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# ADAPTING HIGHER EDUCATION LEARNING MATERIALS FOR FURTHER EDUCATION - SOME EXAMPLES OF RE-PURPOSING JISC SERVICES WITHIN THE UK

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## Abstract

*The extension of the JISC remit to include Further Education (FE) as well as Higher Education (HE) in 1999 signaled a change for those services provided prior to this date. This paper describes some of the recent developments that altered the way in which learning materials are created and provided. It will look at some of the issues that this impact made on existing services and will give examples of some of the projects that have been funded to try to take into account this new sector of the community by investigating pedagogically sound ways of extending and/or re-purposing current materials. The paper will focus on three projects that have built on established successes in HE. This paper concludes by identifying some of the issues associated with this exercise and the factors that have aided the success of these projects.*

## Keywords

*UK, Higher Education, Further Education, re-purposing, learning materials*

## Background

The Joint Information Systems Committee (JISC) was established on 1 April 1993 under the terms of letters of guidance from the Secretaries of State to the newly-established Higher Education Funding Councils for England, Scotland and Wales, inviting them to establish a Joint Committee to deal with networking and specialist information services. The Committee in the years following expanded its remit to include the ex-polytechnics, Higher Education colleges and the Department for Education, Northern Ireland (DENI).

The JISCs user community was expanded again in 1999 when the Further Education (FE) funding bodies became funding partners. This meant a major rethink of infrastructure and services available to a community that consists of over 500 colleges. JISC announced “as a stakeholder FE can expect real benefits from the considerable success that JISC has enjoyed in the development and provision of high quality services and leading edge technological advance.” In order to meet the needs of this new user group various programmes and projects were initiated.

This paper focuses on learning from experience through projects which are written up here as three case studies of repurposing content that was originally intended for an HE audience but were also seen as holding potential for members of the FE community.

It was recognised that FE learners take a different approach to learning and consequently ways to adapt successful HE services to this group were discussed. It was proposed that we work closely with the post-16 community to design effective and appropriate structures that meet the needs, subject interests, and

learning priorities of the sector. Therefore, consultation with members of the FE community occurred during the start up of each project and it was agreed that not only should the new materials cover different subject areas where appropriate, but they will also have a new design to reflect the ways that students learn in the post-16 sector. These representatives drew our attention to some of the wide-ranging aspects of FE.

Clearly, we could not focus on all of the different types of students that make up the sector, but attempted to address some of the generic characteristics that apply to lecturers and learners from FE. Broadly speaking it was felt that focus is more specifically on the ‘doing’ aspect in proposed learning outcomes. ‘Knowledge is the know why, skill the know how’ (Boyett and Boyett, 1998). The Vocational Certificate in Education programme (VCE) is a competence-based qualification. As such, it demands that the student produces evidence of their ability to do (skills) as well as their knowledge and understanding of the course content.

Involving students in more active forms of learning is how services such as Biz/ed attempt to meet their FE remit, these were also recognised as a key factor in FE course design and learning.

The FE representatives also helped us identify three generic points that were thought to apply to all materials to be created/repurposed for the FE community:

- They should offer an interactive and engaging learning environment. Breaking down text into ‘bite-sized chunks’ and incorporating relevant quizzes and games to lighten and reinforce the learning experience were suggested.
- They should be considerably shorter in duration than those aimed at HE audiences.
- They should be mapped to the post-16 curriculum (both to level and qualification) wherever possible.

Staff at the ILRT and the RDN were considered well placed to deliver these projects as the work built on the considerable expertise and knowledge gained on related activities. Furthermore, the existing resources have a high profile across the educational sector and the relevant links through the community, an important factor that will help to ensure that the resources developed meet the needs of (and reach) the target audience.

### ***The Introduction of Regional Support Centres (RSCs)***

Thirteen Regional Support Centres were established in the UK to support Further Education colleges. RSCs provide a variety of network and infrastructure support services to colleges as part of the programme of connectivity to JANET (Joint Academic Network). It was also recognised that RSCs should play an important role in communication between the regions and the central committees of JISC, and in helping to disseminate and raise awareness about JISC services.

RSCs are also encouraged to notify JISC of problems and/or gaps in collections and services (JISC, 2001).

### ***Creation of Content for FE - Different Approaches to Re-purposing***

Whilst JISC felt in principle that all of its content could be of potential value to FE; it was recognised that “the greatest need in FE is for electronic learning materials and information resources that can be used directly by both the teacher and learner in mainstream FE pedagogic activity” (JISC, 2001).

In researching this paper it became apparent that most commentary focuses on how to create reusable learning materials from scratch (Calverley (2002) and Muzio (2002)). This reflects the observation by Duval (2001) that “there is now considerable development effort being applied to the challenges of interoperability, reuse and re-purposing of eLearning resources”.

According to Boyle “tutors often wished to reuse and re-purpose learning resources to meet the perceived needs of particular contexts and students”. This has not traditionally been possible because of the way in which the resources were designed but it is believed that in the future, however, learning objects must be developed with potential reuse, and especially re-purposing in mind (Boyle (2003)). It is hoped that this will lead to a more pedagogical approach being applied by the tutor or content creator.

This paper takes a different approach and focuses on extending or re-purposing existing learning materials for FE from resources originally developed for HE audiences. The services were all developed with one audience in mind and were not designed as a collection of stand-alone learning objects. It was recognised that legacy materials had no access to guidelines for interoperability and reusability when funding was offered (Currier, 2002). At the time of writing a new set of projects are being funded that focus specifically on the reusability and interoperability of JISC materials now that some clearer specifications have been identified. The JISC Exchange for Learning programme will explore the re-purposing of existing and forthcoming JISC funded content suitable for use in learning. Part of this activity is to explore the process of integration or “plugging-in” of usable objects into online learning such as Virtual Learning Environments (VLEs) and Managed Learning Environments (MLEs) (JISC, 2002). To assist with this, work is also underway led by the Centre for Educational Technology Interoperability Standards (CETIS) to create an application profile of the LOM (Learning Object Metadata) for UK education, called UK LOM Core.

The projects that are the focus of this paper were part of the first wave of materials that were made available to FE and as such have taken some different approaches to re-purposing. Case studies outlining the rationale and significant developments that took place during the projects are written up as potentially useful examples of building on existing best practice.

In order to ensure take up within the community and for FE to see a commitment from JISC to their requirements it was felt that new content services and innovative ways to maximise existing services should be developed. The remainder of this paper will outline some of the projects that the authors have been involved with - both extending and re-purposing original materials for FE students and lecturers.

## **Background to the JISC Services**

The ILRT (Institute for Learning and Research Technology) based at the University of Bristol, UK is home to 35-40 projects and services.

The ILRT has several long-standing services such as Biz/ed and the Virtual Training Suite and also contributes to the nationally run Resource Discovery Network through the Social Sciences, Business and Law Hub (SOSIG). In the past these services have received grants to produce materials and information for the Higher Education community.

The impact of the vast numbers of students and lecturers within Further Education accessing the available HE resources posed some interesting challenges to these services. We will now give a brief description of these services and we will look at each in more detail throughout the remainder of the paper. Each of these services was originally established to serve the needs of Higher Education in the first instance, although Biz/ed has always gone some way to bridging the gap between the 16-19 age group and undergraduates.

The authors felt they were in a unique position to work on projects that draw on their experience of building resources that meet different needs and use an existing product that has been tried and tested as a basis. The services (Biz/ed, VTS and the RDN) that are outlined below were all developed with members of a core team, which drew on the expertise of FE practitioners to deliver appropriate materials to the target audience. The projects, which were funded through research and development funds, are described in further detail in relation to the relevant type of repurposing they undertook.

### ***Biz/ed***

Based at the ILRT, Biz/ed is a free online service for students, teachers and lecturers of business, economics, accounting, leisure and recreation and travel and tourism.

Since its launch, in January 1996, Biz/ed has established itself as the primary provider of Internet-based learning materials for the economics and business education community. The number of visitors to the

site has been growing rapidly and it now regularly receives over 2 million page accesses per month.

The Biz/ed site is a unique combination of primary and secondary teaching and learning resources. Resource discovery is integrated with simulations, worksheets, glossaries, spreadsheets, resource databases, online chat with examiners and a series of Virtual Worlds to give a rich package of support for teachers, lecturers and students.

### ***RDN Virtual Training Suite (VTS)***

Again, hosted and managed at the ILRT, the RDN Virtual Training Suite is a national eLearning service for Higher and Further Education in the UK, offering free “teach yourself” tutorials delivered over the Web, for students, lecturers and researchers who want to learn what the Internet can offer in their subject.

The Virtual Training Suite currently offers 61 tutorials, and is run as a service of the RDN, with maintenance funding until 2005. The tutorials serve over half a million page views per month.

The ILRT team have co-ordinated input from more than 80 academics and librarians from universities and colleges across the UK to create this resource, packaging up national expertise to make it freely available for all to learn from.

### ***Resource Discovery Network (RDN)***

The RDN is a free Internet service dedicated to providing effective access to high quality Internet resources for the learning, teaching and research community. The RDN is a cooperative network of independent subject-based service providers called hubs, coordinated by the Resource Discovery Network Centre (RDNC), based at Kings College, London. These hubs provide access to a series of Internet resource catalogues containing descriptions of high quality Internet sites, selected and described by specialists from UK universities, colleges, libraries and affiliated organisations. ILRT are hosts of SOSIG (Social Science Information Gateway) one of the eight RDN hubs.

## **Adapting JISC Services for Further Education - the Projects**

The projects undertaken by the staff at ILRT have taken three different approaches to the expansion of the services outlined above for members of the Further Education community. These can be briefly described as:

- 1) Building on a tried and tested method
- 2) Re-purposing of current resources
- 3) Creation of new materials to support an existing HE resource

This paper will go on to outline the way in which the services mentioned above undertook projects to extend their portfolios to include this new user group. There will also be some discussion of the issues and successes that were encountered.

### ***1) Building on a Tried and Tested Method***

#### ***RDN Virtual Training Suite for Further Education***

This short project aimed to build on the success of the RDN Virtual Training Suite, a JISC-funded initiative, which teaches Internet information skills for different academic subjects via a suite of “teach yourself” tutorials, authored by subject specialists.

Originally the Suite offered 40 tutorials: 11 were published in July 2000 and 29 more were added in May 2001.

The first two projects aimed to serve the needs of the Higher Education community by:

- providing free, self-paced training in Internet information skills, delivered over the Web
- enhancing the value of the Resource Discovery Network (RDN) for learning and teaching

As the JISC remit expanded to serve the needs of Further Education it seemed appropriate to expand the Virtual Training Suite to meet the needs of this community. Feedback on the Higher Education resource suggested that:

1. The approach has potential to support the post-16 education community
2. Further development work is needed create a resource more tailored to the needs of this sector

The rationale behind why these services were funded to create FE learning materials is similar for each of the projects outlined in this paper. The justification for developing the Virtual Training Suite for FE will be explored thoroughly in order to set the scene for the other projects.

### **Why Build Virtual Training Tutorials for FE?**

The existing RDN Virtual Training Suite has generated a lot of interest (on average over 7000 page accesses a month per tutorial), which led us to believe there was potential for development of this resource for the Further Education community. In particular, support for a new set of tutorials specifically designed with FE in mind became clear from a number of parties. JISC felt that there was potential to develop the materials (2001), as did the recently set up Regional Support Centres who had been receiving encouraging feedback about the resource from their users. Feedback collected via the Web site also showed that the reach of the tutorials had already gone further than the intended community.

Whilst the feedback suggested that the VTS was potentially a valuable tool for post-16 learning, it was also clear that the current set of tutorials, devised for the HE community, did not meet the needs of the post-16 education sector either in terms of subject coverage or format. A proposal was presented to JISC to build some completely new VTS tutorials for FE. They would be new: not only in that they would cover different subject areas, but would also have a new design to reflect the ways that students learn in the post-16 sector.

In order for the project to be a success it was clear that working closely with the post-16 community to design an effective and appropriate tutorial structure that meets the needs, subject interests, and learning priorities of the sector was essential. Therefore, a steering group was assembled to advise on the development of these new tutorials.

Initial feedback and discussion about the VTS for the post-16 sector highlighted the following issues:

- The new tutorials should offer an interactive and engaging learning environment. It was proposed that we break down text into more 'bite-sized chunks' and to incorporate relevant quizzes and games to lighten yet reinforce the learning experience.
- A new, friendlier design was also requested. The HE tutorials had been designed to be low bandwidth, and as such were less graphical. It was intended that the new FE tutorials should adopt a new, more modern appearance, again to be more engaging to the intended audience.
- The new tutorials were also intended to be considerably shorter in duration than those in the current Suite (about half the length). The existing HE tutorials tended to have fewer pages, but with more text - breaking the text into more manageable chunks and trying to generally reduce the overall size of the tutorial seemed preferable for the FE sector.

It was also decided that the tutorials should be mapped specifically to the post-16 curriculum (both to level and qualification).

Taking the Virtual Training Suite concept and adding to it in order to provide a targeted resource for members of the FE community proved to be a very popular move. The Web page accesses for the new FE tutorials have consistently been higher for the new set of tutorials than the traditional suite created for HE. This may be in part due to the network of Regional Support Centres who have been actively promoting it within their regions, but experience and discussion since suggests that the FE community is quicker to adopt new resources within their curriculum than HE.

Buy in by the community was achieved by ensuring that the tutorials were written and edited by FE college lecturers, librarians and ILT (Information and Learning Technology) Champions. Having a steering group made up of key stakeholders at project's inception was also vital.



## 2) Re-purposing of Current Resources

Two projects were funded with re-purposing in mind as a way to extend current provision to the FE community. Re-purposing in these examples does not focus on aggregation of resources and making them interoperable but on taking content written for one audience and applying stringent pedagogical practice to rework them for a different target audience.

### VTS-X4L: Teaching Internet Information Skills

One of the themes of the JISC Exchange for Learning (X4L) programme was the “aim to explore the re-purposing of existing and forthcoming JISC funded content suitable for use in learning.” (JISC, 2002)

The aim of the VTS-X4L project is to raise the level of Internet information and research skills in Higher Education and key skills in ICT in Further Education by re-purposing the RDN Virtual Training Suite to assist widespread integration of this JISC resource into Virtual Learning Environments and taught courses. This project differed to the Virtual Training Suite for FE suite developed previously in that it is taking tutorials previously written for existing HE subject areas and re-purposing them for the FE curriculum. Again, FE practitioners were recruited to work on the tutorials; their input was essential to ensure the pedagogic content of these tutorials met the needs of FE.

One of the key objectives of this project was to look at the processes required for the re-purposing tutorials developed for HE subjects into a tutorial format designed to meet the needs for FE. This has resulted in the development of five new VTS tutorials for FE students based on re-working five existing HE tutorials.

It was suggested that re-purposing some of the existing HE tutorials into the FE tutorial model, especially for key subject areas taught in both HE and FE would be a useful exercise (mainly from community feedback and RSCs commentary on gaps in provision). Re-purposing HE learning materials for FE was not something that had been tried before in this way, but the potential benefits could be far reaching in terms of carrying out similar work in the future. Were encouraging. This initial attempt to repurpose a limited number of tutorials in key subject areas to plug gaps in the FE provision served as a useful pilot, and if successful could lead to further such exercises. The project finishes in September 2003.

A further aspect of this ongoing project is the investigation into the technical interoperability of the VTS with VLEs. It aims to find simple and practical ways of enabling those setting up a VLE for their course (be they lecturers, learning technologists or librarians) to embed the VTS tutorials into their VLE. Most of this work has centred on the embedding of educational metadata within the tutorials, to allow simple import of tutorial content into VLEs. Guidelines are also being produced to assist with facilitating the use of VTS tutorials in a wide range of VLE environments.

### Building Biz/ed for FE

The primary aim of the ‘Building Biz/ed for FE’ project was to enhance and extend the current Biz/ed portfolio of resources and learning materials to provide a clearer, focused area on Biz/ed for Further Education (FE) users. Biz/ed has always held a number of materials that were written for the Further Education community but this project not only sought to add to those but also aimed to make the site clearer to use for this group.

The main aims therefore were to:

1. Map Biz/ed resources much more closely to the courses followed at FE institutions (HND, GNVQ, AVCE, AS and A-level and so on).
2. Supplement and re-purpose existing Biz/ed resources to meet the needs of all relevant FE courses. For example, this would include the addition of materials to support the teaching of Sport, Leisure and Tourism.

This approach had a number of significant advantages:

- It builds on tried and tested best practice through Biz/ed expertise
- It provides a qualitative and targeted approach that will be valuable to the FE community

- It offers FE resources for new subject areas
- It builds a scalable and transferable model which, if successful, can easily be rolled out to other areas
- The project draws upon the knowledge of relevant stakeholders
- It helps to build the FE community and gives them a sense of ownership of the various resources available from the stakeholders in the project
- It integrates resources together in an efficient interface for students and lecturers in this community.

The first part of this project was concerned with the mapping of Biz/ed resources to specific curriculum within FE. Mapping the content of resources to courses enabled us to make many of the learning materials developed by Biz/ed more relevant and accessible to users. By tagging each page with information about subject, level and exam board, visitors to the site can access a comprehensive list of relevant resources via a “Quickjump” box. Given the modular approach of teaching business, economics etc this was an achievable goal that would have an immediate impact for the community. The resources now available have not just changed the view that FE users have of them - it has also helped to identify gaps in provision for the FE community that can be addressed in the future.

Initial statistics collected by the Biz/ed team have shown a large increase in the amount of traffic to the Web site and accesses to the site via the Quickjump feature average approximately 1000 per day.

The re-purposing of materials for the FE community has also had significant benefits for the FE community. The project is currently working on creating a set of specific resources for FE Travel and Tourism based on existing materials for HE Business students. These resources will include real business documents such as purchase orders, invoices etc that have more appeal to those studying within a vocational course.

### **3) Creation of new materials to support an existing HE resource**

#### **Case studies of the RDN for FE**

This project was proposed in order to develop the RDN’s services for the Further Education sector. The work comprised evaluation of the relevance of RDN hub resources for the FE community and the generation of a series of case studies that illustrate ways in which the resources of individual RDN hubs can be integrated into the FE curriculum. The project has gone a long way towards fostering closer links between the hubs and the FE community by:

- Developing a series of case studies (3 per hub), which describe the way in which the hub’s resources can be used to help with the delivery of particular courses and subject areas. The case studies were prepared by experienced practitioners from the FE sector in subject areas relevant to each hub.
- Assessing RDN hub resources for relevance to the FE community. The case study authors were also asked to carry out an assessment of the relevance of the resources held by the hubs for their subject area. This assessment includes identifying areas that may need developing in the future if the hubs are to serve fully the needs of the FE community. The assessment reports also include an overall summary of the FE curriculum as it relates to the subject area of each hub.

The final reports were found to be very useful by the RDNC management in identifying gaps in provision for FE and suggesting ways to develop future resources. The case studies give the community a more immediate way in which to use the resources within the RDN. By showing how the RDN resources can be embedded within certain curriculum areas FE tutors can use the materials that are already available - even though they were selected with the needs of HE in mind. This project was considered timely for the reasons outlined below.

#### **Why develop case studies for using RDN resources?**

##### **1. Differing requirements of the FE curriculum**

The FE curriculum has a different range of subjects and curriculum levels than the HE community, although there is obviously some overlap. Lecturers and students will appreciate the recognition of a different focus on the subject area at FE level to support the teaching and learning of their courses. The



assessment of each hub carried out by the case study authors will also help the hubs in their planning and future development.

## 2. Building relationships with the FE community

The hubs have historically been built primarily to serve the HE community. This has meant that they have all developed excellent links with their subject communities at the Higher Education level. However, the extension of the JISC remit into the FE sector means that they will need to build wider networks to help understand the needs of FE users. The development of case studies and a concurrent assessment of the hub's resources will help the hubs to build better links and give them a better appreciation of the needs of the FE community.

## 3. Provision of content for FE lecturers

Feedback from FE users has indicated that the RDN represents a rich resource but there is a need for a significant investment of time and effort to explore the optimum ways of integrating these rich and diverse resources into the FE curriculum. The development of case studies will help give lecturers a much higher level of confidence and allow them to integrate resources much more quickly into their courses. This should help encourage the use of the RDN by FE users.

## 4. Helping the RDN develop in line with the needs of the FE sector

The collation of the results from the subject-based assessments have provided the RDN with invaluable information to help them plan for the future development of the service in line with the wider FE remit.

This project should help to ensure that a closer relationship with the FE community is built right across the whole of the RDN and this in turn should help to meet the aims and aspirations of the JISC FE plan. It has also provided consistent and valuable content for each of the hubs that will help with the integration of hub resources into FE courses.

## Conclusions

Feedback from participants at launch events and through email evaluations suggests that these materials are proving to be useful additions to the current portfolio of FE materials. In the case of the Virtual Training Suite page FE tutorial page accesses far exceed those of the HE tutorials (9000 per month compared to 7000 per month for HE tutorials). The successes of these projects have undoubtedly been due to the input from FE practitioners at all stages. Focus groups and advisory boards during set up periods have called on expertise from the sector, which has ensured the appropriate pedagogical aspects of writing for this audience were considered from the start. Input from lecturers, librarians and ILT champions as authors of materials means the subject knowledge is accurate and resources are written at the right level. Publicising both of these aspects through the RSCs and further a field during their launches has helped to secure buy in from the community and as a result has gone a long way towards the success of each of these projects.

Managing a distributed team of subject experts makes for interesting project management issues but is essential for coverage and expertise of the subject and course. This in turn results in immediate exposure of the materials to the intended audiences, as the authors will often not only promote their own product, but also the work done by colleagues as part of the project.

Re-purposing materials from existing resources that were not intended for reuse is something that is worth considering when expanding services. Serious consideration should be given to the pedagogical and technical implications, and subject differences.

It should be noted that whilst the actual process of repurposing existing materials for a new audience was successful, it was by no means an easy process. All the projects discussed in this paper were short

- typically only a few months long, and because of these short time scales, the pressure on staff to produce these new materials was intense. Whilst repurposing existing materials can be seen as a shortcut to expanding service portfolios, etc, the amount of effort involved should not be underestimated.

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