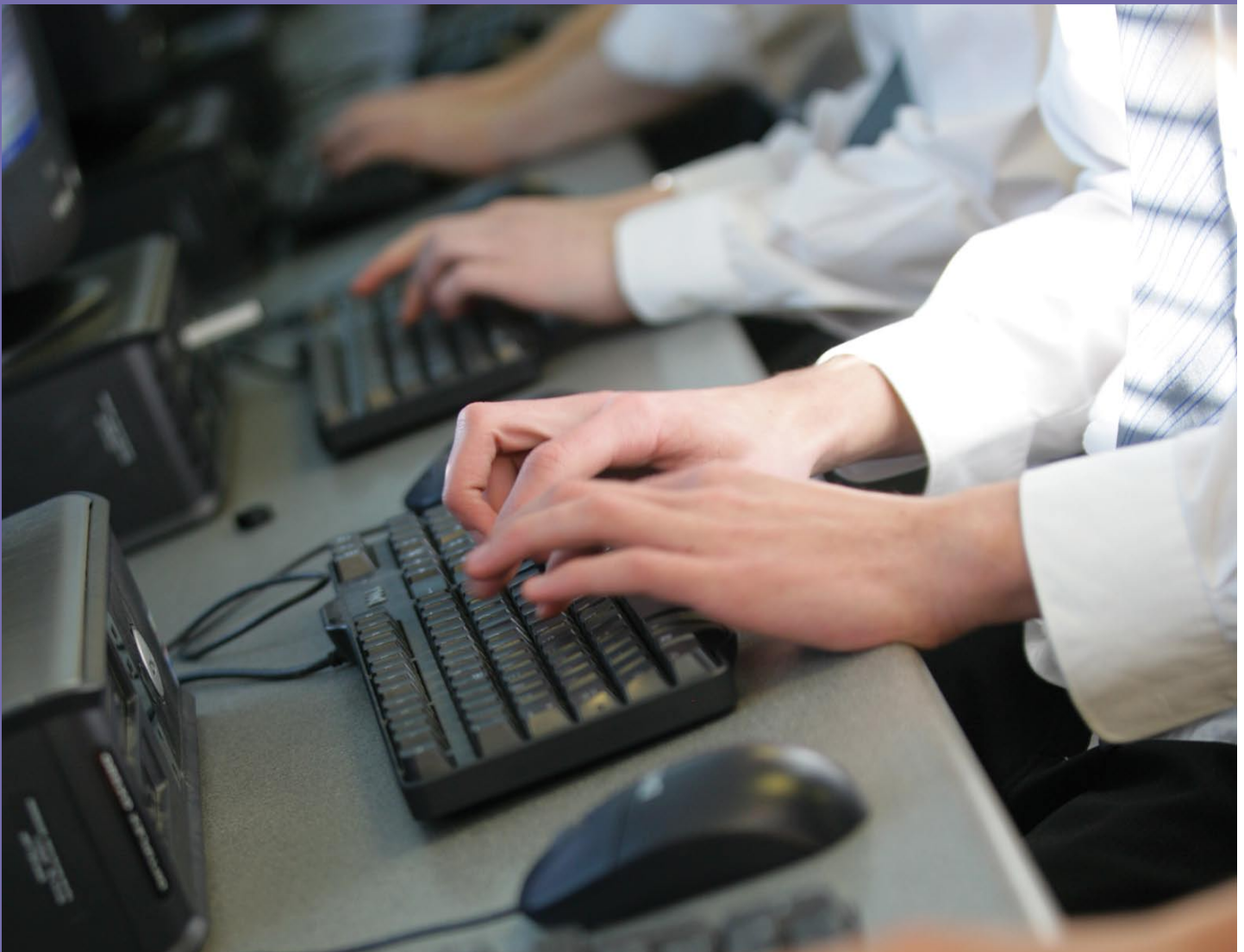




Evaluation of the Learntrain Access Repository for NLN Materials



Research

Research document No: 015/2007

Date of issue: December 2007

Evaluation of the Learntrain Access Repository for NLN Materials

Audience Advice and guidance organisations, Careers Wales, Colleges of Further Education, employers, learndirect, training providers, adult and community learning providers and DCELLS programme delivery, funding and planning departments.

Overview This report provides findings from an Evaluation of the Learntrain Access Repository for National Learning Network Materials. The evaluation focuses on the effectiveness and impact of Learntrain, as well as the future need for and sustainability of an e-learning repository. It is intended to inform future access to the Materials via an access portal. The evaluation also addresses current use and the suitability of the repository for the main sector stakeholders: Further Education, Work Based Learning, Adult and Community Learning and Schools with a sixth form.

Action required No action required.

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An Evaluation of the Learntrain Access Repository for National Learning Network Materials



**A CM International Report
in association with:**

LIFECYCLE Evaluation

Date: 5th September 2007

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Executive summary

Objectives

This report provides findings from an *Evaluation of the Learntain Access Repository for National Learning Network (NLN) Materials*. This is based on research undertaken by CM International and Lifecycle Evaluation in the summer of 2007 for the Department of Children, Education, Lifelong Learning and Skills (DCELLS).

The evaluation focuses on the effectiveness and impact of Learntain, as well as the future need for and sustainability of an e-learning repository. It is intended to inform future access to the Materials via an access portal, in light of the end of the current contract in October 2007. The evaluation also addresses current use and the suitability of the repository for the main sector stakeholders: Further Education (FE), Work Based Learning (WBL), Adult and Community Learning (ACL) and Schools with a sixth form.

Key features of Learntain

The Learntain content management system was introduced in Wales in February 2006. It gives learning providers and learners direct online access to the National Learning Network (NLN) materials. This includes some 900 hours of e-learning content developed with funding from the Learning and Skills Council.

Learntain responds to the Welsh Assembly Government's priority for easy access to the materials by all learning providers. In this respect Learntain represents an important access mechanism for the materials, and can be seen to contribute towards a range of strategies including the Wales e-learning Strategy for Wales, and its objectives to 'demonstrate excellence in Connectivity, Content, Confidence and Competence in the application of technology to learning'.

Learntain provides administrators and users with a relatively simple interface, allowing the NLN materials to be searched and browsed online, grouped into folders, and downloaded / burnt to DVD. It also incorporates administrator functions for advanced account management and user tracking / communication¹. These features allow Learntain to be used in both a classroom context, but also in other locations, for example the home. This opens up the possibility for a flexible approach to learning. It also allows institutions to download the Materials to their own Virtual Learning Environment (VLE).

Effectiveness and impact

The broad findings from this research indicate that Learntain has been effective in raising awareness of the NLN materials, and enabling access amongst a range of different learning sectors. This has seen the delivery of a range of awareness workshops and events in each of the target learning sectors, and the registration of some 1,747 user from 127 organisations. For a large proportion of these users, this

¹ The schools sector are currently using a simplified version of Learntain. This does not include the ability to group the NLN materials.

has been the first time that they have used the NLN materials. Feedback, in this respect, suggests that Learntain is highly praised by users, both in terms of its interface and content (the NLN materials). Key characteristics identified, here, include its usability and general ease of use. Such features are further confirmed by the relatively low numbers of requests for help logged by the webmasters in each of the sectors.

In assessing the impact of Learntain it is important, however, to recognise that it is largely an enabler of learning impacts. Here, it provides the mechanism by which learners can access the NLN materials. The true *learning* impacts associated with Learntain, however, are likely to come when these materials are used by learners as part of their studies.

SWOT

Strengths

- Ease of use: Learntain does not require high IT literacy
- Flexibility: Learntain can be used anywhere with an internet connection
- Robustness: Learntain has strong reliability in comparison with previous access repositories

Weaknesses

- Learntain's search function lacks accuracy
- Learntain does not provide detailed user level tracking data
- User registration does not allow bulk uploading of details
- Lack of Welsh language NLN materials prevents further use of Learntain

Opportunities

- Provide user level tracking functionality
- Refine Learntain's search function to provide more targeted results
- Respond to forthcoming authentication needs of FE, by ensuring consistency with Shibboleth protocols
- Continue awareness raising activities, particularly in schools
- Functional enhancements should be considered in areas such as the ability to upload files

Threats

- Low IT literacy and confidence in sectors such as ACL limit further roll out
- Poor access to ICT resources in some sectors limits further roll out
- Care is needed to ensure that functional enhancements do not damage Learntain's key features such as 'ease of use'

Recommendations

Two broad areas of recommendation are identified in the report:

- Strategic recommendations – concerning the future strategic approach to an access repository for the NLN materials in Wales.
- Usability recommendations – concerning improvements to the functionality of Learntain

Full details, including the rationale for each recommendation can be found in the concluding section of the main report.

Strategic recommendations:

R1: Access to the NLN materials should be maintained through an access repository that embodies the key success elements of Learntrain.

R2: Efforts to raise awareness of the access repository should be maintained across all sectors.

R3: Consideration should be given to the feasibility of enabling Welsh language accessibility to the access repository, and selected NLN materials.

R4: Functional additions should be fully evaluated to ensure that ease of use is maintained.

Usability recommendations

R5: Future iterations of the access repository should contain a sufficient level of instructional guidance to Learners

R6: The access repository should provide users with access to both email and FAQ support

R7: The ability to register multiple users should be built into future iterations of the access repository

R8: The access repository should be consistent with federated access mechanisms such as Shibboleth²

R9: The availability of user level tracking data should be built into future iterations of the access repository

R10: The access repository should provide users with enhanced search function accuracy

² 'Shibboleth is an initiative to develop an open, standards-based solution to the needs for organizations to exchange information about their users in a secure, and privacy-preserving manner.'
<http://shibboleth.internet2.edu/shib-intro.html>

1. Introduction

The Learntrain content management system was introduced in Wales in February 2006. It gives learning providers and learners direct online access to the National Learning Network (NLN) Materials. This includes some 900 hours of e-learning content developed with funding from the Learning and Skills Council. By hosting the NLN materials Learntrain contributes towards the Welsh Assembly Government's priority for easy access to the NLN materials, as well as related strategies such as the Wales e-learning Strategy for Wales, and its objectives to 'demonstrate excellence in Connectivity, Content, Confidence and Competence in the application of technology to learning'.

Learntrain provides administrators and users with a relatively simple interface, allowing the NLN materials to be searched and browsed online, grouped into folders, and downloaded / burnt to DVD. It also incorporates administrator functions for advanced account management and user tracking / communication³. These features allow Learntrain to be used in both a classroom context, but also in other locations, for example the home. This opens up the possibility for a flexible approach to learning. It also allows institutions to download the Materials to their own Virtual Learning Environment (VLE).

Prior to the implementation of Learntrain in Wales the NLN materials were available to the FE sector, and accessed through the Content Access Tool (CAT). This allowed the Materials to be downloaded by FE institutions. It did not provide online access; nor was it available to a range of learning sectors. Learntrain was therefore developed as a response to the limitations of the CAT. The introduction of Learntrain in Wales allowed both FE institutions and new learning sectors to access the Materials for the first time - notably adult and community learners (ACL), work-based learners (WBL) and schools with a sixth form.

This evaluation assesses the effectiveness and impact of Learntrain, as well as the future need and sustainability of an e-learning repository. It is intended to inform future access to the Materials via an access portal, as well as procurement decisions. The evaluation also addresses current use and the suitability of the repository for the main sector stakeholders: FE, ACL, WBL and schools.

This report sets out CM International and Lifecycle Evaluation's (the Consortium) findings⁴. It begins by describing the methodology employed and the actions undertaken by the Consortium (Section 2). Section 3 then provides a context for Learntrain, describing the state of e-Learning in Wales, the processes used to implement Learntrain as well as the main actors. This is followed by an analysis of Learntrain's current activity, based on the analysis of the tracking data and the interviews conducted (section 4). Section 5 then audits the effectiveness and impact

³ The schools sector are currently using a simplified version of Learntrain. This does not include the ability to group the NLN materials.

⁴ The authors of the report.

of Learntrain as an NLN materials repository, drawing on stakeholder, user and expert perspectives. It also reviews Learntrain's contribution to Welsh Assembly Government (WAG) policy. The final section draws together the Consortium's conclusions and recommendations for the future use of Learntrain (Section 6).

2. Research methodology

2.1 Scope of the research

The objective of this report is to evaluate the Learntrain access repository, and its role in facilitating access to the NLN Materials. In this sense the evaluation's focus is on assessing Learntrain and its strategic support, rather than the Materials themselves. The Invitation to Quote⁵ sets out a detailed list of evaluation questions and these form the basis for the methodology employed:

- Assess the impact, strengths and weaknesses of the repository;
 - Recommend future provision of access to the materials;
 - Inform how the resources are being accessed i.e. online via the Learntrain site, downloaded (i.e. onto CD or memory stick), or uploaded to a Virtual Learning Site (VLE);
 - Provide feedback on ease of access and use from teachers and learners;
 - Provide information on number of users within each sector who have accessed and/or continue to use the resources;
- Evaluate the strategic support for access to the resources;
 - Assess whether the activity has represented Value for Money;
 - Assess any impact on DELLS cross cutting themes;
 - Provide recommendations to continue to provide access to the NLN materials;
 - Demonstrate how access to the materials supports DELLS cross cutting themes.

Source: Invitation to Quote

No other access repository has been examined in detail during this research. The evaluation should not therefore be considered as a comparative assessment, but rather an assessment against its own aims, objectives and intended outcomes.

This evaluation has elements of 'looking back' at past activity, performance and impact. It also seeks to 'look forward' to identify the attributes and features required for a future access mechanism for the NLN materials.

⁵ Invitation to quote for the evaluation of Learntrain repository – DCELLS - 2007

2.2 Methodology and steps taken

In responding to the Invitation to Quote, the Consortium has developed an evaluation methodology based around five work packages (see figure 1 below). The key features and issues addressed by these stages are described below.

Figure 1. Evaluation approach

Methodological Approach

Aim	Evaluate effectiveness & impact of Leartrain access repository for NLN materials	
	Activities	Outputs
1. Project Inception	•Inception meeting	•Project plan •Documentation & contacts
2. Identification of Leartrain operating mode	•Desk review •Scoping interview	•Synthesis assessment
3. Expert usability assessment	•Review documentation •Expert group analysis •Synthesis report	•Web portal data analysis •Interim report
4. User/stakeholder views assessment	•Desk/web research •Tracking data review •Interviews & 'survey'	•User/stakeholder analysis
5. Conclusions and final reporting	•Internal project meeting •Report drafting	•Final evaluation report

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WP 1: Project Inception

The project began with an ***Inception meeting*** where methodological steps were agreed, key issues discussed and documentation sourced. A summary of the main action points was also agreed, and a note circulated to all parties.

WP 2: Identification of the Leartrain operational model

The Leartrain operational model was initially explored through ***documentary analysis***. Key desk research sources here include the Leartrain portal (www.learntrain.net), FAQ documentation and the Leartrain user manual (both at <http://www.learntrain.net/lscfaq/>). An internal document describing Leartrain's operating model was subsequently developed and used to inform the evaluation.

To further inform this desk review ***scoping discussions*** were carried out with key Welsh Assembly Government DCELLS staff, including Christine Major and Karen Ford⁶, as well as an interview and follow up discussions with the Leartrain development team – Opeus (Daniel O'Brien and Diane Plewinska). These interviews were designed to understand key issues for the evaluation, identify appropriate interviewees and documentation, as well as clarify Leartrain objectives and intended outcomes.

⁶ NGfL since August 2007

WP 3: Expert usability assessment

Usability experts commissioned by the Consortium conducted an **heuristic assessment of Learntain's usability**, using criteria developed by Molich and Nielsen⁷. This methodology is designed to identify a wide range of 'usability' issues including:

- Visibility of system status
- Match between system and the real world
- User control and freedom
- Consistency and standards
- Error prevention
- Recognition rather than recall
- Flexibility and efficiency of use
- Aesthetic and minimalist design
- User recognition, diagnosis, and recovery from errors
- Help and documentation

The usability assessment examined Learntain against three criteria - Frequency, Impact, and Persistence - using a scenario-based approach to the website. Here, the evaluators were presented with two scenarios of use, the 'Learner' and the 'Administrator'. The scenarios represent how the system is intended to be used. Using the 'ghost' account made available for the purpose of the evaluation, separate 'Learner' and 'Administrator' accounts were set up for the evaluators.

The evaluators were firstly asked to logon to Learntain as a 'Learner' and examined the interface against Nielsen's heuristics, exploring the different functions. They were asked to:

- search for NLN materials on 'Electrical Engineering' using the 'basic' and then the 'advanced' search'
- browse NLN material
- explore the folder options
- look at the help facility

The evaluators were then asked to logon as an 'Administrator' and examine the interface against Nielsen's heuristics, exploring the different functions: they were asked to:

⁷ Molich, R., and Nielsen, J. (1990). Improving a human-computer dialogue, *Communications of the ACM*, Vol. 33(3), pp. 338-348.

- add a new user
- explore 'organisation'
- explore 'browse' and 'folders'
- explore 'settings'
- explore 'Help'

WP 4: Stakeholder activity and views

The analysis of stakeholder views was based on a series of face-to-face interviews with organisations responsible for supporting NLN materials / Learntain use in key learning sectors. This included the JISC RSC (responsible for FE, ACL and WBL⁸) and NGfI Cymru (Schools). These interviews focused on understanding how the sectors are using Learntain, the nature of use amongst the different sectors and perceived strengths and drawbacks.

Further information on how the sectors are using Learntain was obtained from **Learntain's internal tracking data**. All the data available at the time of the evaluation (covering the period from November 2006 – June 2007) was processed to extract the following information:

- Breakdown of usage by type of organisation and type of user
- Daily and weekly usage of Learntain
- Leading users and NLN resources

Further analysis of the usage by a subset of top users was also undertaken. This analysis was particularly useful in identifying users for **follow-up interviews**. In this respect the top seven organisations (administrators) were interviewed (including FE, ACL, WBL and Schools organisations) to understand more accurately how they used Learntain.

The review of tracking data and interviews was further supported by a **user email consultation**. In this respect all users were invited to provide feedback about their usage of Learntain, the features they liked, and future improvements. Sixteen organisations responded to this email consultation.

WP 5: Conclusions and recommendations

The final workpackage drew together the main findings from the evaluation and subjected these to a structured process of internal brainstorming and development. This process also included a review of **Value for Money** and counterfactual issues. The draft results were then presented at an Interim Report meeting (20th July 2007). This was followed by the final meeting (17th August 2007), report and recommendations.

⁸ From August 2007 onwards.

3. Context and operation of Learntrain

The Learntrain access repository was developed by Opeus Technologies with funding from the Learning and Skills Council (LSC) and Nottinghamshire Training Network. Learntrain is an e-solution for materials and resources, and one of several portals enabling providers and learners to access NLN materials.

Learntrain became available in Wales in February 2006, and was implemented through a period of promotion and awareness raising. The current LSC contract with Opeus runs out in October 2007, and this evaluation is intended to support the decision for continued access to the NLN materials in Wales.

3.1 Key features

The Learntrain access repository, as noted above, is intended to provide access to, and easy use of, the NLN materials via a repository for all FEIs, Sixth Form schools, adult and community learning (ACL), voluntary and work-based learning sectors (WBL) in Wales.

Learntrain provides teachers and learners with an access platform for vocational materials. This includes some 900 hours of guided learning materials broken down in to short e-modules. Materials are split across 15 areas of learning, at levels 1,2 and 3, including some materials suitable for teacher training. The system can be tutor-driven or self-study and has a built in email facility and file store system allowing: personalised learning. The Materials can be accessed in a variety of ways, including: Online via the Learntrain site; downloaded (i.e. onto CD or memory stick); and uploaded to a Virtual Learning Site (VLE). Email and telephone support for Learntrain is provide by arrangements with the JISC RSC Wales (for FE, ACL and WBL).

The Learntrain portal's access to the NLN Materials, allows users to search for materials; browse materials; and send and group materials for users. The search function enables the user to conduct either a 'simple search' or an 'advanced search'. The 'simple search' function enables the user to type in a keyword or phrase. The advanced search facility reveals a list of all NLN Materials containing the search term or criteria in either the title or description. After making their selection the user can then choose whether to:

- Send to a user(s)
- Add to a new folder
- Add to an existing folder.

A user can also create a hyperlink if they wish to refer to the NLN material in another document or if they wish to send details of the module to another user.

The 'browse materials' function enables the user to view the NLN materials by subject category:

- Agriculture, Horticulture and Animal Care

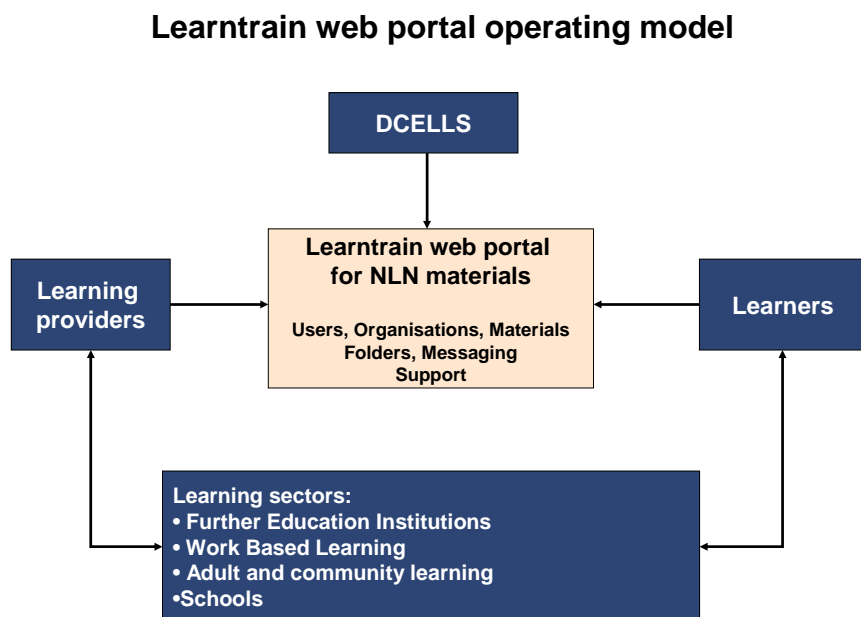
- Area Studies, Cultural Studies, Languages, Literature
- Arts and Crafts
- Business, Management, Office Studies
- Catering, Food, Leisure Services, Tourism
- Communication, Media, Publishing
- Construction And Property (Built Environment)
- Education, Training, Teaching
- Engineering
- Environment Protection, Energy, Cleansing, Security
- Family Care, Personal Development, Personal Care And Appearance
- Health Care, Medicine, Health And Safety
- Humanities (History, Archaeology, Religious Studies, Philosophy)
- Information Technology and Information
- Performing Arts
- Politics, Economics, Law, Social Sciences
- Science And Mathematics
- Sports Games and Recreation

The user can select the subject of their choice by clicking on one of the above subjects. For example, the 'engineering' option provides a choice between 'electrical engineering' and 'mechanical engineering'.

Learntain also allows users to create folders to store NLN materials. Folders can be edited and NLN materials can be added to or removed from a folder. Administrators can also send a folder to another user(s) or group of users.

A summary of the Learntain operational model is set out in figure 2 below.

Figure 2. Learntrain operational model



3.2 Promotion of Learntrain

Learntrain was initially rolled out at regional events across Wales. Initially this focused on the Further Education institutions, with funding from BECTA⁹. These events were lead by the ILT champions, and provided a presentation of Learntrain, practical demonstration and road testing, and a registration of organisations, including the dissemination the Materials on memory sticks/DVD/CD. A similar process has been pursued in other learning sectors such as WBL (workshop) and Schools (mailshot and workshop with LEA nominated link officers). The Learntrain website went 'live' in February 2006.

In many respects the FE sector was the most obvious and receptive sector in which to launch the materials / portal. It had experience of using the NLN materials via the CAT. It had also benefited from a period of sustained funding for ILT Champions. The challenge faced in generating usage of Learntrain has been greater in sectors such as the ACL, Schools and WBL sectors. In the case of the ACL sector for example, the significant number of community and voluntary organisations presents particular difficulties associated with the scale and diversity of the sector, as do potential deficiencies in technology and online access.

⁹ <http://www.becta.org.uk/>

3.3 Sector support for Learntain

In the initial phase of Learntain's roll-out the main support function was undertaken by BECTA, with support from the RSC. This role has now been fully distributed to the RSC Wales, in the case of FE, WBL and ACL. The support function for Schools (with sixth forms) is undertaken by NGfL Cymru.

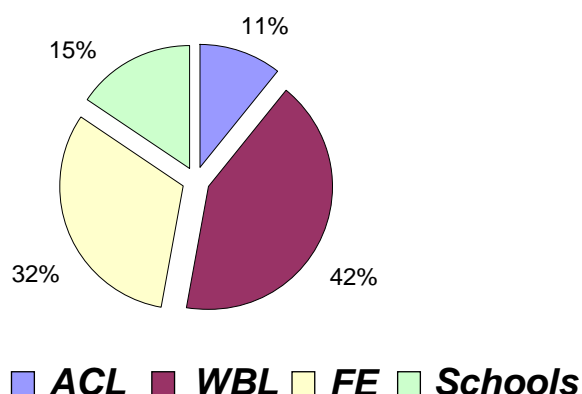
These organisations typically manage access permission to administrators within each learning provider. They also provide a point of contact (email and phone) with respect to other more technical queries – although in many cases such queries are forwarded on to Opeus.

4. Current Learntrain activity

4.1 User accounts

Learntrain, as noted above, has been in operation since 2006. A review of the tracking data collected by the system suggests that by July 2007 some 1,747 users had been registered, comprising some 127 organisations. Figure 3 below shows the breakdown of these users by sector. This indicates that WBL has the largest proportion of users registered (42%), followed by FE (32%). Schools and ACL are somewhat behind, at 15% and 11% respectively. These figures, in part, provide an indicator of the scale and success of the promotional activities undertaken in 2006.

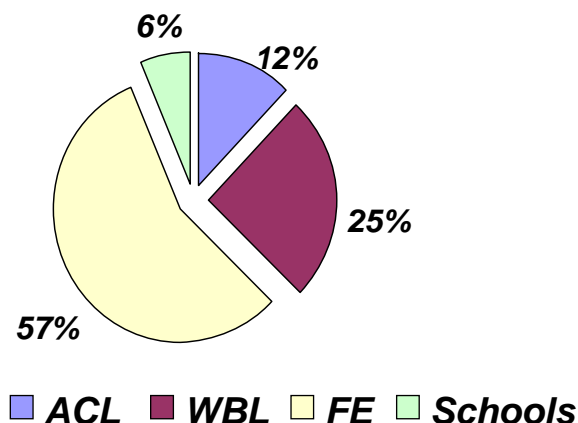
Figure 3. Users per learning sector



4.2 Logins

In terms of actual usage, defined by logins, figure 4 suggests that FE organisations, rather than WBL are the largest group. Here FE accounts for more than half of all connections to Learntrain. It should be noted, however, that many FE institutions use VLEs, to access the materials. In this respect interviews suggest that many FE institutions have downloaded the materials, via the CAT, and uploaded these to their VLEs. While such institutions are clearly accessing and using the materials, they are not doing this via Learntrain – and hence their usage does not ‘show’ in the tracking data. This is a similar scenario to that found in the ACL sector – where DVD/memory stick use of the Materials is common.

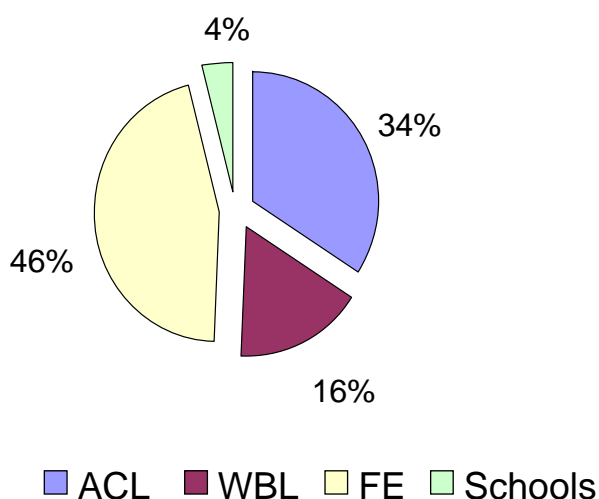
Figure 4. Login per sector



4.3 Access to materials

The tracking data also provides an indication of which sectors are actively using Learntrain – i.e. accessing and using the materials (via Learntrain). Here some 2,060 materials are available online. Figure 5 below suggests that the FE sector has been the leading sector. This is closely linked to the pre-existing e-learning activity within these institutions (ILT champions etc.). Interestingly, the ACL sector accounts for a relatively high proportion (34%) of material usage. Closer inspection of the tracking data, however, suggests that this is linked to two major ACL organisations - both of which have downloaded a large volume of materials via Learntrain.

Figure 5. Materials accessed per sector

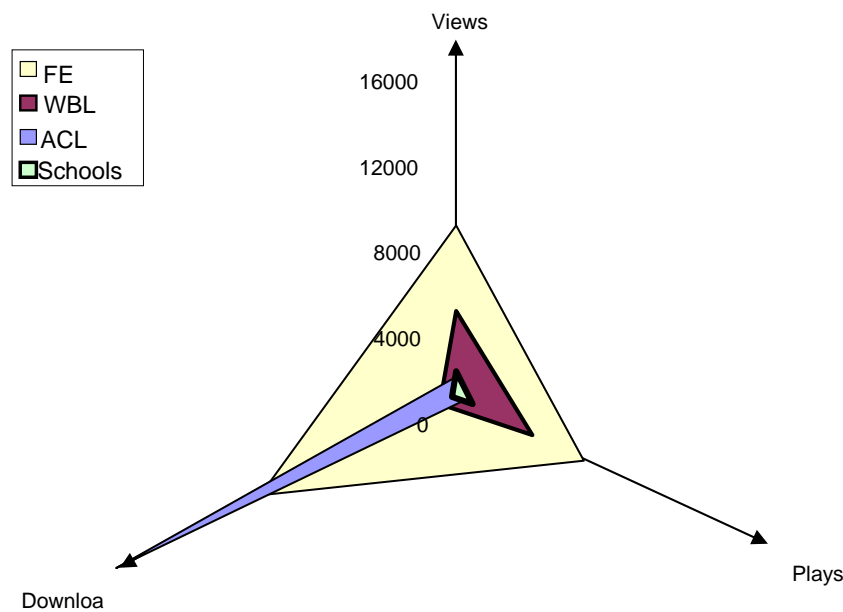


4.4 Type of access

The use of Learntrain can be analysed in more detail. Figure 6 on the following page highlights three main types of Learntrain usage: **View**, **Play** (where materials are used for more than 1.5 minutes), and **Download**. The surface of each triangle is representative of the actual usage of Learntrain in the sector. In this respect the FE sector is the strongest ‘all round’ user of Learntrain in the period concerned. FE

Institutions' usage patterns vary within the sector. Here, two providers (Coleg Glan Hafren and Ystrad Mynach College) appear to have downloaded a large volume of the materials. The ACL sector is also noteworthy, as its usage profile is heavily skewed towards downloads. This, as noted earlier, is linked to the intensive download activity of a number of ACL providers (Torfaen LEA and Communities@One). Elsewhere, the usage profile of WBL demonstrates a strong reliance on the online capabilities of Learntrain (indicated by the relatively small number of downloads). Schools usage, however, is limited across each of the categories of View, Play and Download.

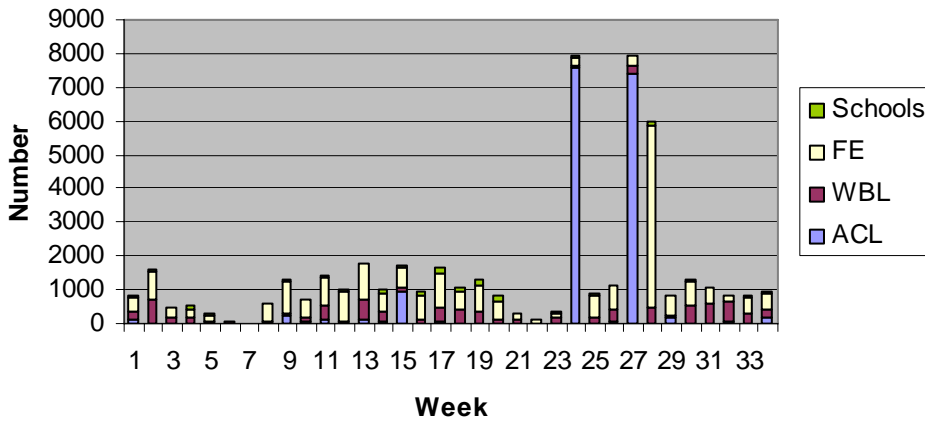
Figure 6. Breakdown per type of access and organisation



4.5 Usage over time

A further perspective can be gained by reviewing usage levels over time. Here figure 7 highlights usage levels per week, during the period November 2006 to June 2007. This indicates periods of relative inactivity (public holidays), as well as three episodes of intense activity (downloading) by organisations within the ACL and FE sectors. It also confirms the relatively strong use of Learntrain by the FE and WBL sectors in the period concerned.

Figure 7. Usage per week, per sector



5. Effectiveness and impact

5.1 Stakeholder and user assessment

Interviews and user email consultations were the primary fieldwork elements used to assess effectiveness and impact. The results, here, reveal a high degree of satisfaction with Learntrain. This is broadly evident in all sectors, across both the learners and administrators. It was also reflected in the fact that the JISC RSC Wales and NGfL ‘webmasters’ reported relatively few support requests.

The primary **strength** highlighted by such feedback is Learntrain’s ‘ease of use’. As one respondent put it: ‘Learntrain is beautifully simple to use and easy to download’. Such comments were echoed across all of the learning sectors reviewed:

- ‘Students who have used the resources have given positive feedback, in the main.’ [FE]
- ‘I find that the features on the system are easy to follow, clear instructions’ [WBL]
- ‘Learntrain is fast and easy to use and has some good resources’ [FE]
- ‘Overall a useful and very informative experience that nearly all candidates enjoyed using’ [WBL]

Such ease of use can also be helpful in those contexts where teachers lack IT literacy or confidence. Here, several administrators within the ACL sector noted that ‘...Learntrain gives learners, who have no previous experience their own, a learning area to develop their skills’ [WBL].

Other features praised by the users include the ability to access materials from any location, where there is an internet connection. In this respect a number of learning providers indicated that Learntrain was particularly useful in allowing learners to use the materials at home, at their own time and pace. This represents a high degree of flexibility in response to different learning needs. As one WBL respondent put it: ‘trainees who have used Learntrain enjoy it because it is interactive and they can browse and go through it at their own pace. It suits a variety of learning styles’.

Relative to the CAT (used in FE) Learntrain also allows users much greater flexibility to browse and search for Materials. As one FE respondent put it: ‘Learntrain will continue to enable users to search, browse and find suitable materials because it is so easy to use’. Other respondents, however, highlighted limitations in this function, and this perspective is picked up in more detail under ‘weaknesses’ below.

Learntrain’s perceived robustness was also noted as a strength. As one respondent put it ‘Learntrain doesn’t fall down’. Such comments were also made by FE respondents in relation to the CAT. Those who had experienced CAT were strongly critical of its instability. Other weaknesses of CAT, related to the inability to host multiple users and browse and search, as well as the high degree of IT skills required

by its users. In many respects Learntrain was developed to address these issues (interview with Dan Brown, Opeus).

Although users largely praise Learntrain, a number of **weaknesses** were also identified. In this respect it should be noted that these were often raised as areas for the potential development of Learntrain.

Administrator respondents from the FE sector argued that while Learntrain goes some way towards giving Colleges an understanding of usage levels and patterns, it does not provide detailed data on users' use of materials. This weakness was felt to significantly reduce its attractiveness and utility to the sector. Here the RSC Wales argued that FE institutions rely on such data to build funding cases and fulfil monitoring requirements.

A further weakness raised relates to the time consuming nature of registering new users. In a number of cases, for example, the length of time taken to register users appeared to have held back usage of Learntrain: As one respondent put it 'our previous attempt to use Learntrain back in 2006 failed partly due to the administrative burden placed on trainers setting up learner accounts' [WBL]'.

The search function provided by Learntrain was, as noted above, also seen as an area of weakness. In particular, the search function was felt by a number of respondents to be lacking in accuracy, and flexibility (for example, its inability to recognise nearest spelling – cf. Google).

The NLN materials themselves, while not the focus of the evaluation, were identified as a barrier to greater use of Learntrain. In particular, several interviewees in the Schools sector noted that the lack of Welsh language materials severely limited the utility of Learntrain in a Welsh Medium education context.

Finally, a number of 'context' weaknesses were raised by respondents. In particular, respondents from a number of different sectors reported limitations in their technological capacity, most notably PC access¹⁰:

- 'We still do not have PC access for all learners in the learning environment' [ACL]
- '...currently we don't use it to its full potential as we're just in the process of setting up a learning Centre with PC access for the employees' [WBL]

The importance of a broadband connection was similarly noted in this context. In a number of cases, for example, ACL and WBL respondents reported that slow connection speed severely limited the ability to use Learntrain / NLN materials within the classroom (slow page loading, for example). It should be noted, however, that these factors would be issues for any type of online e-learning repository.

¹⁰ Although, it should be noted that all Libraries in Wales have public access to the internet. In this respect the lack of access within particular learning environment, should be viewed in this context.

5.2 Expectations for the future and additional features

The interviews and email consultation responses reveal that both stakeholders and learning providers value Learntrain as an access repository to the NLN materials. It is also recognised, however, that Learntrain is in the early stages of roll out, with further awareness raising needed – particularly in the Schools and ACL sectors.

Stakeholder / user requirements for further development largely relate to the weaknesses identified above. This includes the need for refinement in existing functionality:

- Tracking capabilities – ability to track users’ use of materials
- User registration: ability to register multiple users
- Better authentication processes (Shibboleth)
- Search function – improvement in the accuracy of searches to allow for spelling correction
- Printing capability – providing a straightforward mechanism for printing out materials or customised workbooks

CMI’s discussions with Opeus suggest that these enhancements would, subject to funding, be relatively straightforward. With regards to tracking capabilities, for example, it was noted that the information needed to provide in-depth tracking of users was already embedded within the system, and could be made available with relatively minimal development effort. Similarly the challenge of allowing multiple users to be registered was one that had already been addressed informally. Here, Opeus indicated that they had loaded a number of learner ‘databases’ on behalf of learning providers. This process had used commercially available software programme – FormPrep. As this service was outside the LSC contract Opeus has not actively promoted it to Learning providers in Wales.

In addition to these administrator / user requests, discussions with Opeus also revealed a series of planned / potential enhancements (subject to additional funding being available). This includes:

- File store – allowing users to upload their own content. This functionality is currently available on the version of Learntrain in use in Nottinghamshire.
- Text alert function - Adding a text alert function telling users that a message has arrived for them in Learntrain.
- Enhanced DVD creation - improving the download process to allow fully functional DVD’s, with auto play and website-type navigation to be created. At present users are able to download content from Learntrain, but only in the form of Zip folders).
- Integration with Shibboleth technologies.
- Class blogger – integrating Opeus’ new ‘Class blogger’ software. This product allows the learners to develop their own eportfolios through blogging.

While it was clear that users would value refinements to Learntrain, it has not been possible to test out views on the additional functionality noted above. It should be recognised, however, that users primarily value its ease of use. This suggests that a note of caution should be retained when considering enhancements. Indeed one respondent argued that they would be concerned if Learntrain ‘became a VLE with discussion groups, [...] it would be too confusing. Keep it simple instead’.

5.3 Expert ‘heuristic’ assessment

To aid the assessment of effectiveness a heuristic evaluation of the Learntrain interface (Learner and Administrator) was undertaken. The purpose of a heuristic evaluation was to highlight potential problems with the interface. Detailed descriptions of the problems were provided to a panel of three Expert evaluators (see section 2 for more details of the approach taken). Detailed findings from this assessment can be found in the Annex. The key conclusions drawn, however, are that Learntrain is generally a sound platform, but one that could benefit from a number of areas of improvement.

Key areas in need of improvement are the level of support provided for the user in particular the:

- Help facilities
- Administrator interface
- User management functionality

For example, there is currently no **online help** available within Learntrain¹¹; the only option is for a user to email their problem to technical support. This leaves the user with no immediate solution to their question. Help should therefore extend beyond technical support, there should be information available on how to perform functions, how to use Learntrain. In this respect there is a general lack of information provided for the user on how interact with the interface and undertake tasks.

The **search facilities** in Learntrain were also identified as an area of weakness. The simple and advanced search both return so many results that they overwhelm the user. The Advanced Search should theoretically provide a more precise search facility, however this is limited by the fact that the ‘Partial’ and ‘Full’ search checkboxes may be checked together; and the ‘AND’ and ‘OR’ checkboxes may be checked together. Further areas for development identified concern the drop down menu on the search result screen. Here, these would potentially benefit from being at the top of the results screen as well as at the bottom, so the user doesn’t have to scroll down when there is a long list of results.

¹¹ A FAQ document is available at <http://www.learntrain.net/lscfaq/>. There is, however, no hyperlink to the FAQ document from the version of Learntrain in use in Wales.

The **user management functionality** and ease of use is a key area in the Administrator interface that is under developed. Currently each user has to be added or deleted individually, if administrators are dealing with hundreds of students this would be a time consuming task. Currently many administrators overcome this problem by issuing all students with the same user name and password.

Enabling students to access the NLN materials through a single account is relatively straightforward. It does not, however, allow tutors to tailor material for use by an individual student or **track how individual students are using the material**. The problem of ease of use of the user management functions extends to the creation of categories and organisations both of these functions were problematic for the evaluators and need to be fully reviewed and improved.

5.4 Value for money

Learntain, as noted above, was developed with funding from the LSC, with associated awareness raising funding through BECTA. As such the Welsh Assembly Government has not incurred clearly defined costs associated with implementing Learntain in Wales. A similar picture is also evident with respect to ongoing costs. Here technical support is the main area of potential cost. The reality, however, is that there has been limited demand for such support from Learners. This, as discussed, above, is largely related to Learntain's relative simplicity and ease of use, and has meant that little time (and cost) has been devoted to learner support.

When this minimal cost is balanced against Learntain's achievements in broadening out awareness and increasing usage of the NLN materials by teachers and learners across Wales, it is clear that Learntain represents good value for money to Wales. Furthermore, there is no other obvious mechanism that could have been employed to achieve this outputs, at a lower cost.

Moving forward Wales' funding arrangements for an NLN access repository will change significantly in October 2007. This date marks the end of the existing Learntain contract. At this point it is likely that more significant costs will be incurred – when Wales will seek to procure access to a repository for the NLN materials With the required level of functionality.

5.5 Policy contribution

Learntain's immediate objectives, as discussed above, are ones of providing access , or something similar for the post-16 education sector, to NLN materials via the internet. These materials have been provided in order to increase the uptake of Information Learning Technology across the learning and skills sector providing an access repository for the NLN materials. In this respect Learntain's contribution is primarily one of an 'enabler' – providing access, for a range of learning sectors, to e-learning content. From this perspective it can be seen to contribute towards a series of policy agendas.

At the highest level, for example, Learntain can be seen to address a number of key priorities within the Welsh Assembly Government's education and skills strategy

document: ***‘Learning Country: Vision into Action’***. This strategy highlights the problem of continuing low levels of skills and qualifications of working-age adults and skills shortages in certain key growth areas in the Welsh economy. It calls for improvements to be made to the overall quality of work-based and community learning, as well as a more appropriate range of courses within the provision of post-16 education and training in order to improve participation rates. In this respect Learntain and the vocational NLN Materials can be seen as a mechanism to address the skills issues identified by ‘Vision into Action’.

‘The Learning Country’ also outlines a number of existing areas of activity to which Learntain offers a potential contribution. These include: ‘...enabling learners and workforces to develop generic skills including basic skills... taking forward an improvement plan for work-based learning to improve the quality and range of provision... developing a strategy for community and adult learning... and developing vocational opportunities, teaching and learning resources, e-learning and video conferencing opportunities’. This highlights the evolving strategic context within which Learntain is operationally positioned.

Learntain also contributes towards plans to: ‘Drive up the quality of post-16 provision for work-based learning in partnership with Estyn, Ffwrwm, local authorities, the National Training Federation and the Association of Learning Providers’; and secondly to, ‘Apply the Provider Performance Review in further education, work-based learning and community learning to improve quality, raise standards and share best practice.’

Perhaps the key area of Learntain’s policy contribution lies in the ***‘e-learning strategy for Wales’***. Here, Learntain represents an important practical example of the Welsh Assembly Government’s e-learning policy, which seeks to ‘demonstrate excellence in Connectivity, Content, Confidence and Competence in the application of technology to learning’. The ‘e-learning strategy for Wales’ identifies a number of objectives based on the belief that it is necessary to combine the best in learning delivery with the intelligent application of technology. This approach aims to bring sustained drive, coherence and integration to developments and, ‘place effective learning development, distribution, delivery and access as central goals... facilitate an environment of innovation, experiment and application...’ These strategic objectives provide an important backdrop to the operating environment of the Learntain web portal as a key delivery mechanism for e-learning in Wales.

Learntain therefore constitutes an important contribution to the WAG’s efforts to improve e-learning support for the FE, WBL, Schools and ACL sectors through the intelligent application of technology to learning.

6. Conclusions and recommendations

In summary, this evaluation has focused on understanding the effectiveness and impact of the Learntain access repository. This has been undertaken to inform the requirements for a future access repository for the NLN materials in Wales. The broad findings from this research indicate that Learntain has been effective in terms of raising awareness of the NLN materials, and enabling access amongst a range of different sectors - some 1,747 user registrations from 127 organisations. For a large proportion of these users, this represents their first use of the NLN materials. Moreover, these users have largely praised Learntain in terms of its usability and general ease of use.

In assessing the impact of Learntain it is important, however, to recognise that it is largely an enabler of learning impacts. Here, it provides the mechanism by which learners can access the NLN materials. The true learning impacts of the Portal, however, will come when these materials are used by learners as part of their studies.

6.1 SWOT assessment

The main conclusions from this research are presented in the form of a summary of strengths, weaknesses, opportunities and threats (SWOT).

Strengths

Feedback obtained during this evaluation suggests that users perceive Learntain to be a highly effective access repository for the NLN materials. Key strengths noted include:

- ***Ease of use***

Learntain is perceived to be easy to use by its user communities. This is characterised by key functions such as the ability to view and search the materials online. The importance of such features is vital to those learning sectors that do not have access to advanced VLEs. The fact that users have been able to access the NLN materials with few reported difficulties¹² is also an important indicator of usability.

- ***Flexibility***

A further dimension of usability is Learntain's capacity to be used in a number of different Learning environments. A key feature, here, is the ability to access the NLN materials in any location that has a broadband connection. Such flexibility does not require a high degree of IT literacy. Learntain also allows flexibility in terms of the way that tutors manage access to materials. Here, the system allows tutors to save the NLN materials into custom folders and make these available to learners. Such

¹² As indicated by the feedback from the user email consultation, and the level of technical support queries reported by the RSC and NGfL Cymru.

features surpass the capabilities of previous NLN materials repositories such as CAT (as used by the FE sector).

- ***Robustness***

Ease of use was also indicated by the fact that Learntain rarely crashes. As a result Learntain is perceived to be a reliable and robust system. This is important in terms of giving both tutors and learners confidence that the NLN materials will be accessible when required. Again, such features are significant improvements on the previous CAT repository.

Weaknesses

While responses to the evaluation research are largely positive, a number of weaknesses are identified. These were primarily suggested as areas that could benefit from potential development, rather than as fundamental weaknesses in the system.

- ***Search function lacks accuracy and flexibility***

Perhaps the most important area for development noted is the Learntain search function. This currently produces large number of results, making it difficult to identify the most relevant results. Furthermore, Learntain does not cope well with incorrect spelling. In this respect Learntain was compared unfavorably with other types of web search technologies such as Google.

- ***Lack of detailed tracking data on use of materials by users***

Learntain currently provides administrators with a certain amount of data on the usage levels within their organisation (logins, logouts etc.). Feedback from the FE sector, however, suggests that this level of data is not particularly usable by the sector at present. In this respect Learntain is not maximizing its attractiveness to such sectors.

- ***Slow user registration process***

In many cases it is unlikely that administrators will have the time required to add a substantial group of new users. The results of the research suggest that this registration process is time consuming, and one that has the potential to act be a disincentive for use. It is understood that Opeus will upload the registration of multiple users if details are supplied on an Excel sheet or Access database. This, however, has not been published, as it is not part of the current contract.

- ***Limitations with NLN materials can act as a barrier to Learntain usage***

While the focus of this evaluation has been on Learntain as an access repository, rather than the NLN materials, the research suggests that the current lack of Welsh language materials is a barrier to wider use of the repository. This is particularly an issue for the Welsh medium schools sector, and one that NGfL Cymru are keen to address.

Opportunities

A number of opportunities flow directly from the weaknesses identified above. It will be important that these are addressed in future iterations of the repository. Further details can also be found in the recommendations (see section 6.2 in below).

▪ **User registration and tracking**

As noted above, the lack of refined tracking data is a potential barrier for greater usage within the FE sector. By making such data available FE institutions will, potentially, be able to use it as part of monitoring and funding applications – thus increasing the attractiveness of the repository relative to the VLEs that many such institutions use.

▪ **Search function**

Here, the findings noted above suggest clear opportunities to improve the quality of the search function and its results. This was a key weakness identified by the users, and therefore a clear opportunity for improving future iterations of the repository.

▪ **Authentication**

A further area of opportunity concerns current developments in authentication protocols within the FE sector. Consistency with new protocols such as Shibboleth, for example, was identified as a key area of need by the sector. Integrating this technology within the future access repository will therefore be vital to ensure continued use.

▪ **Awareness raising**

While much important work has been done in terms of raising awareness within the learning sectors, it is clear that there is further potential to reinforce the value of the repository. The schools sector, in particular, is one that recognises the need to continue with this activity. The opportunity exists, therefore, to tap into the new staff appointments at both the RSC and NGfL Cymru to ensure that the focus on the repository is maintained in each of the sectors.

▪ **Functional enhancements**

In the course of the evaluation a number of functional enhancements were discussed with Opeus. These included improvements in the indexing of downloaded NLN content, text alert functionality, and e-portfolio integration. As these were not available for review at the time of this evaluation it is not possible to provide further assessment. There is clearly an opportunity to enhance the functionality of the access repository. It will be important, however, that such opportunities are fully evaluated. Indeed, care should be taken to ensure that such opportunities do not damage the key success features of Learntrain – namely its simplicity and usability.

Threats

The evaluation has also identified threats to the further use of Learntrain, including:

- **Low IT literacy and confidence levels**

Here the research found evidence to suggest that tutors often feel less comfortable with IT skills, than the learners. This represents a potential threat towards the use of the repository, and suggests that current usage levels could peak in the near future, unless further efforts are taken to address this issue.

- **Poor access to ICT resources e.g. PCs and broadband**

A related IT threat was raised within the ACL sector. Here despite the fact that access to the internet is available via Wales' libraries, the lack of IT equipment and broadband access in many classrooms was felt to represent a key threat to greater use of Learntrain.

- **Maintaining the key success features of Learntrain**

The research has identified a number of potential functional enhancements. A key threat, therefore, is that these are not fully evaluated with a view to maintaining key success features of Learntrain – its simplicity and usability. This has the potential to damage the confidence of users.

6.2 Recommendations

Two broad areas of recommendation flow from the preceding analysis:

- Strategic recommendations – concerning the future strategic approach to an access repository for the NLN materials in Wales.
- Usability recommendations – concerning improvements to the functionality of Learntrain

Strategic recommendations:

R1: Access to the NLN materials should be maintained through a repository that embodies the success features of Learntrain.

The results of this research suggest that users (administrators and learners) value Learntrain as an access repository for the NLN materials. Features valued here include:

- Online access
- Browse and search functions
- Download and print functions
- Folders and grouping of materials

While the future access repository for the NLN materials is a question of competitive procurement, it will be important to ensure that the key success features identified in this evaluation are maintained. The main reason, here, is that much effort has gone into raising awareness and use of the repository. Users have responded positively to this process and the danger is that this initial enthusiasm is damaged.

R2: Efforts to raise awareness of the access repository are maintained across all sectors.

Alongside maintaining access it will also be important to continue the important task of raising awareness. Much work, as noted above, has gone into workshops, presentations and other activities. Interviews with stakeholder groups, however, suggest that awareness is to a certain extent an ongoing challenge. This is perhaps most evident in the Schools sector, where usage of Learntrain has yet to take off significantly. The appointment of the RSC Wales as webmasters for the ACL and WBL sectors (alongside their existing FE remit) is a positive move. Similarly, recent recruitment by NGfL are also likely to contribute to a heightened focus on the NLN materials amongst the post 16 sector.

R3: Consider the feasibility of enabling Welsh language accessibility to the access repository, and selected NLN materials.

Raising awareness of the repository and NLN materials, however, will increasingly face the question of the Welsh language. In this respect the proposed NGfL Cymru pilot to translate a sample of NLN materials into Welsh is important. While this is primarily a question for the materials (i.e. the language), it is clear that enabling access to the materials by all parts of the education sector in Wales, will help improve usage of Learntrain. Dependent on the results of this pilot exercise, and subsequent feasibility assessment, Welsh language NLN materials could be placed in the repository. This, of course, will require a bilingual repository.

R4: Care is taken to ensure that functional additions to the repository are carefully considered in light of usability features.

In further developing the access repository it will also be important to carefully consider future functionality. Here, a range of potential developments were raised during the fieldwork for this evaluation, both by users, and also the developers of Learntrain. While such developments may be attractive in their own right, it will be important, that they are considered as part of a systematic process of feasibility assessment. In particular, this should ensure that the fundamental success factors identified in this evaluation are not jeopardised.

Usability recommendations

While Learntrain was universally praised by its administrators and users a number of limitations were identified. These will not necessarily require significant development input, but it will be important to ensure that they are fully identified in the specifications developed as part of the next iteration of the repository (October 2007).

R5: The access repository should contain a sufficient level of instructional guidance to Learners

One of the more prominent limitations of Learntrain is its lack of help and contextual guidance. That is, users should be able to pass their cursor over an icon, and receive ‘what is this?’-type information). This was identified in the heuristic analysis (see Annex), as an area that potentially hampers the users’ experience of the repository. While such help and guidance should not replace the role of the tutor in briefing students, there will clearly be cases – particularly where learners use the repository outside of the classroom – where there will be a need for basic information such as a ‘what is this function’ and support for navigation around the site.

R6: The access repository should provide users with access to both email and FAQ support

The help function is also in need of development. This currently directs users to email a query to the webmaster. Responses are unlikely to be timely in this situation. Many such queries, however, could be better dealt with through FAQ-style support. In this respect the dedicated FAQ website could be hyperlinked to the Learntrain site in use in Wales.

R7: The ability to register multiple users should be built into future iterations of the access repository

Registration of users is a further area in need of development. A number of administrators, for example, noted the tedious and time consuming nature of the registration process as a barrier to use. It is understood, however, that the potential for multiple user registrations is available.

R8: The access repository should be consistent with federated access mechanisms such as Shibboleth

A related issue is that of consistency with new approaches to Federated Access (Shibboleth, for example). Learntrain will need to respond to such trends in future iterations, Learntrain, indeed the lack of such consistency will prove to be a barrier to use particularly in the FE sector.

R9: The availability of user level tracking data should be built into future iterations of the access repository

The requirement for user level monitoring data within Learntrain is particularly strong within the FE sector. This, it is understood, would increase the attractiveness of Learntrain, providing FE with valuable data on which to monitor learning activity within the student base.

R10: Future iterations of the access repository should provide users with enhanced search function accuracy

The ability to search the NLM materials effectively is a vital requirement identified by users. At present severe limitations exist with the usability of search returns, including an excessive number of results.

Annex

This is full draft of the Expert Heuristic report. We are currently editing this into the main body of the report. – Final edit to Follow

I. Heuristic evaluation

Introduction

Three evaluators undertook a heuristic evaluation of the Learntrain interface using a 'ghost account' set up for the purpose of the evaluation.

Heuristic evaluation is a method developed by Nielsen and Molich (1990) for finding usability problems in the design of a computer interface. The aim of the evaluation is to find usability problems in the existing interface and make recommendations for fixing the problems and improving usability. *'Usability is a fairly broad concept that basically refers to how easy it is for users to learn a system, how efficiently they can use it once they have learned it, and how pleasant it is to use'* (Mack and Nielsen, 1994).

The first issue raised by the evaluation team was the choice of browser that they should use to evaluate Learntrain. A number of differences in the site were identified using Microsoft Internet Explorer, Firefox and Safari (Mac). After consultation with Karen Ford it was decided that Microsoft Internet Explorer was the most commonly used browser in FE. Therefore, two of the evaluators were asked to evaluate Learntrain using Microsoft Internet Explorer and one was asked to evaluate Learntrain using Firefox.

The results from this exercise indicate that generally the interface is good; however there are clear areas where the interface can be improved. The detailed descriptions of problems that were identified, the conclusions and recommendations in this report inform the future development of Learntrain.

Approach and Methodology

Three evaluators experienced in interface design (see *section seven About the Evaluators*) have evaluated the Learntrain interface, referring to the set of usability heuristics developed by Nielsen (see *Appendix*). The evaluators produced a written log of their findings.

Scenario of Use

The evaluators were presented with two scenarios of use, the 'Learner' and the 'Administrator'. The scenarios represented how the system is intended to be used. Using the 'ghost' account made available for the purpose of the evaluation, separate 'Learner' and 'Administrator' accounts were set up for the evaluators.

The evaluators were firstly asked to logon to Learntrain as a 'Learner' and examined the interface against Nielsen's heuristics, exploring the different functions. They were asked to:

- search for NLN materials on 'Electrical Engineering' using the 'basic' and then the 'advanced' search'
- browse NLN material
- explore the folder options
- look at the help facility

The evaluators were then asked to logon as an 'Administrator' and examine the interface against Nielsen's heuristics, exploring the different functions: they were asked to:

- add a new user
- explore 'organisation'
- explore 'browse' and 'folders'
- explore 'settings'
- explore 'Help'

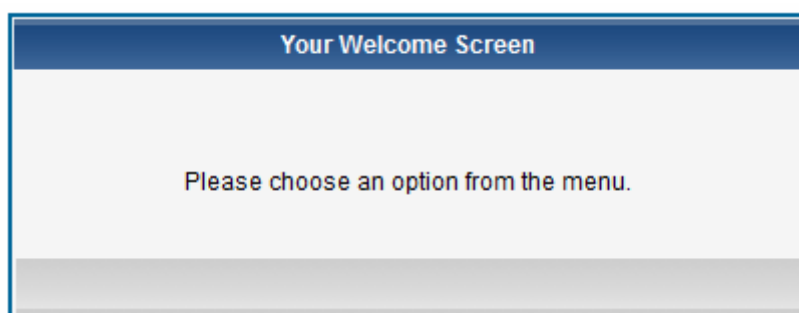
The Learner Interface

This section provides a description of the problems identified in the 'Learner' interface by the team of evaluators. The problems have been presented under headings indicating where they occurred in the interface. The headings represent the steps a user would follow, for example starting with the Welcome screen, moving on to look at the messages they may have received, and then searching for materials. A short description of issues raised and recommendations for possible improvements are presented.

Welcome Screen

The first screen the Learner experiences is the Welcome screen. The evaluators all indicated problems related to a lack of information provided for the Learner (what they should do next). For the interface to be useable it is critical that Learners should be clear about the actions they can take. A description of the problems the evaluators noted is shown below.

- 1) On the Welcome screen the box shows 'Please choose an option from the menu'.



However, the box shows no menu content. This may not be a typical occurrence in Learntain as users will often receive folders or messages from their tutor. In such situations the dialog box provides a clear choice to click on these items. In other cases, however, it is important that Learntain should direct users to click on one of the icons at the top of the screen.

- 2) From Welcome screen, there is no **search** option. It is not immediately clear where to begin interacting with the system (the icons that appear at the top of the Learner interface are shown below).



- 3) One of the evaluators commented: 'As a new user, I can see how to do things, but I have no idea what I'm supposed to be doing with the system. [This, however, is

unlikely to be a significant issue as 'real users' will typically receive training prior to use] e.g. What are 'Received folders'; how do I receive one? Does this mean I can send one?'

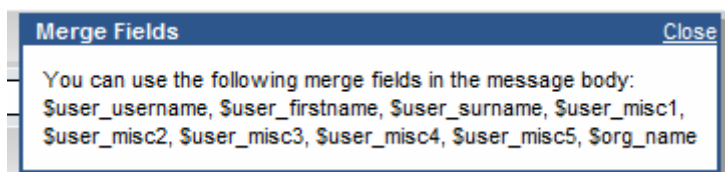
There needs to be more information for Learners, on what they can do and the actions they need to take to achieve a task. For example to search for NLN materials they first have to click on **Materials** and then **search**. There are two steps the Learner has to take to access materials.



Messages

1) The screen design should be clear and minimalist. The lines in the **Send message - Find User** Window continually change colour from dark grey to light grey as the cursor is moved over them. This has no apparent function.

2) If you click the **Merge Fields** it displays the message



This is a technical mechanism and could be confusing to the user.



Help

1) Help and documentation is one of the ten heuristics listed by Nielsen. All the evaluators highlighted that there was very little help available for Learntrain. The 'Help' button just sends a request to technical support. There is no general help (or FAQs) available on how to use the system. This was also a critical issue with the Administrator interface. It is, however, one that could be addressed relatively easily through a hyperlink through to the FAQ document available elsewhere on the Learntrain FAQ site.

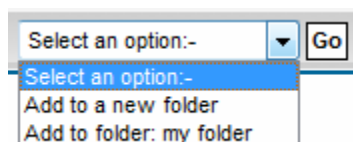


Materials

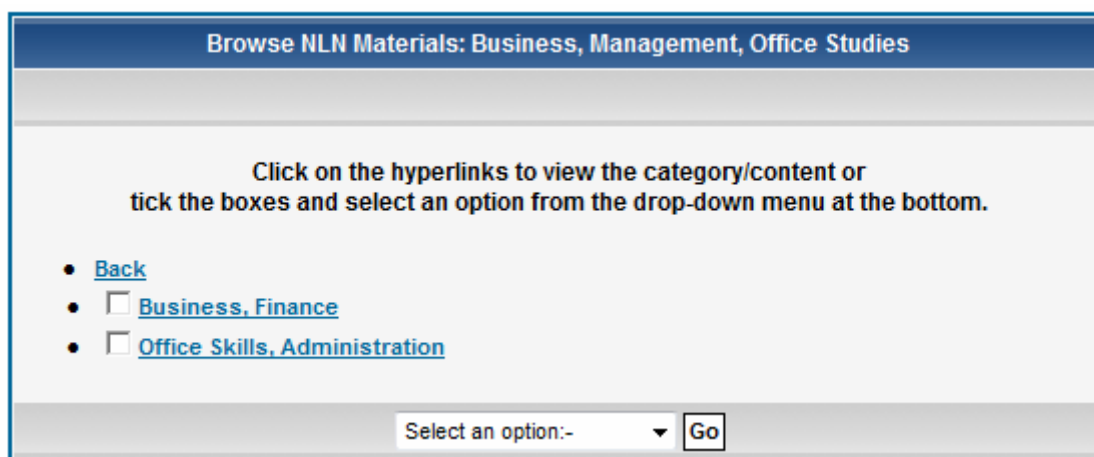
Simple Search

1) The length of the list of items returned from a simple search was highlighted by the evaluators, not all items were immediately relevant to the search subject (Electrical Engineering).

2) The evaluators raised the issue of the positioning of the drop down menu on the search results screen. The Learner has to scroll to the bottom of the page to see the menu.

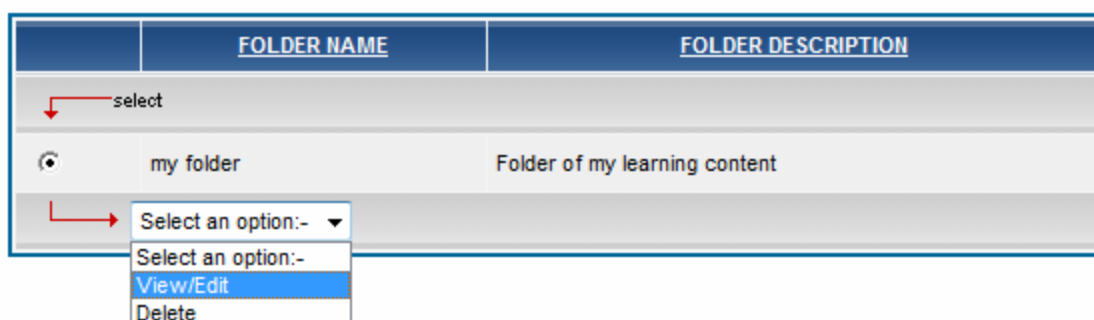


3) When you click through into a category, Back appears in the list. Back is a navigation function and should not be mixed with content items. In this respect back appears in the same font as the material. This should be distinguished as a means of navigation.



Folders

1) The folder list introduces an unnecessary step for opening it (select folder, then select action). A simple click on the folder name would be better, with a separate button to delete.



2) It is unclear that selecting a top-level category selects everything below it – this should be indicated through feedback on the page (checkboxes change). For example an evaluator selected the top level item 'Physics' in the search results and added it to their folder, this added the whole of 'Physics' not just the items returned in the search. This was not what the evaluator expected and had not been indicated.

3) Placing unusual characters in the folder name causes the name not to show up when you go in to **View/Edit**. This needs to be checked and other possible problematic characters investigated.

4) When folder names are used, they are in the same font, style etc as the main text. This makes it difficult for the user to check that they are deleting the correct folder.

5) There is no undo for the delete folder action. This could cause problems if the Learner deletes the wrong folder by mistake.

6) The creation of duplicate folders (same name and description) should not be allowed.

Advanced Search

Advanced Search

1) The **Advanced search** button is very small and could easily be missed by the users. It is also separate from the other search options which appear under **Materials**. **Advanced Search** should be made clearer or be presented as an option in the drop menu under **Materials**, so all search functions are in the same location.

2) A date in the calendar cannot be unset (i.e. deleted)

3) The default options for **Advanced search** returns a huge set of results. There should be a sensible default.

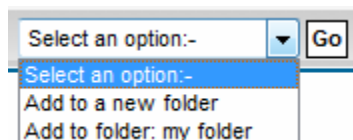
4) When a search returns no results, it doesn't tell you that, it simply shows the same page, so there is no feedback about whether the search has been performed or not.

5) Both the 'Partial' and 'Full' Search checkboxes may be checked together; both the 'AND' and 'OR' checkboxes may be checked together.

6) **Advanced Search** includes the option 'Search for materials released since...' However, it does not seem possible for the learner to see what date the materials were released.

Browse

1) Even though empty, there are items in the drop down menu to Add to a new Folder.



Download

1) Downloading the materials as a ZIP file is not user friendly [although technically it may be necessary]. For example, opening the ZIP file shows an index.htm but clicking on it opens a web browser window (Firefox was the browser used by the evaluator) that says 'File not found'. To use this file it is necessary to extract all the files first and then click on the extracted copy. This is not ideal, but it is understood that specific knowledge of file indexing software or the use of the Becta index tool would be needed to index all of the files selected. As a result this is likely to be beyond the capabilities of most basic users.

Log back in a after a timeout or after logging out

1) After a session timeout, the login screen reappears, but does not give any information about the timeout or reason for login. Re-login took the evaluator back to the search screen, but not the results they had found before the timeout.

2) The **Find User** option opens a separate window. If the window was not closed after use, all was well until the evaluator logged out (from the main window). When they then tried to use the Find User window, it asked for login details (ok) and logging in returned the evaluator to Find User (ok). However, the evaluators could not log in to Learntrain at all (in another browser window) as they always got a Find User window after login, instead of the Home Page. Closing all browser windows recovered the situation. This may, however, have been a browser-specific issues, and was only reported by the Expert using 'Firefox'.

General

There should be consistency to ensure the user gets the outcome they expect. There is not currently consistency in the way the icons respond when clicked. Clicking on an icon normally selects the top option in the menu. An exception is the **Folders icon**,

which takes the user to the **My existing** folder (second option of drop down list) rather than **Create new folder**, and the **Messages icon** which takes the user to **View messages** (second option of drop down list) rather than **Send message** which would be the top item.

The system should be efficient to use and this is an area where significant improvements can be made. After completing a function, the system displays a message saying the function has been completed and to choose an option from the menu. This is awkward if the user wishes to do more than one function of a similar type (e.g. reply to several messages) as the user must go through the menu to return to the same screen, maybe redoing a search to find relevant data.

The Administrator Interface

Download a folder

The evaluator attempted to download a folder, Internet Explorer warned them about a pop-up, when they clicked the yellow bar nothing happened. The evaluator had to repeat the operation. This may be an issue associated with the browser, but should be examined further.



User Management

- 1) The **User management screen** has the same problem as the **Folder list screen**: it requires selection of item then selection of action. For only two options this introduces an unnecessary extra step.
- 2) There is no way to select multiple users to perform an action (e.g. delete).
- 3) If you click Help when filling in a form, when you come back all the fields are empty.
- 4) Autofill for the address starts at line three.
- 5) There is no way to remove users other than by editing the text – so no way of checking against expanded user details, no way of easily removing multiple users.
- 6) It is not clear what 'organisation user name' is, and when it is used.
- 7) It is not clear what 'miscellaneous' is used for, e.g. can the field be searched?
- 8) The evaluator created two new groups in 'organisation', but then could not find an easy way to manage groups (e.g. the only way to assign users to groups was to edit each user separately).



1) Send to users: when selecting usernames, there is no running list of ones already added in the selection screen.

Conclusions

The three evaluators undertook a thorough heuristic evaluation of the Learntrain interface (Learner and Administrator). The purpose of a heuristic evaluation is to highlight potential problems with the interface. Detailed descriptions of the problems have been provided, the broad areas that need improvement are the level of support provided for the user in particular the Help and Search facilities and in the Administrator interface the User management functionality.

There is currently no online help available for Learntrain¹³, the only option is for a user to email their problem to technical support. This leaves the user with no immediate solution to their question. Help should extend beyond technical support, there should be information available on how to perform functions, how to use Learntrain. All the evaluators noted the lack of information provided for the user on how to interact with the interface and undertake tasks. Improving the information available to users and the help facilities should be a top priority for further development of the interface.

The search facilities in Learntrain were also highlighted by all the evaluators. The simple and advanced search both return so many results they overwhelm the user. The Advanced Search should provide a more precise search facility, however the 'Partial' and 'Full' search checkboxes may be checked together; and the 'AND' and 'OR' checkboxes may be checked together. The functionality of both the simple and advanced search should be reviewed and improved.

The user management functionality and ease of use is a key area in the Administrator interface that needs to be improved. Currently each user has to be added or deleted individually, if administrators are dealing with hundreds of students this would be a time consuming task. A number of administrators overcome this problem by issuing students with the same user name and password. This is linked to the level of support that organisations are able to provide to Learners. enables students to access the NLN materials but does not enable tutors to tailor material for use by an individual student or track how individual students are using the material.

¹³ Although there is a specific FAQ website that could be linked into Learntrain.

The problem of ease of use of the user management functions extends to the creation of categories and organisations both of these functions were problematic for the evaluators and need to be fully reviewed and improved. It would be a great enhancement if administrators could be enabled to easily upload large groups of users.

About the Evaluators

Mike Sharples is Professor of Learning Sciences and Director of the Learning Sciences Research Institute at the University of Nottingham. He has an international reputation for research in the design of learning technologies. He inaugurated the mLearn conference series and is Deputy Scientific Manager of the Kaleidoscope European 6th Framework Network of Excellence in Technology Enhanced Learning. His research projects include a collaboration with the Open University to develop personal technology to support inquiry science learning between home and school, MyArtSpace for mobile learning in museums and the L-Mo project with Sharp Laboratories of Europe to develop handheld technologies for language learning. He is author of 160 publications in the areas of interactive systems design, artificial intelligence and educational technology.

Paul Rudman is a researcher in Computer Science at Oxford Brookes University. His current project is the EU funded 'AtGentive', which investigates support for attention in educational software. He was previously part of the Equator project at the University of Glasgow which looked at combining tourists' perceptions of a city and its digital representation, and has worked on the MyArtSpace project, investigating mobile learning in museums. Paul has a doctorate in Educational Technology and a Masters degree in the human-centred design of technology.

Peter Lonsdale is a PhD research student at the University of Nottingham's Learning Sciences Research Institute. He has worked as a developer and consultant on a range of e-learning projects, including the EU MOBIlearn project exploring next generation mobile learning systems, and the MyArtSpace project looking at the use of mobile phones for learning in museums. He also worked as an e-learning developer at the National College for School Leadership in Nottingham, in the team responsible for maintaining and supporting their online learning management system. Peter has a Masters degree in the design of intelligent systems and human-computer interaction, and his PhD research centres on the development and evaluation of software to allow children to learn in physical spaces using location-based activities running on handheld computers.

II. References

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Nielsen, J. (1994b). Heuristic evaluation. In Nielsen, J., and Mack, R.L. (Eds.), *Usability Inspection Methods*, John Wiley & Sons, New York, NY.

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III. Research tools

Support organisation interview schedule (RSC, NGfL)

- What support is the organisation able to provide for Learntain users?
- What is the current level and nature of Learntain usage in the sector in Wales?
 - Within key categories – which are these?
 - What are current, which are historical?
- How is it currently being used by institutions and learners in this sector?
 - Current usage scenarios? Download, upload to VLE etc.
- What type of feedback is the organisation receiving on Learntain and its ease of access?
 - Monitoring data?
- What are its perceived strengths and weaknesses as a repository?
- Do the organisation see any issues or blockages in expanding the scope of Learntain usage to all sectors - FEIs, sixth form, ACL, voluntary and work based learning sectors?
 - What is the scope to overcome these?
- Can the current level of impact be sustained?

Developer interview (Opeus)

- Could you provide a brief explanation of the history of Opeus Technologies and the services it provides?
- What was the background to the Learntain portal?
- What sort of usability evaluation was conducted during the development phase?
- How was the Learntain portal developed?
- What are the objectives of Learntain?
- How does Learntain differ from its predecessor repository – CAT?
- What was the problem with CAT and how does Learntain address this?
- How does Learntain actually work? How are users informed of this?
- What is the procedure by which NLN materials are uploaded and accessed?
- What are its key features?
- How does the NTN version of Learntain differ to the Welsh version?
- Which user sectors were targeted by Learntain when it was introduced in Wales in 2006?

- What has been the take-up amongst the different sectors?
- Do they collect usage statistics or user feedback?
- On Wales? Different e-learning sectors?
- What mechanisms (if any) were put in place for collecting user feedback on access to and ease of use of NLN materials?
- To what extent would you say Learntain has succeeded in achieving its original objectives?
- What are its success factors – i.e. Things that it does particularly well?
- What future developments are planned / possible for Learntain?

User interviews

- Are you aware of Learntain?
- When did you hear about Learntain
- Have you used Learntain?
- If you haven't used it, why haven't you used it?
- How are the NLN materials used after they are downloaded?
- Who has used it? (which type of people within the organisation?)
- What are their specific needs?
- How do you anticipate it being used by your organisation in future?
- What are the features of Learntain you or your organisation liked/disliked?
- How does it compare to previous access mechanisms such as CAT?
- Are there any aspects you would like to be developed?

User consultation email

Dear Learntain user, the Welsh Assembly Government are currently conducting an evaluation of the Learntain access repository for the NLM Materials. The intention is to assess the effectiveness and impact of Learntain, and the future needs for an e-learning repository . We have commissioned a consultancy team lead by CM International to undertake this work, and they would be particularly interested in capturing your views on three areas of the system:

- i. How do you use Learntain? Do you view online, download to cd or memory stick, or if you are an administrator - upload to a virtual learning environment?
- ii. What are the features you like about the system?
- iii. Are there any areas where you would like to see Learntain developed?



I would be grateful if you could send me your views on these points by reply.
Alternatively you may wish to send comments direct to CM International. Please send any comments by the 27th July.

Thanks

Karen Ford

IV. Respondents

As part of this evaluation, CM International has conducted semi-structured interviews with:

- | | | | |
|------------------|---|------------------------|---------------------|
| ▪ Karen Ford | NGfL Cymru (formerly Welsh Assembly Government) | 29 th June: | Scoping interview |
| | | 3 rd July: | Usability interview |
| ▪ Pete Scott | JISC RSC | 4 th July: | Scoping interview |
| | | 25 th July: | Further interview |
| ▪ Esther Barratt | JISC RSC | 4 th July | |
| ▪ Ian Morgan | NGfL Cymru | 16 th July | |
| ▪ Dan O'Brien | Opeus | 16 th July | |
| ▪ Jill Evans | Torfaen LEA | 25 th July | (ACL) |
| ▪ Mark Davies | Communities@One | 30 th July | (ACL) |
| ▪ John Hughes | Hyfforddiant Mon | | (WBL) |
| ▪ Alan Jones | Merthyr Tydfil | 26 th July | (WBL) |
| ▪ Karen Coyle | Deeside College | 24 th July | (FE) |
| ▪ Steve Blight | College Menai | 24 th July | (FE) |
| ▪ David Newman | College GlanHafren | 26 th July | (FE) |
| ▪ Steve Roberts | Torfaen LEA | 25 th July | (Schools) |
| ▪ Evans Derek | Cynnal | 26 th July | (Schools) |