Learning Activity Analysis Tool (LAAT)

The following considers the activity system, as represented in the LAAT in Figure 6, applied to online learning and the work activity of an online tutor within a course in higher education. The object of this work is to support the student engaged with a particular activity. The outcomes include the intended ones for the students such as ownership of the learning process and successful activity completion i.e. development of knowledge, understanding and skills and associated ones such as skills development. Unintended outcomes such as possible dissatisfaction, non-engagement, tutor-dependence behaviours can have a negative impact on learning. The instruments may include communication tools such as email, discussion forum, which may be used to support the development of understanding and encourage engagement. Other instruments may be diagnostic and pedagogic-related concepts and methods enabling the tutor to develop an empathy for and an understanding of the student within the wider context for learning in which they are working. The community consists of the tutor and their group, but may include other tutors and staff

at the institution. The roles relate to the ways of working expected of the students and the tutor – some of these will be determined by the institution but some will be additionally negotiated within the learning context. Finally, the rules regulate the use of time, the online behaviours, the measurement of outcomes, and the criteria for rewards (or awards).

The LAAT, a key feature of the eEducator training module, is used to provide a framework for the tutor to review online learning activities and so mediate the designed learning experience for the online learners. The LAAT provides the means of matching the designed learning activity to the current context for learning as well as the means by which the trainee tutors are supported in reflecting upon and researching their own practice. In the module, trainee tutors use the LAAT to analyse learning activities and, consider the range of strategies that might be used to support their online learners. Their analyses are saved and can be shared and discussed with their peers in order to develop ongoing understanding of effective practice. The data produced in the use of the LAAT is revealing interesting issues in relation to perceptions/beliefs of learning and teaching and this is forming the basis of research at the UoN.

The eEducator Module Structure and Localisation

The module that has emerged contains a set of learning activities, has a duration of 10-14 weeks, and has the structure shown in Table 1.

Table 1 The structure of the generic eEducator training module

Unit	Title	Brief description	Mode	Duration
1	Induction	Trainee tutors are introduced to the module and its structure, and to ways of working, including the learning tools.	Face-to-Face and/or online	1 week
2	Experiential orientation	Trainee tutors study online activities, to explore new approaches to learning and to familiarize themselves with the nature of the course on which they will be supporting students. The LAAT begins to be used to develop a discourse around effective practice.	Online: supported self study and co-operative learning	2 to 3 weeks

Continued on next page

Table 1 (*continued*)

Unit	Title	Brief description	Mode	Duration
3	Personal Development Planning	Trainee tutors complete an online self-assessment, in order to reflect upon their learning needs in relation to the 5 areas of the curriculum to be offered in unit 4.	Face-to-Face and/or online	1 to 2 weeks
4	Personalized experiential training	Trainee tutors study online using the LAAT and other training activities to explore ways of supporting their online students within the types of activities in which they will be engaged.	Online: supported self study and co-operative learning	4 to 6 weeks
5	Assessment	Trainee tutors complete a portfolio of current understandings of the nature of support for online learning and set targets for future professional development.	Face-to-Face and/or online	2 to 3 weeks

Unit 1, the induction, provides an introduction to the module, to its structure, the intended learning outcomes, and the pedagogy. It also provides an introduction to online working, including the community within which they will be working. A key element of the induction is the introduction to the use of an online reflective journal to record reflections in relation to their own experiences of working online within this module, and of the roles of the tutor and the student/s in the activities.

This is followed by Unit 2, which provides an experiential orientation to online learning, in which the tutors undertake online activities that require them to work in self-study and co-operative modes using a wide range of online tools. Examples of online learning activities from the five domains of the e-Educator curriculum provide the context for the tutors to consider their roles in relation to each of these five domains. At present, Unit 2 is populated by examples of learning materials from the MA eELT modules for the BeiWai Online training course, but the intention is for the generic module to provide a range of examples of e-learning materials from different subject disciplines. This unit will also need to be populated with compulsory activities from the course for which the tutors are being trained. During this unit, the tutors will need to assess the suitability of the activities for any particular context and, in order to achieve this, they

will be introduced to the LAAT. They will apply the LAAT systematically to at least three different types of online activity, analyzing them in some detail, and as a result of their analyses, they may find that student support needs to be modified. The tutors will continue to update their reflective journals, and the intention is that the tutors' analyses and reflections are discussed as a conclusion to this unit and as a link to Unit 3.

The module recognizes the need for those in training to make choices about the nature of the programme they should engage with, and so Unit 3 focuses on personal development planning. The experiential approach of Unit 2 enables the trainee tutors to make informed choices about the areas of the curriculum on which they need to focus. The use of the LAAT, and the discussion around it, will provide a sound basis for the personal development planning undertaken in Unit 3. The aim is to provide an online self-analysis tool, covering the five aspect curriculum, to aid this process. This tool is currently being developed. Unit 4 then provides the online personalized experiential training. For the co-operative parts of this unit, there is a need for a group of at least three trainee tutors to study them together, with the support of an experienced tutor. (In fact, this is also important for the experiential orientation of Unit 2.) However, some of the unit is designed for supported self-study. Within Unit 4, the LAAT is again used as a key tool for supporting tutors in their analysis of the online activities.

The tutor's reflections and discussions around these activity analyses forms the evidence base for the completion of a summary portfolio of current under-standings of the nature of support for online learning. It will be supported by peer review, and presented for the module assessment in Unit 5. An important feature of this is further reflection of personal development needs, as well as setting of targets to achieve these. It is envisaged that a trainee tutor will NOT be able to complete the module as an isolated learner. A solitary learning experience is a key contributor to non-completion of online courses and we believe it is important for trainee tutors to experience the benefits and challenges of group-working online. For this reason, some activities in Units 2 and 4 will need to be studied co-operatively and the peer review in Unit 5 is seen as an important feature of the learning process. We envisage that this work can be carried out in small groups of three or four; where larger groups are to be involved, the recommendation is that these small groups work within whole groups of

no more than twenty. These recommendations draw on the experience of effective group working within the project institutions and some evidence from the literature (Goodyear 2001; Brook and Oliver 2004).

Personalisation is supported through the experiential, personal development planning and portfolio approach using the Workspace and the LAAT and is a central pedagogic design feature of the eEducator training module. The structure also allows for localization in that Unit 2 provides examples of online learning from courses/modules on which the trainee tutors will actually be supporting learners. Importantly they would be expected to experience a wider range of online learning in Unit 2, as increasingly tutors are expected to provide evaluation feedback to course designers and this experience provides useful background and preparation for this by broadening the tutors understandings and experiences of effective e-learning pedagogy.

The eEducator project set out to research the personalisation and localisation design issues and to this end a major six month study is being carried out at Universiti Sains Malaysia, during 2007.

Concluding Remarks

This paper has described some of the challenges and resulting design approaches to developing online learning that support localisation/ reusability as well as personalisation. The approaches have been influenced by pedagogic issues rather than technical standards and so have taken quite different approaches to localisation than the RLO approach. All of the eEducator resources described are designed to run on the open source Moodle platform and are available to download and use from the eChina-UK programme website www.echina.org under a creative commons open source license with the intention of engaging the e-learning community in further research and development in this area. The V-ResORT materials are free to use by any higher education institution and has been attracting partners who wish to add materials to the web site www.v-resort.ac.uk from the day it was launched.

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