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Community Dimensions of Learning Object Repositories (CDLOR)



Deliverable 7 Report on Personal Resource Management Strategies

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Executive Summary

Introduction: This report is *Deliverable 7* of the CDLOR project: "Report on personal knowledge management review" (Workpackage 5). It summarises findings of a survey carried out in May-June 2006 in collaboration with RepoMMan, a parallel project in the JISC Digital Repositories Programme. The aim of the survey was to explore how individuals in teaching and learning communities find, create, store and share their educational resources and how they collaborate on the development of these resources with colleagues in their departments, subject area and beyond.

Methodology: The data was collected using an online survey (Appendix 2). The survey ran from April 25 to May 26, 2006. An invitation to complete the survey was emailed to teaching and learning communities nationally and internationally (see Methodology). In interpreting the survey results, it should be taken into consideration that the respondent group – albeit working across sectors and subject areas - represents rather specialist communities. Most are focused on learning technology and are, therefore, likely to have specific ways of sharing resources as compared with other teaching and learning communities.

The survey covered the following key aspects of personal resource management strategies that could have implications for the uptake and use of learning object repositories: sharing and storing "work-in-progress"; types of files and educational resources being created and shared; sharing, delivering and storing completed work; ownership of educational resources; and finding, selecting, reusing and repurposing resources. Because the survey focused on resource management strategies, further "use" of resources after they have been developed and delivered (including use by students) was not an aspect under investigation. The goal of the study was to explore what added value repositories might provide given stakeholders' current resource management practices.

Respondents: In total, 247 individuals filled out the survey. UK-based respondents comprise the largest group; there were international respondents from EU, USA, Australasia, Middle East, and South America. The largest groups of the respondents work in subject areas of Education, followed by Arts and Math and Computer Science. IT is the least represented. The spread across the other disciplines is relatively balanced. In terms of roles, teachers are the largest group, followed by learning technology support and researchers.

Key results:

Sharing and storing work-in-progress

A very high level of sharing work-in-progress was identified. No significant variation of sharing practices across subject disciplines was identified. Sharing takes place predominantly among colleagues in same department and same university. E-mail is the most popular method of sharing. Sharing by hand and via personal website are also used relatively frequently. There is only a very marginal use of repositories for this purpose.

Implication 1: Repositories could play a useful role in supporting collaboration on development of resources, although they don't appear to do so at present. Subject-based as well as institutional repositories could potentially be taken up more readily than other types of repositories.

For storing work-in-progress, university network and office PCs and laptops are the most popular locations. Repositories do not appear to be used for this at present. The reasons could be: a) repositories are viewed tools for sharing completed work rather than work-in-progress; and/or b) individuals may feel reluctant to expose incomplete resources in a public domain.

Implication 2: LORs should provide "safe" environments, for example with temporarily restricted access rights for specific groups of individuals or communities to share work-in-progress.

In terms of backing up work-in-progress, the most popular tools/environments are pen drives and university network. In terms of version control of work-in-progress, the most popular methods are indicating version and date in filename or document.

Implication 3: Version control mechanisms should be based on understanding of how stakeholders are currently working with different types of resources, what tools they are using, and how and with whom they are interacting within communities.

Types of files and educational resources stored and created

Most frequently stored file types are PowerPoint presentations, images, web pages, documents, and simple text. Most frequently created types of educational resources are PowerPoint presentations, resource lists, learning activities, and information resources.

Implication 4: These types of files and resources could be more readily shared or reused by potential LOR users.

Sharing, delivering and storing completed work

Completed work is even more widely shared than work-in-progress. It is predominantly made available via departmental, institutional or personal websites. A relatively large number of respondents utilise institutional, national or subject-specific repositories to share completed work.

For delivering completed resources to students, institutional VLE is the most popular medium. Displaying resources electronically in classroom, as well as distributing them in paper-based format are also popular ways of delivery. At present repositories do not appear to be used by students directly.

Implication 6: Repositories should be linked with VLEs.

Completed work tends to be stored primarily on university network and office computers. Pen drives and laptops are also popular locations for storing completed resources. Less people seem to back-up completed work as compared to work-in-progress.

Implication 7: This is an aspect where LORs could make useful contribution.

Ownership of educational resources

The majority of respondents perceive that copyright is owned by institutions rather than individuals.

Implication 8: Potential users might perceive that they wouldn't be free to distribute the resources outside institutions, e.g. via national or subject-specific repositories.

Reusing and repurposing resources

The majority collect materials developed by others when developing their own educational resources. They often repurpose these resources for their own use. Level of reuse of others' resources without modification, in contrast, is very low. Collected materials are mostly text-based resources, images, diagrams and URLs, and they are stored by course name or by keyword/tag, predominantly on home computer or laptop, office computer, and CD/DVDs or pen drives. Also, the majority tend to archive on computer all or some of these educational materials once the particular resource for which they were gathered has been delivered.

Reusing own materials without modification is less common than repurposing own resources. Most often reused educational resources are PowerPoint presentations, information resources, learning activities, images, and assessment materials. The least often reused resources are previously submitted work, blog/wiki postings, tables, feedback, simulations and games, problems, discussion forum postings, glossaries and equations, and FAQs.

Implication 9: These types of resources are likely to be more readily shared and reused by potential users of LORs.

Finding and selecting materials to reuse

Most popular strategies are search by subject keyword, by type and file format. Key resource selection criteria are recommendation by a trusted colleague and trustworthiness/reputability of the source where the materials are found.

Implication 10: Trust could be a major factor when selecting materials for potential repurposing or reuse.

Overall, this study contributes to a better understanding of the personal resource management strategies in some specialised teaching and learning communities and outlines areas where learning object repositories could potentially add value. However, it also raises more questions. Follow up qualitative studies are needed to develop a deeper understanding of these findings.

Introduction

The Community Dimensions of Learning Object Repositories (CDLOR) project is funded by the JISC to identify and analyse the barriers and enablers that influence uptake and implementation of Learning Object Repositories (LORs) within a range of different learning communities. To this end, CDLOR is working with a number of Associate and Collaborative Partners¹, all of whom have LORs in various stages of development in support of a wide range of communities and who will provide test-beds for CDLOR's work.

This report is *Deliverable 7* of the CDLOR project: "Report on personal knowledge management review".² The report is the main output of Workpackage 5 "Personal resource management context" (ibid, p.27). It summarises findings of a survey carried out by the CDLOR team in May-June 2006.

The survey was carried out in collaboration with RepoMMan³, a parallel project in the JISC Digital Repositories Programme. The University of Hull's RepoMMan project aims to develop a software tool that will enable researchers to use digital repository tools to support their investigations. Both projects are interested in investigating current personal resource management strategies and practices of potential repository users: researchers, teachers, educational developers, learning technologists, and support staff. The CDLOR/RepoMMan survey in particular is focused on the development of resources for teaching and learning. It is based on a previous RepoMMan survey, which explored research development process from inception of a research idea through to final publication (Green, 2005⁴).

The aim of this survey was to help determine how individuals find, create, store and share their educational resources and how they collaborate on the development of these resources with colleagues in their departments, institutions, subject area and beyond. For the purposes of this survey, 'educational resources' include anything that may be used in teaching and learning, e.g. simple information assets like images or video clips, assessments, lecture notes, PowerPoint slides, Flash files, learning activity designs, lesson plans, simulations, and so on.

Methodology

In this section, data collection procedures, respondents, data collection instrument and analysis procedures are described.

Data collection procedure

The data was collected using an online survey developed collaboratively by the CDLOR and RepoMMan teams (a detailed description of the survey is provided later in this section). The survey software was developed by Hull University e-Services Integration Group staff. The survey was made available via the University of Hull server and ran for a month, on April 25 to May 26, 2006.

An invitation to complete the survey was emailed to teaching and learning communities nationally and internationally. The invitation is attached in Appendix 1. Below is the list of communities that were contacted, with indication of the channels via which the invitations were sent:

¹ See: www.academy.gcal.ac.uk/cd-lor/partners.htm

² See CDLOR Project Plan (p. 6) at http://www.academy.gcal.ac.uk/cd-lor/archive/CDLORProjectPlan_v2p0_public.pdf

³ RepoMMan project <http://www.hull.ac.uk/esig/repomman/>

⁴ Green, R. (2005). *Report on research user requirements online survey*. JISC Deliverable R-D3. Retrieved June 15, 2006, from <http://www.hull.ac.uk/esig/repomman/documents/index.html>

1. University of Dundee in Scotland, UK: Staff of the Faculty of Education and Social Work (n=171) – via faculty mailing list
2. University of Twente in The Netherlands: Selected staff of the Faculty of Behavioural Sciences (formerly, Educational Science and Technology) (n=16) – via individual e-mails
3. Open University of the Netherlands: Selected staff of the Educational Technology Expertise Centre (n=3) – via individual e-mails
4. International Network for the Availability of Scientific Publications (INASP): Selected staff (n=1) – via an individual e-mail
5. University of Strathclyde: Individual emails sent to all staff of Centre of Academic Practice and Learning Enhancement (CAPLE), plus notice put on university staff portal, made available to all learning technology and teaching staff
6. Oxford Brookes University: Distributed to all staff on their Westminster Campus via newsletter.
7. COLEG team, who were asked to distribute it to their partner FE colleges.
8. CDLOR project Associate and Collaborative partners: All were asked to distribute to their own departments or universities (and any other communities they belong to) as they saw fit.
9. CDLOR Steering Group: ditto
10. CETIS Content Team: ditto
11. JISC Digital Repositories Programme Support Team: ditto
12. Email lists, including CETIS-Announce (covers all of the CETIS SIG lists), CETL-Repository, JISC-Development, JISC-PedVocab, LIS-CIGS, LIS-LINK, IFETS email list (IEEE International Forum of Educational Technology and Society). The email asked people to pass the survey on to any forums or communities they felt appropriate.

In interpreting the survey results, it should be taken into consideration that this is a rather specialist range of communities: most focus on learning technology and are, therefore, likely to have specific ways of sharing resources as compared with other teaching and learning communities.

To ensure a high response rate, contributors who included their name and e-mail address were entered for a prize draw: the first two names picked out received an Amazon voucher for £30 each. The prize draw took place in July 2006. Another strategy to increase the response rate was sending an e-mail reminder to all the lists and individuals on the morning of the last day of the survey.

Data collection instrument

A web-based questionnaire based on an existing RepoMMan questionnaire designed for a survey on research development process was used. The RepoMMan questionnaire was deemed to be a useful basis for this survey because it a) targeted issues similar to those that were the object of the CDLOR study and b) was already tested in another project. However, it was modified and extended in order to address issues specific to teaching and learning communities. A paper-based version of the questionnaire is attached in Appendix 2.

The questionnaire covers the following key aspects of personal resource management strategies that could have implications for the uptake and use of learning object repositories:

1. Practices related to **sharing “work-in-progress”**, including who such work-in-progress is shared with; what methods are used to share work-in-progress; and what methods are used to collaborate on work-in-progress with colleagues
2. Practices related to **storing work-in-progress**, including methods for version control; storage location, and practices and methods of backing up “work-in-progress”
3. **Types of files and educational resources** stored and created
4. Practices related to **sharing and delivering completed work**, including location where the completed work is made available, and methods for delivering resources to students

5. Practices related to **storing completed work**, including location of storing personal copies of completed work, and practices related to backing up completed resources
6. Perceptions related to **ownership of educational resources**
7. Practices related to **reusing and repurposing resources**, including own resources and those created by others, as well as types of resources being reused
8. Practices related to **finding materials to reuse** when developing educational resources, including searching methods and criteria for selection of potentially useful materials

General information about the respondents, including geographic location, subject area, and role within institution, was collected. Finally, the respondents were asked to comment on recent positive and negative developments in IT, as well as provide feedback on any other aspect of the survey.

We have chosen to focus on these particular aspects because our objective is to map the process of creating, storing, sharing and delivering learning materials, including specific types of materials being created, stored, shared and delivered by stakeholders as well as their interactions with other people. Because the survey focused on resource management strategies, further "use" of resources after they have been developed and delivered (including use by students) was not an aspect under investigation. The goal was to use these data in order to explore what affordances and added value repositories might provide given current practices of stakeholders in communities.

Thus, CDLOR acknowledges that this study covers only one aspect of the problem space. It does not take into account the ways in which repositories (and in particular, learning object repositories) might support use, adaptation and reuse of learning resources by learners and how these new practices might enhance learning.

Data analysis

The data was collated into an MS Access database and then exported into an Excel spreadsheet for processing. Unfortunately due to programming errors the following data was not recorded:

- Question 4a, looking at types of educational resources being created: Responses to the last component related to "web pages/web sites" were not recorded
- Question 10, looking at stakeholders' perceptions of their freedom to distribute educational resources outside their institutions: Responses were not recorded
- Question 11c, looking at systematic approaches to storing resources gathered from others: Responses were not recorded
- Question 15, looking at criteria for choosing potentially useful resources: Responses to the last two components, "positive reviews" and "close fit with own views" were not recorded

Responses to open-ended questions were grouped under emerging key themes and counted.

Respondents

In total, 247 individuals filled out the survey. Of these, 32 (13%) provided feedback anonymously.

Not all respondents addressed all survey questions. Nevertheless, it was decided not to discard the partially filled-out questionnaires as invalid, as for the purposes of this project they did provide useful information. In the Results section of this report, where the survey findings are summarised, the total number of respondents for each question will be specified.

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An overview of the respondents by geographic area, subject discipline and role is provided in Tables 1-3 below:

Table 1. Distribution of respondents (n=247), by geographic area

Responses	247	
England	151	61.1%
Scotland	39	15.8%
Wales	9	3.6%
Australasia	1	0.4%
N Ireland	0	0.0%
EU	11	4.5%
USA	18	7.3%
Other	18	7.3%

UK-based respondents comprise the largest group, 80.5 %. Notably, no responses from Northern Ireland were received, although the e-mail lists to which invitations were sent include members from that area. "Other" geographic areas and countries included Middle East (Lebanon, Israel), Asia (India, Japan), South America (Venezuela, Mexico), and Switzerland.

Table 2. Distribution of respondents (n=247), by subject area

Responses	247	
Arts	35	14.2%
Maths/computer science	34	13.8%
Sciences	11	4.5%
Health & medicine	13	5.3%
Social Science	19	7.7%
Education	78	31.6%
Business & management	14	5.7%
IT	9	3.6%
Cross-curricular	15	6.1%
Other	19	7.7%

As it can be seen, the largest groups of the respondents work in subject areas of Education (31.6%), followed by those in Arts (14.2%) and Math and Computer Science (13.8%). The spread across the other disciplines is relatively balanced. IT is the least represented (3.6%). To reiterate, when interpreting these figures it is worth remembering that they could be skewed by this group's focus on learning technology.

Table 3. Distribution of respondents (n=247), by roles

Responses	247	
Teaching	108	43.7%
Research	81	32.8%
Learning technology support	95	38.5%
Educational development support	65	26.3%
Staff development	61	24.7%
Library staff	45	18.2%
Other ⁵	23	9.3%

Teachers are the largest group (43.7%). As noted earlier, they may be a special group of teachers, i.e. those who teach learning technology. The next largest group are those in learning technology support roles (38.5%) as well as researchers (32.8%).

⁵ This category involves various combinations of these roles, as well as roles not covered by the above-mentioned categories

In interpreting these results, it is important to bear in mind that the respondents could choose multiple roles. Thus, for example while learning technology support staff are usually not involved in teaching (with exceptions), some of the respondents who identify primarily with research roles will also have teaching engagements within their institutions.

Results

In this section, findings for each question are summarised.

Question 1: When you are developing an educational resource, do you ever share your 'work-in-progress' for comment and/or collaboration?

Overall responses to this question are summarised in Table 4:

Table 4. Sharing work-in-progress

Responses	247	
Yes	215	87.0%
No	32	13.0%

In terms of our sample, development of educational resources appears to be largely a collaborative activity. However, 13% of respondents indicated that they do not share educational resources under development.

Is there variation in sharing practices across subject areas? Previous research has suggested that some disciplines might be more active in sharing and contributing resources while others might be more reluctant to do so (for example, see Andrew, 2003⁶; McGill et al, 2005⁷; Russel, 2005⁸). To answer this question, a closer analysis of the respondents that stated that they do not share work-in-progress was carried out. The analysis revealed the following distribution of responses in terms of the subject areas (note that the figures are shown as percentage of the total responses for each subject):

⁶ Andrew, Th. (2003). Trends in self-posting of research material online by academic staff. *Ariadne*, 37. Retrieved January 19, 2006, from <http://www.ariadne.ac.uk/issue37/andrew/intro.html>

⁷ McGill, L., Nicol, D., Littlejohn, A., Grierson, H., Juster, N., & Ion, W. (2005). Creating an information-rich learning environment to enhance design student learning: Challenges and approaches. *British Journal of Educational Technology*, 36(4), 629-642.

⁸ Russell, C. (2005). Disciplinary patterns in adoption of educational technologies. In J. Cook, & D. Whitelock (Eds.), *Exploring the frontiers of e-learning: Borders, outposts, and migration* (pp. 64-76). Proceedings of the ALT-C 2005 Conference, September 6-8, 2006, Manchester, England, UK.

Table 5. Distribution of those who do not share work-in-progress, by subject area:

Subject areas	Number of respondents who do not share work in progress (n=32)		Total responses (n=247)		Percentage of the total for each group
Arts	7	21.9%	35	14.2%	20.0%
Maths/comp	7	21.9%	34	13.8%	20.6%
Sciences	1	3.1%	11	4.5%	9.1%
Health & medicine	1	3.1%	13	5.3%	7.7%
Social Science	3	9.4%	19	7.7%	15.8%
Education	9	28.1%	78	31.6%	11.5%
Business & management	2	6.3%	14	5.7%	14.3%
IT	0	0.0%	9	3.6%	0.0%
Cross-curricular	1	3.1%	15	6.1%	6.6%
Other	1	3.1%	19	7.7%	5.3%

No variation is observed across disciplines; this dynamic reflects the overall distribution of respondents by subject area (see Table 2).

Question 1a: Who do you share your 'work-in-progress with?

In this question, multiple choices were possible hence the percentages do not add up to 100. The responses are summarised in Table 6:

Table 6. Who is work-in-progress shared with? ⁹

Responses	245	
a. Departmental colleagues	196	80.0%
b. Colleagues in wider University	81	33.1%
c. Contacts in other UK educational organisations	56	22.9%
d. A UK funding agency	9	3.7%
e. Contacts in educational organisations overseas	11	4.5%
f. Contacts in other overseas organisations (non-educational)	29	11.8%
g. A non-UK funding agency	9	3.7%
Other (end user/client)	3	1.2%

As it can be seen, sharing work-in-progress occurs predominantly locally: among departmental colleagues (80%), colleagues in wider university (33.1%) as well as other UK institutions (22.9%). These findings are consistent with those from the previous studies by the JISC-funded RepoMMan¹⁰ and WM-Share¹¹ projects.

⁹ In retrospect, we acknowledge that the wording of options c, d, and g in this question may have distorted the results, because they are UK-centric, while the survey was distributed internationally. The options would have been more inclusive had they been phrased as follows: (c) "Contacts in other educational institutions in your country"; (d) "A funding agency in your country"; (g) "A funding agency outside your country".

¹⁰ Green, R. (2005). *Report on research user requirements online survey*. JISC Deliverable R-D3. Retrieved June 15, 2006, from

<http://www.hull.ac.uk/esig/repomman/documents/index.html>

¹¹ Bell, V, & Rothery, A. (n.d.). *E-sharing: Developing use of e-repositories and e-libraries for learning and teaching*. JISC Deliverable. Retrieved June 15, 2006, from

<http://www2.worc.ac.uk/wm-share>

Question 1b: What methods do you use to share your work-in-progress?

Here as well multiple choices were possible hence the percentages do not add up to 100. The responses are summarised in Table 7:

Table 7. Methods of sharing work-in-progress

Responses	247	
Email	186	75.3%
Personal website	66	26.7%
Conventional post	8	3.2%
By hand	67	27.1%
Other, including:		
Network	21	8.5%
Website, wiki, blog	24	9.7%
Meetings	15	6.1%
Web conferencing	5	2.0%
VLE	19	7.7%
Repository	3	1.2%
CD/DVD/USB	1	0.4%

E-mail clearly is the preferred medium of sharing (75.3%). Sharing by hand is also common (27.1%), as is sharing via personal websites (26.7%). A range of other media appear to be utilised as well, of which notable is the use of wikis and blogs (by 9.7% of respondents), intranet (by 8.5%) and VLEs (by 7.7%). Repositories do not appear to be used much for sharing work-in-progress (1.2%).

Question 1c: How do your colleagues comment or collaborate on the work?

Methods of commenting and collaborating are summarised in Table 8:

Table 8. Methods of commenting and collaborating on work-in-progress

Responses	247	
Face-to-face	176	71.3%
Separate document	60	24.3%
Simple text insert	104	42.1%
Track changes etc	108	43.7%
Other, including:		
Email	27	10.9%
Phone	4	1.6%
wiki	11	4.5%
blog	1	0.4%
Skype	2	0.8%
Messenger	3	1.2%
VLE	1	0.4%

Meeting face-to-face appears to be the most popular method of collaborating on resources (71.3%). Collaborating on a document electronically is also popular: 43.7% of respondents use some sort of automated collaboration feature, and 42.1% simply insert text in the same document.

Comparing these results with the findings of Question 1b, it is interesting to note that while resources seem to be shared primarily through e-mail (see Table 7), further collaboration and commentary occurs mainly face-to-face, with e-mail used only by 10.9% of the respondents. However, it is not clear how the comments made electronically (e.g. via "separate document",

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 “simple text insert”, “track changes” etc.) are then delivered to the original author, given that so few seem to use e-mail or other electronic tools or data carriers to collaborate or exchange comments.

Question 2: Keeping track of the latest version of the educational resource you are developing could be important whether or not you share it with others. How do you manage version control?

In this question, all options except “I don’t” were non-exclusive, i.e. the respondents could choose more than one option. Findings related to current practices of version control are summarised in Table 9:

Table 9. Version control practices

Responses	247	
I don't	33	13.4%
Computer system date	28	11.3%
Date in filename or document	67	27.1%
Version in filename or document	84	34.0%
Other tag in filename or document	41	16.6%
Folders	6	2.4%
Version control system	12	4.9%

Notably, 13.4% of respondents do not seem to utilise any version control method or system. This is almost twice as many as in the previously mentioned parallel study by the RepoMMan project, which focused on researchers (7%). Could this mean that researchers in general tend to approach version control in a more systematic way than other groups of stakeholders?

To probe this, we analysed version control approaches among those respondents who had indicated “research” either as their primary role or one of their roles. The results of this analysis are summarised in Table 10:

Table 10. Version control practices among researchers and stakeholders whose roles involve research (n=81)

Responses	81	
I don't	14	17.3%
Computer system date	7	8.6%
Date in filename or document	26	32.1%
Version in filename or document	27	33.3%
Other tag in filename or document	17	21.0%
Folders	4	4.9%
Version control system	1	1.2%

Comparing Tables 9 and 10, it appears that the patterns of version control among stakeholders with research roles are similar to approaches utilised by other groups of stakeholders. Thus, perhaps the reason is not that researchers as a stakeholder group have a preference for version control but that version control could be practiced more in the research development process as opposed to the teaching and learning resource development process.

Question 3: Your educational resource 'works-in-progress' will be stored in one or more places during the period that you are developing them. Which of the following are places that you might normally store working versions (as distinct from backups)?

Responses to this question (which, similar to the previous questions, allowed non-exclusive choices) are summarised in Table 11:

Table 11. Storage locations for working versions of educational resources

Responses	247	
Home desktop	84	34.0%
Laptop	105	42.5%
Office computer	112	45.3%
University network	170	68.8%
CD/DVD	50	20.2%
Floppy disk	13	5.3%
Other:		
External drive	8	3.2%
Personal web space	11	4.5%
Shared workspace/VLE/VRE	2	0.8%
Email attachments	7	2.8%
Jorum	1	0.4%
Network	4	1.6%
Wiki	3	1.2%
USB stick/pen drive	51	20.6%

University network is the most popular place for storing work-in-progress (68.8%). Office desktop and laptop computer are also widely used (45.3% and 42.5% respectively). Also, pen drives and CDs/DVDs are notably popular storage devices. As to repositories, they do not appear to be used for storage of working versions of resources: only one respondent mentioned Jorum.

Question 4: To help us understand the type(s) of file .that you store as parts of your 'works-in-progress' please drag each of these cards to the appropriate category heading.

Next, we investigated what specific types of files are stored. Choices included document files (.doc, .rtf, .pdf, etc.), images, audio, video, spreadsheets, presentations (.ppt), web pages, interactions (Flash, Java, etc.) and so on. The options were presented as cards. The respondents were requested to sort the cards on a Likert-type 4-point scale (frequently-sometimes-rarely-never). The findings are shown in Figure 1:

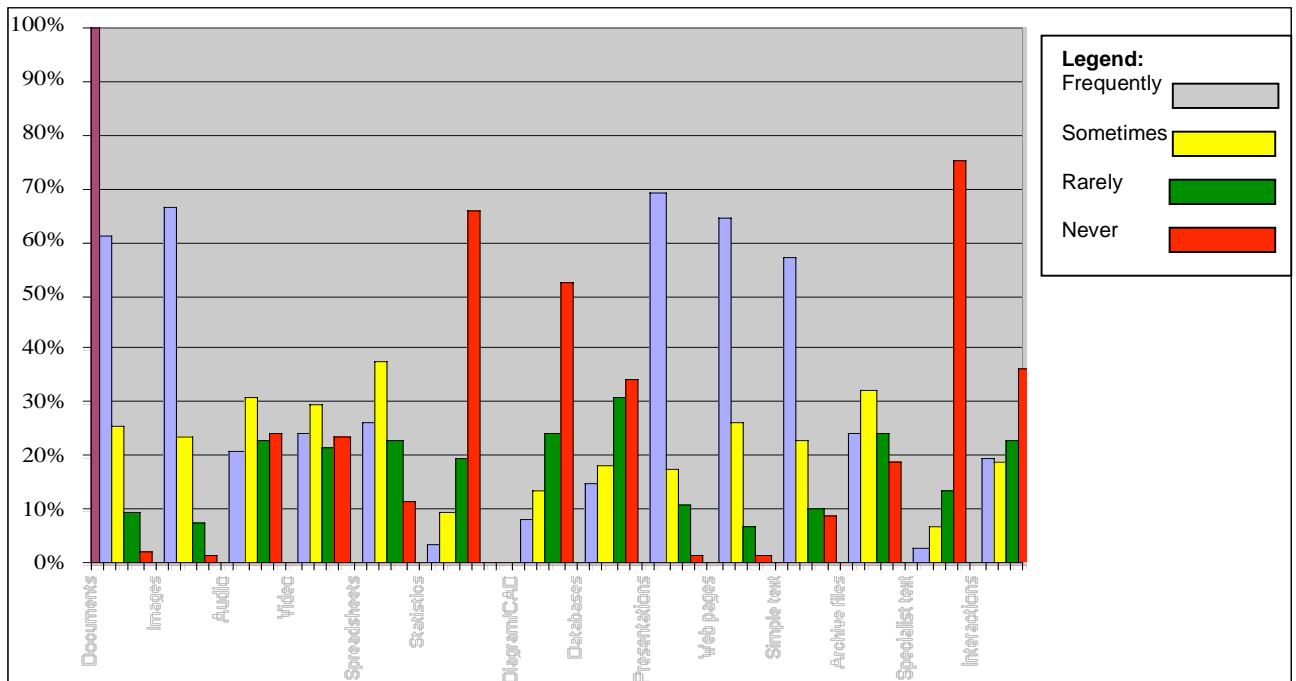


Figure 1. Types of files being stored

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The three types of files being stored most frequently are PowerPoint presentations (69.2%), images (66.4%), and web pages (64.4%). Document and simple text files are also frequently used (61.1% and 57.1% respectively). Predictably, files of specialist formats – such as specialist text formats (LaTEX), spreadsheets from SPSS statistic package, diagrams or CADs - are the least frequently used. The overall rankings are shown in Table 12:

Table 12. Types of files being stored: Overall ranking (from most frequently to least frequently stored)

Types of files being stored	Ranking
Presentations	1
Images	2
Web pages	3
Documents	4
Simple text files	5
Spreadsheets	6
Video	7
Archive files	8
Audio	9
Interactions	10
Databases	11
Diagrams or CAD	12
Statistics	13
Specialist text	14

This result could have been influenced by the specificity of the respondent group within this survey. For example, if there were more engineers represented, would documents and similar text-based resources have been less popular?

These findings differ from those of the RepoMMan survey, where document files were found to be the most frequently stored types (93%). This could be due to the nature of research practice, the focus of the RepoMMan study, although one would expect that files such as data sets, stats and CAD would also be extensively shared among researchers.

Question 4a: To help us understand the type(s) of educational resource(s) that you create, please drag each of these cards to the appropriate category heading

As in the previous question, a range of types of educational resources were listed on cards, which the respondents were to sort according to the frequency of use. Due to a programming error, responses to the last category – web pages/web sites – were not recorded. The findings are shown in Figure 2:

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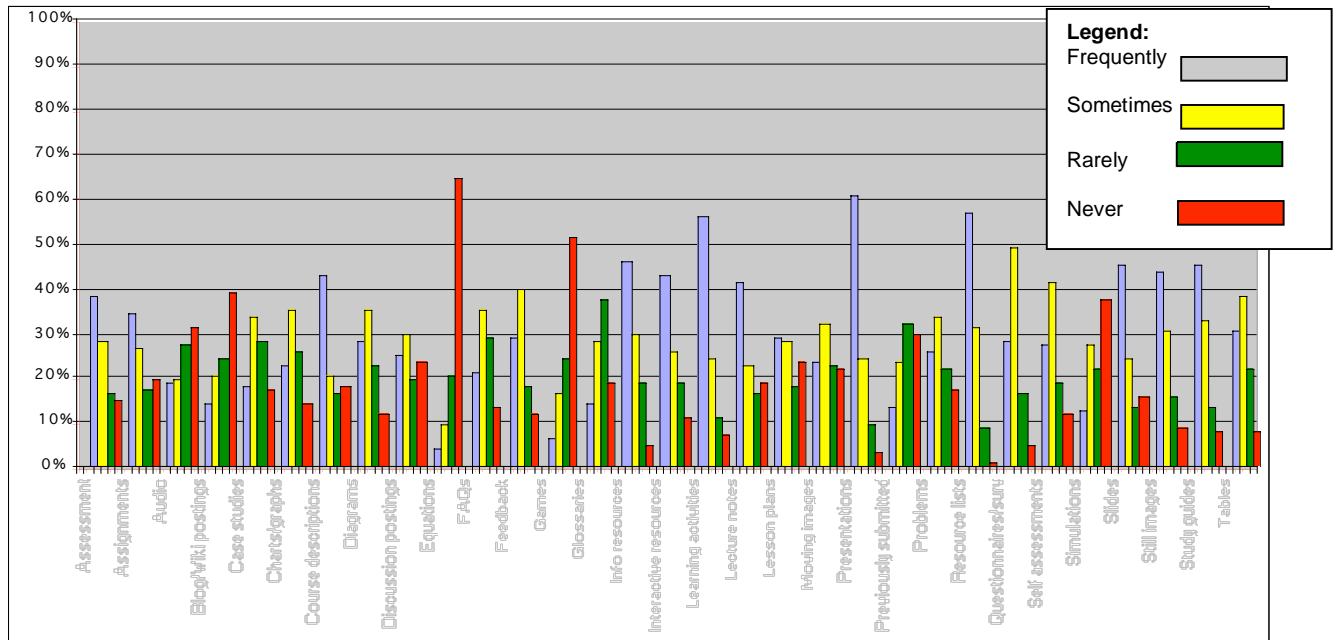


Figure 2. Types of educational resources being created

The three most frequently created types of resources are PowerPoint presentations (61.1%), resource lists such as bibliographies and web link collections (57.5%), and learning activities (56.3%). Also popular are information resources such as articles and book chapters (46.2%), slides (45.7%) and study guides (45.3%). The overall rankings are shown in Table 13:

Table 13. Types of educational resources being created: Overall ranking (from most frequently to least frequently created)

Types of resources being created	Ranking
Presentations	1
Resource lists	2
Learning activities	3
Info resources	4
Slides	5
Study guides	6
Still images	7
Interactive resources	8
Course descriptions & announcements	9
Lecture notes	10
Assessment materials	11
Assignments	12
Tables	13
Lesson plans	14
Feedback	14
Diagrams	15
Questionnaires/surveys	16
Self assessments	17
Problems	18
Discussions from postings	19
Moving images	20
Charts/graphs	21
FAQs	22
Audio	23
Case studies	24

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Blog or Wiki postings	25
Glossaries	26
Previously submitted work	27
Simulations	28
Games	29
Equations	30

Some of these results are consistent with the findings of the previously mentioned WM-Share project survey. In that study, the most popular types of resources were documents (96.9%), PowerPoint presentations (80.8%), and images (63.1%).

Question 5: Do you keep your own backups of 'work-in-progress' files and, if so, where?

In this question, all options except "I don't" were non-exclusive. The results are summarised in Table 14:

Table 14. Practices related to backing-up work-in-progress

Responses	247	
I don't	19	7.7%
Same computer drive as original	60	24.3%
Different drive to original	61	24.7%
Another computer	60	24.3%
Network	123	49.8%
CD/DVD	70	28.3%
USB etc	125	50.6%
Floppy disk	8	3.2%
Other:		
VLE	2	0.8%
Web	6	2.4%
Backup	8	3.2%
Email	4	1.6%
Wiki	1	0.4%

It appears that 92.3% of respondents use some strategy or a combination of strategies for backing-up work-in-progress. Pen drives, used by 50.6% of respondents, as well as university network, used by 49.8%, are the most popular media for this activity.

Question 6: Do you share your completed educational resources with others (apart from the students you deliver them to in teaching)?

Current practices related to sharing completed resources were investigated. The overall findings are summarised in Table 15:

Table 15. Practices related to sharing completed resources

Responses	247	
Yes	226	91.5%
No	21	8.5%

It is probably not surprising that completed resources –similar to work-in-progress - are extensively shared. However, completed work appears to be more readily shared than work-in progress (87% and 91.5% respectively).

Question 6a: Where do you make your completed work available to others?

Similar to previous questions, the options in this question were non-exclusive. The findings are summarised in Table 16:

Table 16. Practices related to making completed work available to others

Responses	247	
Subject website	18	7.3%
Institutional main website	55	22.3%
Institutional repository	48	19.4%
National repository	17	6.9%
Subject- or discipline- repository	29	11.7%
Departmental or project website	82	33.2%
Personal website	57	23.1%
Other:		
VLE	29	11.7%
Email	13	5.3%
Shared space	18	7.3%
Wiki	2	0.8%
CD/DVD/USB	6	2.4%
Blog	3	1.2%

These findings reflect the “local” nature of resource sharing practices (see Table 6). Given that sharing occurs mostly with colleagues in the department, it is not surprising that resources are made available to others most often via departmental or project website. Institutional and personal websites are also relatively popular. These results are consistent with a previous study by “Rights and Rewards in Blended Institutional Repositories” project: their findings showed that “...the number of people willing to share within their institution is high yet sharing outside of this is unpopular” (Bates et al., 2006, p. 7¹²). This study also showed (potential) users’ preference for subject-based rather than general repositories (ibid, p. 9-10).

It is not clear, however, what, in the perception of the respondents, the difference is between an institutional website and a personal website. For example, if a ‘personal’ website is located on institution’s server, is it personal or institutional?

Notable is the number of people who make completed resources available to others via institutional, national or subject-specific repositories. This relatively more frequent use of repositories for sharing completed work than sharing work-in-progress could be interpreted as individuals being in general less comfortable with “going public” with resources under development. It may also be explained by the fact that repositories of teaching and learning resources are not yet set up to handle or support sharing of works in progress. They are in general seen as storage areas or showcases for completed works.

Question 6b: How do you deliver your educational resources to the students?

Next, we investigated how the completed resources are being made available to students, who are the end users. The results are shown in Table 17 (all options are non-exclusive):

¹² Bates, M., Loddington, S., Manuel, S., & Oppenheim, C. (2006). *Rights and Rewards project academic survey: Final report*. JISC, UK.

Table 17. Practices related to making completed resources available to students

Responses	247	
Institutional VLE	176	71.3%
Departmental VLE	21	8.5%
Personal website	49	19.8%
Classroom (in paper-based format)	84	34.0%
Classroom (electronically displayed)	136	55.1%
Classroom (computer lab)	72	29.1%
Other:		
CD/DVD/USB	2	0.8%
Shared space	6	2.4%
Departmental/course website	11	4.5%
Print (distance)	1	0.4%
Blog	2	0.8%
Wiki	1	0.4%
Newsgroups	1	0.4%

Institutional VLEs are clearly the most popular medium for delivering educational resources to the students (71.3%). The second most popular way of delivering resources is by displaying them electronically in classroom. Given the popularity of PowerPoint presentations-based educational resources (Figure 2), these findings are hardly surprising. Notably, distributing resources in paper-based format is still relatively popular.

Question 6c: When making educational resources available electronically, do you upload them to the delivery mechanism (VLE, website) or do you link to them at some external location?

Table 18. Current practices related to electronic distribution of resources

Responses	247	
Upload	108	43.7%
Link	12	4.9%
Both	127	51.4%

The majority of the respondents (51.4%) both upload resources to the delivery mechanism and link them to an external location.

Question 7: Where do you keep your personal copies of completed educational resources?

Storage of personal copies of completed resources was investigated. All options, except the first, were non-exclusive. The results are summarised in Table 19:

Table 19. Storage locations for completed resources

Responses	242	
I don't	19	7.9%
Paper only	6	2.5%
Home desktop	58	24.0%
Laptop	74	30.6%
Office computer	100	41.3%
University network	115	47.5%
VLE	68	28.1%
CD/DVD	68	28.1%
USB etc	76	31.4%
Floppy disk	5	2.1%
Other:		
External drive	11	4.5%
Web space	8	3.3%
Print	7	2.9%

University network, office computers, pen drives and laptops are the most popular locations/devices for storing completed educational resources. Comparison of results in Tables 19 and 11 shows that preferences as to the storage devices/locations appear to be very similar in case of storing both work-in-progress and completed resources. Repositories were not mentioned, perhaps because they are not seen as personal spaces.

These results differ from those of the previously mentioned "Rights and Rewards" study: in the latter, VLEs featured more prominently – 53.5% of their respondents appear to use VLEs as the main storage location for their teaching resources vs. 10% who use repositories for this purpose.

Question 8: Do you keep backups of your completed educational resources in addition to the completed versions that we dealt with in the last question?

The results are shown in Table 20:

Table 20. Practices related to backing up completed resources

Responses	247	
Yes	162	65.6%
No	85	34.4%

In comparison with practices related to backing up work-in-progress (Table 14), it appears that many more respondents do not back-up completed work (34.4% vs. 7.7%). This could be explained by the finding that completed work is usually stored in multiple locations (see Table 19) and therefore formally backing up the resources is not deemed to be necessary. However, if there is no formal location to store back-ups of resources this could be problematic long-term. This could be another area repositories could contribute to.

Question 9: Who, from the following, owns the copyright to the educational resources you have developed in the past two years?

Perceptions related to ownership of educational resources were investigated. The findings are summarised in Table 21 (all options except the first one were non-exclusive):

Table 21. Perceptions of ownership of resources

Responses	247	
I don't know	43	17.4%
My publisher(s)	1	0.4%
My grant provider(s)	1	0.4%
My institution	154	62.3%
Another institution	2	0.8%
I do	51	20.6%

The majority of respondents indicate that copyright of their educational resources is owned by their institutions. A relatively large proportion (20.6%), believe that they own the copyright, which could be incorrect, at least in the UK. Notable is the proportion of those who didn't know who owned the resources created by them (17.4%).

Question 10: Do you believe that you would be free to distribute your educational resources through channels outside your institution, such as via a national or subject-based repository, or a personal blog?

As mentioned earlier, responses to this question were not recorded due to a programming error.

Question 11: During development of educational resources, do you have your own collection of digital material gathered from people and sources elsewhere?

An important issue to explore in relation to potential uptake of repositories is current practices related to reusing/repurposing materials during development of educational resources. The next 14 questions aim to address various aspects of such reuse/repurposing. The overall findings are summarised in Table 22:

Table 22. Gathering materials from people and sources elsewhere

Responses	247	
Yes	171	69.2%
No	76	30.8%

While the majority of respondents do collect resources developed by others, a relatively large proportion – 30.8%- do not. This is not to suggest that the collected resources are necessarily reused or repurposed; it could also mean that people tend to consult/explore others' work when developing their own resources.

Question 11a: What sort of material do you gather?

Types of materials being collected are summarised in Table 23 (some respondents indicated more than one option):

Table 23. Types of gathered materials

Bookmarks	51	29.8%
Images and diagrams	60	35.1%
Text	79	46.2%
Interactive	11	6.4%
Video	16	9.4%
Audio	14	8.2%
Assessments	1	0.6%
Study Guides	1	0.6%
Presentations	16	9.4%
Data	2	1.2%

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Text-based resources, images and diagrams, as well as URLs seem to be the most popular types of materials being gathered during the resource development stage.

Question 11b: Where do you store this material?

Table 24. Locations where gathered materials are stored

(Office) PC	47	27.5%
Home or laptop	52	30.4%
Web	13	7.6%
CD/DVD/USB	25	14.6%
External drive	7	4.1%
VLE	4	2.3%
Floppy	1	0.6%

Gathered materials are stored in a range of locations, the most popular of which are home computer or laptop, office computer, and CD/DVD or pen drives.

Question 11c: Would you say that it is stored in a structured way?

As mentioned earlier, responses to this question were not recorded due to a programming error. However, from the answers to the question 11d it could be inferred that 77 respondents store resources in a structured way. The exact proportions cannot be inferred though, as the total number of respondents to this question was not recorded.

Question 11d: If you answered “yes” to the previous question, how do you structure the stored material?

A range of approaches to structuring personal collections of gathered materials have been identified, as shown in Table 25:

Table 25. Methods of structuring stored materials

By course name	32	41.6%
By year	6	7.8%
By semester	3	3.9%
By keyword or tag	28	36.4%
By age	1	1.3%
Alphabetically	7	9.1%
Other	24	31.2%

The materials are structured mostly by course name (41.6%) and keyword or tag (36.4%). 31.2% indicated that they used other methods of structuring stored materials. It is unclear what these methods are as none of the respondents specified them.

In retrospect, it might have been useful to have ‘type of teaching/pedagogic approach’ as an option: for example, some may store problem-based learning type resources together.

Question 12: Do you keep on computer all or some of the educational materials mentioned in the last question once the particular resource for which they were gathered has been delivered?

Is there a tendency to store the resources gathered during the development stage for future use? As appears from Table 26, most respondents do archive these resources:

Table 26. Longer-terms storage of materials gathered from people and sources elsewhere

Responses	247	
Yes	182	74%
No	65	26%

Question 13: In the last year, what proportion of the educational resources you have developed were created from scratch?

Table 27. Resources created from scratch

Responses	247	
None	11	4.5%
Less than half	98	39.7%
More than half	124	50.2%
All	14	5.7%

As the findings show, resources are often created completely from scratch. In a few cases, they are based on some existing materials. Whether these existing materials are repurposed from own or others' materials, is investigated in Questions 13a and 13b below.

Question 13a: In the last year, what proportion of the educational resources you have developed have been repurposed from your own existing materials (i.e. you have changed or edited your own materials)?

Table 28. Proportion of resources repurposed from own existing materials

Responses	247	
None	13	5.3%
Less than half	119	48.2%
More than half	109	44.1%
All	6	2.4%

94.7% of respondents indicated that in developing educational resources, they repurpose their own materials. Interestingly, this response does not tie in with the response to the previous question, i.e. that the resources are mostly created from scratch. The reason for this discrepancy is unclear. Perhaps it is rooted in respondents' perception of what it means to create resources "from scratch"?

What is the picture in terms of repurposing materials created by others? This is shown in Table 29 below.

Question 13b. In the last year, what proportion of the educational resources you have developed have been repurposed from materials created by others (i.e. you have changed or edited others' materials)?

Table 29. Proportion of resources repurposed from others

Responses	247	
None	59	23.9%
Less than half	155	62.8%
More than half	27	10.9%
All	6	2.4%

As it can be seen, more than 70% of respondents indicated that they do, to some extent, repurpose resources created by others.

Question 13c: In the last year, what proportion of the educational resources you have delivered have been materials created by others, reused by you as is?

Table 30. Proportion of resources reused from others without modification (i.e. not repurposed)

Responses	247	
None	128	51.8%
Less than half	100	40.5%
More than half	17	6.9%
All	2	0.8%

The findings are indicative of very low levels of reuse of resources created by others.

Question 13d: In the last year, what proportion of the educational resources you have delivered have been materials previously created by you, reused as is?

Table 31. Proportion of resources reused from self

Responses	247	
None	50	20.2%
Less than half	128	51.8%
More than half	62	25.1%
All	7	2.8%

In contrast to reuse from others, reuse of own materials appears to be common: 79.8% indicated that they reuse materials previously created by them. Is this because it is easier to repurpose one's own materials? Is it related to IPR? Or are one's own materials just more available and familiar?

Furthermore, comparison of Tables 31 and 28 shows that reusing own materials is less common than repurposing them. It would be interesting to investigate the underlying reasons for this discrepancy.

Question 14: When you look for materials to use when developing educational resources, how do you search for such materials?

Resource search strategies are summarised in Table 32 (all options are non-exclusive).

Table 32. Search strategies

Responses	247	
Subject keyword	209	84.6%
Author	48	19.4%
Format	53	21.5%
Type	67	27.1%
Date	28	11.3%

Search by subject keyword appears to be the most popular strategy; searching by type and format are also relatively popular.

Question 15: When you find materials you could potentially use when developing educational resources, by what criteria do you select such materials?

A range of criteria could be utilised to assess the suitability of materials. The findings are shown in Figure 3:

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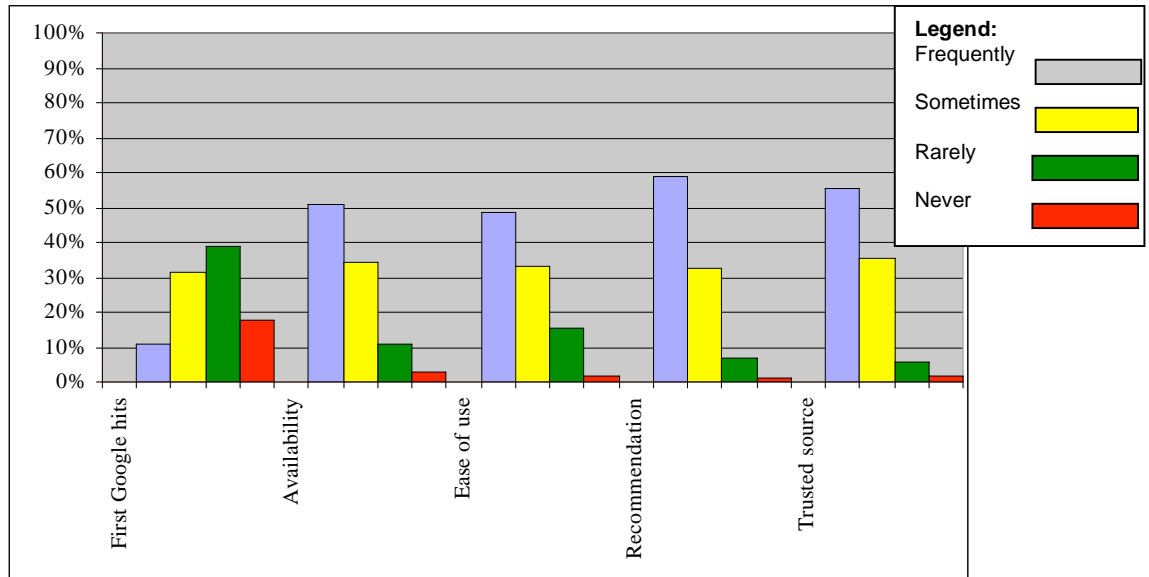


Figure 3. Criteria for selection of materials (n=244)

With the most popular criteria being recommendation by a colleague (58.6%) and reputability of the source (55.7%), trust appears to be a major factor when selecting materials for repurposing or reuse. Copyright too appears to be a major consideration when materials are selected.

Question 16: What type(s) of educational resources do you most often reuse?

Table 33. Types of reused resources (all options are non-exclusive, arranged in order of descending ranking)

Responses	238		Ranking
Presentations	151	63.40%	1
Information resources	133	55.90%	2
Web pages	133	55.90%	2
Learning activities	120	50.40%	3
Still images	113	47.50%	4
Assessment materials	108	45.40%	5
Resource lists	107	45.00%	6
Assignments	94	39.50%	7
Interactive resources	92	38.70%	8
Moving images	89	37.40%	9
Diagrams	87	36.60%	10
Questionnaires/surveys	81	34.00%	11
Case studies	80	33.60%	12
Slides	75	31.50%	13
Lecture notes	75	31.50%	13
Self-assessments	68	28.60%	14
Study guides	66	27.70%	15
Lesson plans	63	26.50%	16
Course descriptions/announcements	61	25.60%	17
Audio	56	23.50%	18
Charts/graphs	54	22.70%	19
Other: FAQs	45	18.90%	20
Glossaries	43	18.10%	21
Other: Equations	43	18.10%	21

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Discussion forum postings	41	17.20%	22
Problems	37	15.50%	23
Simulations	32	13.40%	24
Other: Games	32	13.40%	24
Other: Feedback	31	13.00%	25
Tables	30	12.60%	26
Blog or wiki postings	29	12.20%	27
Previously submitted work	21	8.80%	28

PowerPoint presentations, information resources (articles, book chapters), learning activities, images, and assessment materials are the five most frequently reused types of educational resources. Least often reused are previously submitted work, blog/wiki postings, tables, feedback, simulations and games, problems, discussion forum postings, glossaries and equations, and FAQs. Comparing these results with those in Figure 2 (types of resources being created), it appears that almost the same types of resources tend to be reused. This comparison is shown in Table 34:

Table 34. Rankings of types of resources being created and types of resources being reused

Types of resources	Overall ranking in terms of creation	Overall ranking in terms of reuse
Assessment materials	11	5
Assignments	12	7
Audio	23	18
Blog or Wiki postings	25	27
Case studies	24	12
Charts/graphs	21	19
Course descriptions & announcements	9	17
Diagrams	15	10
Discussions forum postings	19	22
Equations	30	21
FAQs	22	20
Feedback	14	25
Games	29	24
Glossaries	26	21
Info resources	4	2
Interactive resources	8	8
Learning activities	3	3
Lecture notes	10	13
Lesson plans	14	16
Moving images	20	9
Presentations	1	1
Previously submitted work	27	28
Problems	18	23
Resource lists	2	6
Questionnaires/surveys	16	11
Self assessments	17	14
Simulations	28	24
Slides	5	13
Still images	7	4
Study guides	6	15
Tables	13	26

Question 17: What, if any, developments in IT over the last two or three years have helped you in your teaching - and how?

66.9% of respondents commented on this question. Responses were grouped around the following main themes, shown in Table 35:

Table 35. IT developments that have been helpful in teaching

Responses	165	
Internet	12	7.3%
On-line resources	20	12.1%
Search tools	11	6.7%
USB devices	11	6.7%
Collaboration/sharing/email	11	6.7%
Specialist software	48	29.1%
Audio/video adv	0	0.0%
Mobility	0	0.0%
Wireless/Bluetooth	6	3.6%
Broadband	8	4.8%
VLE/Collaborative environments	47	28.5%
Computer power	7	4.2%
Blogs	15	9.1%
Wikis	7	4.2%
Open source software	6	3.6%
Easy/cheap storage	7	4.2%
Conferencing	4	2.4%
Falling cost of technology	4	2.4%
Classroom technology	16	9.7%
Better training/advice	6	3.6%
Support staff	4	2.4%

Various specialist software, VLEs and collaborative environments were identified as the most helpful IT innovations for teaching. Online resources, blogs and internet were also recognised as positive developments. Repositories were not mentioned, possibly because they are in the early stages of development and thus are not yet on the radar of teaching and learning communities.

Question 18: What frustrations, if any, do you have in your teaching work that you feel IT ought to be able to help with now, or in the near future?

56.7% of respondents addressed this question. As in the previous question, responses were grouped around main themes (Table 36):

Table 36. Frustrating aspects of IT

Responses	140	
Online training	4	2.9%
Bandwidth/speed	6	4.3%
Hardware reliability	2	1.4%
Limitations of technologies	9	6.4%
Systems reliability	17	12.1%
Poor/outdated facilities	10	7.1%
Easier access	19	13.6%
VLE (usually WebCT)	22	15.7%
Cost (no money)	1	0.7%
Time (lack of)	8	5.7%
IPR/copyright	10	7.1%
Interoperability (lack of)	16	11.4%
One-stop resources (lack of)	2	1.4%

The most frustrating aspects were VLEs (particularly WebCT was often mentioned), accessibility, systems reliability, and lack of interoperability. Interestingly, in the previous question VLEs were identified as one of the most positive IT developments. Again, repositories were not mentioned.

Other comments

Finally, a number of general comments were made by 17% of the respondents. These, too, were grouped around key themes (Table 37):

Table 37. General comments

Responses	43	
“Thank you” notes	7	16.3%
Clarification of answers (e.g. specifying roles or previous experiences with technology)	9	20.9%
Requests for a copy of survey results	7	16.3%
Suggestions for improvement of the survey	18	41.9%
Positive comments on the survey	2	4.6%

Discussion

In this section, the survey findings are discussed with respect to the key aspects of personal resource management strategies utilised in the process of development of educational resources. We looked at current practices related to both the resource development stage (we refer to this stage as “work-in-progress”), as well as the post-development stage (referred to as “completed work”). The key aspects include sharing and storing work-in-progress, types of files and resources stored and created, sharing, delivering and storing completed resources, ownership of resources, reuse and repurposing of resources, and finding and selecting materials for reuse.

Sharing and storing work-in-progress

We investigated practices related to sharing and storing resources under development. A very high level of sharing work-in-progress for comment and collaboration was identified in our sample, which confirms the view that repositories could play a useful role in supporting such collaboration, although –given the findings of this study - they don’t appear to do so at present. In our sample no significant variation of sharing practices across subject disciplines was identified.

Sharing takes place predominantly among departmental colleagues and colleagues in wider university. Sharing resources with colleagues in other institutions nationally is also relatively popular, but less common than sharing within a single institution. For LORs, this could imply that subject-based as well as institutional repositories could potentially be taken up more readily than other types of repositories.

The most popular method of sharing is via e-mail. Sharing by hand and via personal website are also used relatively widely. There is only a very marginal use of repositories for this purpose at this stage (1.2%). Further collaboration and commentary on shared resources appears to take place primarily face-to-face, but also electronically, using automated collaboration features or simple text insert.

In terms of storing work-in-progress, university network, as well as office PCs and laptops are the most popular locations. Only one instance of use of a LOR (Jorum) for this task was recorded. This is perhaps because repositories are viewed as a mechanism to share and showcase completed work rather than resources under development. Additionally, individuals may feel reluctant to expose incomplete resources in a public domain. If potential users are to be encouraged to use LORs to collaborate on development of educational resources, then LORs should provide "safe" environments with temporarily restricted access rights for specific groups of individuals or communities. CDLOR project is currently developing and testing a potential solution for such managed access to resources within repositories (Douglas, 2006¹³).

An important element of storage is backing up work-in-progress. The vast majority of the respondents use one or more strategies/devices for backing-up work-in-progress, the most popular of which are pen drives and university network.

Version control is another important aspect of storing work-in-progress. 13.4% of respondents in this study do not utilise any version control. However, the majority employ one or more methods of version control. The most popular methods are indicating version and date in filename or document. Specific version control systems are utilised by 4.9% of the respondents.

Version control mechanisms are important for LORs. Lack of appropriate versioning mechanisms within repositories has been identified as a key information management issue that could be a barrier for implementation of LORs in teaching and learning communities (Margaryan et. al, 2006¹⁴). A recent study by RIVER project in the UK (Rumsey et al., 2006¹⁵), which has scoped current practices and issues in version identification, suggested that awareness of this issue among repository curators may not be very high. One of the recommendations emerging from the RIVER study is that while robust mechanisms of versioning are needed, "...definitive sets of version identification requirements from researchers, teachers, learners, information professionals and other stakeholders [must be researched] before finalising policies in this area." (ibid, p.40). They emphasise that such version control mechanisms should be based on understanding of how stakeholders are currently working with different types of resources, what tools they are using, and how and with whom they are interacting within communities. This survey contributes to developing understanding of current practices, however qualitative studies are needed to unpick issues underlying these numbers.

Types of files and educational resources created and stored are discussed next.

Types of files and educational resources stored and created

Most frequently stored file types are PowerPoint presentations (.ppt), images (.jpg/.jpeg, .gif, .tif, etc.), web pages, documents (.doc, .rtf, .pdf, etc.), and simple text (.txt, XML). Various specialist formats (such as LaTeX, SPSS, CADs, etc.) are the least frequently used. In terms of educational resources, the most frequently created types are PowerPoint presentations, resource lists such as bibliographies and web link collections, learning activities, information resources such as articles and book chapters, and study guides. This result could have been influenced by the type of our respondent group.

¹³ Douglas, P. (2006). *CD-LOR core use case scenarios*. www.academy.gcal.ac.uk/cd-lor/

¹⁴ Margaryan, A., Currier, S., Littlejohn, A., & Nicol, D. (2006). *Learning communities and repositories*. CDLOR project desk research report. JISC, UK.

¹⁵ Rumsey, S. Shipsey, F., Fraser, M., Noble, H., Bide, M., Look, H., & Kahn, D. (2006). *Scoping study on repository version identification (RIVER)*. Final report. Retrieved August 2, 2006, from http://www.jisc.ac.uk/uploaded_documents/RIVER%20Final%20Report.pdf

For learning object repositories, the possible implication is that these types of files and resources will be more readily shared or reused by potential LOR users. However, generalising the findings of this survey to broader groups of stakeholders will not be straightforward, given the specific nature of the sample.

Practices related to sharing and delivering completed resources are discussed next.

Sharing, delivering and storing completed work

Completed work is even more widely shared than work-in-progress. This could be interpreted as that people tend to be less willing to “go public” with work-in-progress and more confident in sharing completed work. It may also be explained by the fact that repositories of teaching and learning resources are not yet set up to handle or support sharing of works in progress, but are seen as storage areas for completed works.

The completed work is predominantly made available via departmental, institutional or personal websites. Furthermore, a relatively large number of respondents indicated that they utilise institutional, national or subject-specific repositories to share completed work. This is not surprising given that most of sharing tends to take place among departmental or institutional colleagues. Does this tendency to share predominantly locally reflect individuals’ identification with departments/institution as their primary community or is it rooted in utilitarian considerations, for example that resources shared within departments are more likely to be relevant because they are subject-based? Lack of research in this area means that at present there is no definitive answer to this question. However, some exploratory studies in the UK have identified limited evidence indicating that both reasons could be valid. For example, a parallel study by CDLOR project identified that individuals indeed viewed their institutional department as their primary community (Margaryan & Currier, 2006¹⁶), while the previously mentioned study by Rights and Rewards project found evidence for users’ preference for subject-based rather than general repositories.

These findings possibly imply that there could be a larger scope for institutional and subject-based LORs than other types of LORs.

In terms of delivering completed work to students, institutional VLE is the most popular medium. Displaying resources electronically in classroom, as well as distributing resources in paper-based format are also popular ways of delivery. When making the educational resources available electronically, they tend to be both uploaded to the delivery mechanism (e.g. VLE) and linked to the external location. At present repositories do not appear to be used by students directly. This has also been noted in a parallel study by the CDLOR project (ibid).

What are the implications for LORs? Given the popularity of VLEs as a delivery medium, perhaps repositories should be linked with VLEs. Previous studies have shown that users would often contribute resources due to the repository being linked to their institutional VLE and have suggested that integrating repositories with existing systems and practice may help to increase sharing (Bates et. al, 2006¹⁷). In the UK, there are currently attempts to move toward such integration through a modular, open-standards-based approach, where virtual learning environments (VLEs), personal learning environments (PLEs), ePortfolios, and other similar electronic learning support environments are seen as presentation layer applications (for example, see JISC Information Environment¹⁸, service-oriented view of IE¹⁹, eFramework²⁰).

¹⁶ Margaryan, A., & Currier, S. (2006). *Report on interviews with LO repository users*. Public summary of internal CDLOR Report, Workpackage 3.1. JISC. UK.

¹⁷ Bates, M., Loddington, S., Manuel, S., & Oppenheim, C. (2006). *Rights and Rewards project academic survey: Final report*. JISC, UK.

¹⁸ JISC Information Environment (JISC IE), http://www.jisc.ac.uk/index.cfm?name=ie_home

¹⁹ Service-oriented view of IE, <http://www.ukoln.ac.uk/distributed-systems/jisc-ie/arch/soa/>

²⁰ e-Framework, <http://www.elframework.org/> and <http://www.e-framework.org/about/>

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Completed work tends to be stored primarily on university network and office computers. Is it because this is the most widely available mechanism, an easy option requiring very little skill, or is it the most appropriate option for teachers?

Pen drives and laptops are also popular locations for storing completed resources. Less people seem to back-up completed work as compared to work-in-progress. This could be due to the fact that completed work is usually stored in multiple locations, thus formal back-up is not perceived to be necessary. However, this is an area where repositories could make useful contribution.

Perceptions of ownership of educational resources are discussed next.

Ownership of educational resources

A widely held perception among the respondents is that copyright is owned by institutions rather than individuals, although one fifth of the respondents indicated that they owned the copyright. This could imply that many would perceive that they wouldn't be free to distribute the resources through channels outside institutions, for example via national or subject-specific repositories.

Notable is the number of respondents who indicated that they didn't know who owned the copyright for the resources they developed. This is indicative of the current lack of clarity and in many cases lack of explicit policies with respect to ownership of resources, both within the UK and internationally. Lack of awareness of copyright ownership has been identified by previous studies (e.g. Bates et al, 2006| Cadd et. al, 2003²¹). This lack of clarity could be a barrier for wider uptake of repositories in teaching and learning. Uptake of repositories requires understanding of intellectual property law (IPR) as exchanging resources will involve asking permission to use third-party materials and acknowledging such third-party content appropriately, acquiring permissions, keeping records of permissions granted, as well as getting necessary releases to make resources available in repositories.

The JISC Digital Repositories Programme project TrustDR²² is looking specifically at IPR issues for learning object repositories, and is collaborating with CDLOR to ensure that relevant issues are noted and incorporated across both projects.

Current practices in reuse and repurposing of educational resources are discussed next.

Reusing and repurposing resources

Various aspects of resource reuse and repurposing were investigated. These include general practices related to gathering materials from others and repurposing these during the resource development stage; repurposing others' and own materials; reusing others' and own materials. We also explored what specific types of educational resources are reused.

Overall, respondents indicated that they collect materials developed by others when developing their own educational resources; and they often repurpose these resources for their own use. Level of reuse of others' resources without modification, in contrast, is very low. This supports the oft-repeated statement that the much-vaunted "learning object economy" has not become a reality yet.

Collected materials are mostly text-based resources, images, diagrams and URLs, and they are stored by course name or by keyword/tag, predominantly on home computer or laptop, office computer, and CD/DVDs or pen drives. Also, the majority tend to archive on computer all or

²¹ Cadd, E., Oppenheim, C, & Probets, S. (2003). RoMEO Project.
<http://www.lboro.ac.uk/departments/lis/disresearch/romeo/>

²² TrustDR project, <http://www.uhi.ac.uk/lis/projects/trustdr/>

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some of these educational materials once the particular resource for which they were gathered has been delivered.

In contrast to reuse of materials created by others, reuse of own materials appears to be common. Is this related to IPR? Or is it because one's own materials are just more available and familiar? Could this imply that there is more scope for personal digital collections than LORs²³? Furthermore, reusing own materials without modification is less common than repurposing own resources. More studies are needed to investigate the underlying reasons.

Types of educational resources most often reused include PowerPoint presentations, information resources, learning activities, images, and assessment materials. The least often reused resources are previously submitted work, blog/wiki postings, tables, feedback, simulations and games, problems, discussion forum postings, glossaries and equations, and FAQs. From pedagogic point of view, the lack of reuse of previously submitted work is surprising because exemplars are such a crucial element of teaching. These findings provide some clues as to what types of resources are likely to be shared and reused by potential users of LORs.

Finding and selecting materials to reuse

Finally, current practices related to finding and selecting materials to reuse were investigated. In searching for materials to use when developing educational resources, most popular strategies are search by subject keyword, by type and file format. Principal criteria by which such materials are selected include recommendation by a trusted colleague and trustworthiness and reputability of the source where the materials are found. Thus trust appears to be a major factor when selecting materials for potential repurposing or reuse.

Conclusion

This review of stakeholders in teaching and learning communities identified that sharing educational resources, both in development and post-completion stage, appears to be an integral part of current practice. Therefore, there is a strong potential for use of repositories in teaching and learning. However, the highly localised nature of sharing might imply that institutional repositories could potentially be more readily taken up than regional, national, or international ones. Lack of clarity in terms of ownership of educational resources could impede sharing of resources via national, international or subject-specific repositories.

Trust appears to be an important factor underlying the reuse practices, and this could also impede a wider and more open sharing of resources in less coherent, more disparate communities.

As we emphasised in the beginning, any interpretation of the survey results should take into consideration that the respondents - albeit working across various disciplines- represent a specialist group focused on learning technology. This group is likely to have specific ways of sharing resources as compared with other teaching and learning communities. Therefore, more data is needed to be able to generalise these findings to other communities and stakeholder groups.

Overall, this study contributes to a better understanding of the personal resource management strategies in some specialised teaching and learning communities and outlines areas where learning object repositories could potentially add value. However, it also raises more questions. Follow up qualitative studies are needed to develop a deeper understanding of these findings.

²³ For an overview of current research and emerging services in the area of personal digital collections see Beagrie, N. (2005). Plenty of room at the bottom? Personal digital libraries and collections. *D-Lib Magazine*, 11(9). Retrieved August 1, 2006, from <http://www.dlib.org/dlib/june05/beagrie/06beagrie.html>

Appendix 1. E-mail invitation to participate in the survey

Dear Colleagues,

Do you create teaching and learning resources? That is, do you develop, co-develop or re-purpose resources for use with students, in the classroom or online, in higher or further education (i.e. universities or colleges, including vocational education) anywhere in the world? For instance: slides; lecture notes; simulations; assessments or self-assessments; resource lists; images; videos; web tutorials; virtual environments, etc., etc., etc.

Would you like to win a £30 Amazon voucher?

The UK JISC-funded CD-LOR and RepoMMan projects would like to invite you to spend 15 minutes completing our survey on your 'personal resource management strategy', i.e. how you store and share resources during their development, and during and after their delivery to students. The survey is quick and easy to complete <http://www.eservices.hull.ac.uk/cd-lor/>

The deadline for completing this survey is 19th May 2006²⁴.

We would like to find out about what you do, whether you are a technical "newbie" who has only just learned to use PowerPoint; or someone who just distributes all of your lecture notes and references in a Word document; or someone who is now getting excited (or disappointed) about the different kinds of resources you can share via your university or college VLE; or someone who creates simulations, equations, virtual teaching spaces, SCORM content, LAMS or IMS LD learning activity designs, or complex interactive web resources; or anyone else who develops teaching and learning resources of any kind.

*More detailed information about this survey: *

The survey is being carried out by two projects of the UK JISC Digital Repositories Programme <http://www.jisc.ac.uk/index.cfm?name=programme_digital_repositories>; : RepoMMan <<http://www.hull.ac.uk/esig/repomman/>>; and CD-LOR <<http://www.ic-learning.dundee.ac.uk/projects/CD-LOR/>>.

The University of Hull's RepoMMan project aims to develop a software tool that will enable researchers to work with a digital repository.

The CD-LOR project (based at the Universities of Strathclyde and Dundee) is investigating the social, cultural and pedagogical factors that influence use of repositories within a range of different learning communities.

Both projects are interested in investigating current personal resource management strategies and practices of potential repository users: researchers, teachers, educational developers, learning technologists and support staff. This survey is looking in particular at the development of resources for teaching and learning. It is based on an earlier RepoMMan survey, which looked at the research development process from inception of a research idea through to final publication. A report <<http://www.hull.ac.uk/esig/repomman/documents/index.html>>; on that survey is available on the RepoMMan website.

The results of this survey, together with information from personal interviews with stakeholders, will help us determine how individuals find, create, store and share their educational resources and how they collaborate on the development of these resources with colleagues in their departments, institutions, subject area and beyond. For the purposes of this survey, 'educational resources' include anything that may be used in teaching and learning, e.g. simple information assets like images or video clips, assessments, lecture notes, PowerPoint slides, Flash files, learning activity designs, lesson plans, simulations, etc.

This survey may be filled out anonymously. However, contributors who include their name and e-mail address will be entered for a prize draw; the first two names picked out will receive a

²⁴ The survey was extended to May 26, 2006.

CD-LOR Deliverable 7: Report on Personal Resource Management Strategies
£30 Amazon voucher.

Regards,

Ms. Sarah Currier

Senior Research Fellow, JISC Digital Repositories Programme:
Project Manager, Community Dimensions of LO Repositories (CD-LOR)

<http://www.ic-learning.dundee.ac.uk/projects/CD-LOR/>

Support Officer (CETIS), JISC Digital Repositories Programme

<http://www.ukoln.ac.uk/repositories/digirep/>

<http://www.cetis.ac.uk/>

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Appendix 2. CDLOR Survey on Personal Resource Management Strategies

Introduction

This survey is being carried out by two projects of the [JISC Digital Repositories Programme: RepoMMan](#) and [CD-LOR](#). The University of Hull's RepoMMan project aims to develop a software tool that will enable researchers to work with a digital repository. The CD-LOR project (based at the Universities of Strathclyde and Dundee) aims to identify and analyse the factors that influence use of learning object repositories within a range of different learning communities. Both projects are interested in investigating current personal resource management strategies and practices of potential repository users: researchers, teachers, educational developers, learning technologists and support staff. This survey is looking in particular at the development of resources for teaching and learning. It is based on an earlier RepoMMan survey, which looked at the research development process from inception of a research idea through to final publication. A [report](#) on that survey is available on the RepoMMan website.

The results of this survey, together with information from personal interviews with stakeholders, will help us determine how individuals find, create, store and share their educational resources and how they collaborate on the development of these resources with colleagues in their departments, institutions, subject area and beyond. For the purposes of this survey, 'educational resources' include anything that may be used in teaching and learning, e.g. simple information assets like images or video clips, assessments, lecture notes, PowerPoint slides, Flash files, learning activity designs, lesson plans, simulations, etc.

Contributors who include their name and e-mail address will be entered for a prize draw; the first two names picked out will receive an Amazon voucher for £30 each.

Data protection

Before you begin your survey response please read the points below and, if you are comfortable with them, click on 'I agree' to continue. Further information can be found at <http://www.hull.ac.uk/esig/repomman/privacy.html>

1. I understand that any data I provide by taking part in this research will be held in accordance with the Data Protection Act 1988.
2. My data will be used only for the stated research purposes.

About you

Please fill in these details about yourself. You do not have to give your name and e-mail address if you do not wish to do so, but this would be useful to us if we want to follow up on any of your answers and it will enable your name to be entered for the Prize Draw.

Name (optional) *text box*

Email (optional) *text box*

In what part of the world do you work?

Exclusive radio buttons

- England
- Scotland
- Wales
- N Ireland
- European Union (other than above)
- USA or Canada
- Australasia
- Other

Into which subject grouping below does your activity best fit?

Exclusive radio buttons

- Arts, languages and history
- Mathematics, computing and engineering
- Sciences and environmental sciences (including Geography)
- Health and medicine
- Social Sciences
- Education
- Business and management
- Other (please specify) *Text box*

What role(s) do you have in your institution?

Non-exclusive radio buttons

- Teaching
- Research
- Learning technology support
- Educational development support
- Staff development
- Library staff
- Other

Q1. When you are developing an educational resource, do you ever share your 'work-in-progress' for comment and/or collaboration?

Exclusive radio buttons

Yes

No

Q1a. Who do you share your 'work-in-progress' with?

Non-exclusive radio buttons

- Departmental colleagues
 - Colleagues in the wider University
 - Contacts in other UK educational organisations
 - Contacts in other UK organisations (non-education)
 - A UK funding agency
 - Contacts in educational organisations overseas
 - Contacts in other overseas organisations (non-education)
 - A non-UK funding agency
- Other (please explain briefly) *Text box*.

Q1b. What methods do you use to share your work-in-progress?

Non-exclusive radio buttons

- Email
 - Personal website
 - Conventional post
 - By hand
- Other (please explain briefly) *Text box*

Q1c. How do your colleagues comment or collaborate on the work?

Non-exclusive radio buttons

- In a face-to-face meeting
- In a separate document
- In the same document simply by inserting text
- In the same document using some sort of automated collaboration feature (e.g. Word 'track changes')

- Other (please explain briefly) *Text box*

Q2. Keeping track of the latest version of the educational resource you are developing could be important whether or not you share it with others. How do you manage version control?

All radio buttons except that for the first option are non-exclusive

- I don't
- I rely entirely on the computer's file system date
- I put the date of each version in the filename
- I put the number of each version in the filename
- I put some other 'tag' in the filename
- Other (please explain briefly) *Text box*

Q3. Your educational resource 'works-in-progress' will be stored in one or more places during the period that you are developing them. Which of the following are places that you might normally store working versions (as distinct from backups)?

Non-exclusive radio buttons

- My home desktop computer
- My laptop
- My office computer's hard drive
- A university network drive
- CD or DVD
- Floppy disk
- Other (please explain briefly) *Text box*

Q4. To help us understand the type(s) of file that you store as parts of your 'works-in-progress' please drag each of these cards to the appropriate category heading.

Cards for each option sorted on a Likert-type scale (frequently, sometimes, rarely, never)

- Document files (For example: .doc .rtf/rtfd .pdf .xsd .ps)
- Image files (For example: .jpg/jpeg .gif .png .psd .tif/tiff .eps)
- Audio files (For example: .wav .mp3 .aac)
- Video files (For example: .wmv .avi .rm .mpg (and its variants))
- Spreadsheet files (For example: .xls .xsc)
- Statistics files (For example from a package like SPSS)
- Diagrams or CAD (For example from packages such as Visio or AutoCAD)
- Database files (For example SQL, MySQL, Oracle or Access files)
- Presentation files (For example, PowerPoint files)
- Web pages
- Simple text files (This would include .txt and XML files, for example)
- Archive formats (For example Zip or Stuffit files)
- Specialist text formats (For example from LaTeX)
- Interactions (For example: Flash files, Java?)

Q4a. To help us understand the type(s) of educational resource(s) that you create, please drag each of these cards to the appropriate category heading

Cards for each option sorted on a Likert-type scale (frequently, sometimes, rarely, never).

- Assessment materials
- Assignments
- Audio (i.e. sound files)
- Blog or wiki postings
- Case studies
- Charts/graphs
- Course descriptions and announcements
- Diagrams
- Discussion forum postings
- Equations
- FAQs

- Feedback
- Games
- Glossaries
- Information resources (e.g. articles, journal papers, book chapters)
- Interactive resources
- Learning activities
- Lecture notes
- Lesson plans
- Moving images (e.g. video, film clips, animations)
- Presentations
- Previously submitted work
- Problems
- Resource lists (e.g. bibliographies, Web link lists)
- Questionnaires/surveys
- Self-assessments
- Simulations
- Slides
- Still images
- Study guides
- Tables
- Webpages/websites

Q5. Do you keep your own backups of 'work-in-progress' files and, if so, where?

All radio buttons except that for the first option are non-exclusive

- I don't
- On the same computer and drive as the original
- On a different drive (internal or external) on the same computer as the original
- On another computer
- On a network drive
- CD/DVD
- USB stick or other memory card
- Floppy disk
- Other (please specify) *Text box*

Q6. Do you share your completed educational resources with others (apart from the students you deliver them to in teaching)?

Exclusive radio buttons

- Yes
- No

Q6a. Where do you make your completed work available to others?

Non-exclusive radio buttons

- A subject-based website at national or international level
- My institution's main website
- My institution's digital repository
- National repository
- Subject- or discipline-based repository
- My departmental website
- A personally maintained, non-institutional, website
- Other (please explain) *Text box*

Q6b. How do you deliver your educational resources to the students?

Non-exclusive radio buttons

- Through institutional VLE (AKA 'learning management system', e.g. WebCT)
- Through departmental VLE
- My personal website
- In classroom, in paper-based format

- In classroom, electronically displayed (e.g. projected to the whole class)
- In classroom (computer lab)
- Other (please specify)

Q6c. When making educational resources available electronically, do you upload them to the delivery mechanism (VLE, website) or do you link to them at some external location?

Exclusive radio buttons

- Upload
- Link
- Both, depending on the resource
- Please add any explanatory comments *Text box*

Q7. Where do you keep your personal copies of completed educational resources?

All radio buttons except that for the first option are non-exclusive

- I don't keep a copy once the educational resource is delivered
- I keep only a paper copy
- My home desktop computer
- My laptop
- My office computer
- The university network
- VLE
- CD or DVD
- USB stick or other memory card
- Floppy disk
- Other (please specify) *Text box*

Q8. Do you keep backups of your completed educational resources in addition to the completed versions that we dealt with in the last question?

Exclusive radio buttons

- Yes
- No

Q9. Who, from the following, owns the copyright to the educational resources you have developed in the past two years?

All radio buttons except that for the first option are non-exclusive

- I don't know
- My publisher(s)
- My grant provider
- My institution
- Another institution
- I do
- Other (please specify) *Text box*

Q10. Do you believe that you would be free to distribute your educational resources through channels outside your institution, such as via a national or subject-based repository, or a personal blog?

Exclusive radio buttons

- Yes
- No
- Sometimes (please explain) *Text box*

Q11. During development of educational resources, do you have your own collection of digital material gathered from people and sources elsewhere?

Exclusive radio buttons

Yes
No

Q11a. What sort of material do you gather? *Text box*

Q11b. Where do you store this material? *Text box*

Q11c. Would you say that it is stored in a structured way?

Exclusive radio buttons

- Yes
- No

Q11d. If you answered "yes" to the previous question, how do you structure the stored material?

Non-exclusive radio buttons

- By course name
- By year
- By semester
- By keyword or tag
- By age of material
- Alphabetically
- Other (please specify) *Text box*

Q12. Do you keep on computer all or some of the educational materials mentioned in the last question once the particular resource for which they were gathered has been delivered?

Exclusive radio buttons

- Yes
- No

Q13. In the last year, what proportion of the educational resources you have developed were created from scratch?

Exclusive radio buttons

- None
- Less than half
- More than half
- 100%

Q13a. In the last year, what proportion of the educational resources you have developed have been repurposed from your own existing materials (i.e. you have changed or edited your own materials)?

Exclusive radio buttons

- None
- Less than half
- More than half
- 100%

Q13b. In the last year, what proportion of the educational resources you have developed have been repurposed from materials created by others (i.e. you have changed or edited others' materials)?

Exclusive radio buttons

- None
- Less than half
- More than half
- 100%

Q13c. In the last year, what proportion of the educational resources you have delivered have been materials created by others, reused by you as is?

Exclusive radio buttons

- None
- Less than half
- More than half
- 100%

Q13d. In the last year, what proportion of the educational resources you have delivered have been materials previously created by you, reused as is?

Exclusive radio buttons

- None
- Less than half
- More than half
- 100%

Q14. When you look for materials to use when developing educational resources, how do you search for such materials?

Non-exclusive radio buttons

- By subject keywords
- By author's name
- By technical format
- By type of material (e.g. 'lecture notes')
- By dates
- Other (please specify) *Text box*

Q15. When you find materials you could potentially use when developing educational resources, by what criteria do you select such materials?

Cards for each option sorted on a Likert-type scale (frequently, sometimes, rarely, never).

- The first usable hits in a Google search
- Availability (e.g. they are copyright cleared or they have a Creative Commons licence allowing non-commercial use)
- Ease of use (e.g. they are in a format you can re-purpose easily or are familiar with)
- Recommendation by a colleague that you know/trust
- Available from a trusted or reputable source
- Positive reviews or comments from people you don't know personally (e.g. via Amazon, Merlot)
- Close fit with your view of the subject matter or pedagogical approach
- Other (please specify) *Text box*

Q16. What type(s) of educational resources do you most often reuse (can choose as many as you like)

Non-exclusive radio buttons

- Assessment materials
- Assignments
- Audio (i.e. sound files)
- Blog or wiki postings
- Case studies
- Charts/graphs

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- Course descriptions and announcements
- Diagrams
- Discussion forum postings
- Equations
- FAQs
- Feedback
- Games
- Glossaries
- Information resources (e.g. articles, journal papers, book chapters)
- Interactive resources
- Learning activities
- Lecture notes
- Lesson plans
- Moving images (e.g. video, film clips, animations)
- Presentations
- Previously submitted work
- Problems
- Resource lists (e.g. bibliographies, Web link lists)
- Questionnaires/surveys
- Self-assessments
- Simulations
- Slides
- Still images
- Study guides
- Tables
- Web pages/websites

Q17. What, if any, developments in IT over the last two or three years have helped you in your teaching - and how?

Text box

Q18. What frustrations, if any, do you have in your teaching work that you feel IT ought to be able to help with now, or in the near future?

Text box

Closure

Thank you very much for your time. If you have provided us with your name and e-mail address you will be entered into our Prize Draw, which will take place in June 2006, it is also possible that we may contact you to follow up some of your answers. We will also let participants know when the results of this survey are disseminated. If you have any general comments that you want to add, please do so here. *Text box*