

## Malcolm Raggett DICE final report

### Report

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## DICE - Final Report

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*The preservation of research material and data*

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## **1. Acknowledgements**

The project team would like to thank the JISC for funding what we believe is an important start on the road to research data preservation at LSE. JISC also funded several other projects on a similar theme and their collaboration, especially the PrePARE project at Cambridge and the SHARD project at ULCC/IHR, has created a richer, more thorough set of resources for the community. We must also thank those researchers who took time to respond to our survey. Without their input we would not have been able to address their concerns or target our learning materials.

## **2. Executive Summary**

The JISC-funded DICE project ran from November 2011 until July 2012 with the intention of raising the awareness of library staff and researchers to the increasing importance attached to the preservation of research material and data, not just publications. The project also developed learning materials for use by trainers during formal training sessions and by individual researchers for personal development in the skills and knowledge necessary to successfully preserve important research data. The project found evidence that attitudes to research data preservation needed adjusting before widespread acceptance of the practice will take place. Whilst this is addressed in the materials developed, it is only by sustained advocacy that LSE will be able to progress in research data preservation.

The outputs from the project are all licensed under Creative Commons and available to the HE community to adopt and adapt.

## **3. Background**

Research is at the heart of LSE and is one of the key elements in achieving and maintaining our high ranking amongst universities in the UK and globally. Research has traditionally been judged by the quality of publications but another element is starting to be taken into account: the quality of material and data on which the research is based. In order for this to be judged it has to be accessible. There are national repositories for data but their use is rather discipline-dependent. In general, the depositing of research material and data has not been a high priority for LSE researchers.

The library believes it should be proactive in anticipating and providing support to researchers for the preservation of research material and data. The LSE library has already implemented a digital library team with preservation expertise, and the sharing of this is important in extending and re-skilling existing librarians. To this end, one of the target groups for training is librarians. The other target group is, of course, the researchers themselves. This latter group have been offered training in information skills, and this training will be bolstered with additional content and courses in the future.

In order to raise awareness and develop the training materials, the DICE (digital communication enhancement) project was formulated and received funding from the JISC.

#### **4. Aims and Objectives**

The project's stated objectives were:

- a. To engage with members of the LSE community
- b. To raise awareness of digital preservation and associated risks
- c. To promote digital preservation services provided by LSE Library
- d. To produce reusable training materials for training provider, academic and PhD student audiences

There have been no significant changes to these objectives during the project. All objective were met.

#### **5. Methodology**

An initial review was undertaken to gauge current awareness and practice around digital preservation of research data. This was documented as a formal report.

All research-active staff and research students were asked to respond to a questionnaire. This gave us a picture of our researchers' current state of awareness and practice in research data preservation. The analysis of the results is available at <http://lisedice.wordpress.com/2012/04/>.

From this we developed training materials that were used to train library staff and were incorporated into the Information Literacy training programme for PhD students.

More detailed training materials have been added as an LSE Moodle self-study course. This material is also freely available from the LSE Training Online Web site and as learning objects in JORUM.

Collaboration with two other JISC funded projects – SHARD at the University of London Computer Centre/Institute of Historical Research and PrePARE at Cambridge – has resulted in a joint promotional leaflet and a generic list of frequently asked questions and answers. It is interesting to note that this collaboration shows that there is a similarity of messages to be conveyed even though the projects were working in different academic fields. It also strengthens the potential for reuse of the materials developed by DICE (and the other projects).

## 6. Implementation

Initially there was the inevitable period of recruitment and planning followed by several weeks devoted to reviewing the current position in research data preservation, which resulted in a written, literature-review-style report available at <http://lsedice.files.wordpress.com/2012/02/literaturereview2012-02-24.pdf>. The key messages from this were that there is increasing pressure to preserve and make research data available, especially from the funders, but that few universities currently have the infrastructure or expertise to do so. Also, that the awareness of this need is generally low amongst researchers, but does vary with discipline.

Work started in earnest in late February 2012 with the design, pilot testing then running of an on-line questionnaire aimed at all research-active staff and PhD students at LSE. The School has 600 research staff and 1000 PhD students. The questionnaire elicited a 10% response with a reasonably even spread across the departments and disciplines. The analysis of this was completed by mid-April. Although it would have been desirable to have a higher response, we felt that the replies were sufficient for us to draw conclusions and base the project's subsequent work on. Google Forms was used to run the questionnaire, and this had the benefit of providing live statistics as well as results that were readily downloaded and analysed in a spreadsheet. The resulting report is freely available from the project blog At <http://lsedice.wordpress.com/2012/04/>.

One thing we learned from both the background research and the questionnaire was that researchers in some disciplines don't consider themselves to work with "data" as this seems to imply numerical or tabular information. We therefore adopted the phrase "research material and data" when dealing with researchers, retaining the original words "research data" as a shorthand between those in the library working on the project.

We decided on the messages we wanted to get across to researchers, and developed a tiered approach to the learning materials:

1. An introductory leaflet giving a broad overview of the benefits to be gained by preserving research material and data as well as the skills necessary to implement it. The leaflet will be available as a self-service item in the library and will be distributed to all new research students during their induction to the library. Librarians will also be encouraged to give the leaflet to any researchers seeking one-to-one help. LSE's Design Unit designed the leaflet together with templates for Web pages and presentations. In practice these templates were modified extensively but the graphics were retained to give the visual continuity between the various resources
2. A set of frequently asked questions and answers that could be consulted quickly by researchers, since the questionnaire showed this to be the single most popular method of delivering our messages

3. Presentations, in both Prezi and PowerPoint form, for use when training library staff during the project and for adoption during post-project short courses
4. Detailed self-training material aimed primarily at researchers, available in the School's VLE (Moodle) at <https://moodle.lse.ac.uk/course/view.php?id=3492> and learning materials repository, [http://learningresources.lse.ac.uk/view/colls\\_del/](http://learningresources.lse.ac.uk/view/colls_del/).

The development of these materials, their delivery to library staff and the pilot testing of a sub-set in the Information Literacy course for PhD students, took the remaining 3 months of the project.

All materials are freely available to the community under a Creative Commons Attribution Share-alike licence from LSE and via JORUM.

## 7. Outputs and Results

The intermediate deliverables for the project were:

- The literature review
- The data and reports from the analysis of the questionnaire

The final deliverables were:

- An introductory leaflet
- Prezi presentations, available at <http://prezi.com/explore/search/?search=malcolm+raggett>
- PowerPoint presentations
- Web pages, following the structure of the leaflet, providing the background learning materials for self-study or reference by trainers
- A Moodle-based course in preserving research material available at <https://moodle.lse.ac.uk/course/view.php?id=3492>

The above materials are available from [http://learningresources.lse.ac.uk/view/colls\\_del/](http://learningresources.lse.ac.uk/view/colls_del/) unless otherwise stated. The training materials are also available from JORUM (<http://resources.jorum.ac.uk/xmlui/browse?value=Malcolm+Raggett&type=author>).

The training materials and presentations were given an initial trial with a group of PhD students and library staff. Although this does not represent a large test, the feedback was positive. The short period and timing of the project did not allow more extensive testing, however it is hoped that this will take place as part of a programme of training in the library.

## **8. Outcomes**

For each of the project's objectives the following achievements can be noted:

### **To engage with members of the LSE community**

Research staff and students were consulted to discover their current skills and attitudes to the preservation of their research material. This was used to develop appropriate learning materials that were then given an initial test with a group of PhD students and with library staff. The material was well-received and prompted discussion amongst the PhD students. It was also encouraging to see attendance by staff from across the library.

### **To raise awareness of digital preservation and associated risks**

Just by asking all research-active staff and students to respond to a questionnaire has raised the awareness of the topic amongst the School's researchers. The cross-library attendance at the training courses and the incorporation of material into the PhD student Information Skills training has also contributed to the raising of awareness of data preservation.

This project has coincided with a period of political developments on open access to research that are being reported in the national media, which adds emphasis to the project's work. However further work will be needed beyond the life of the project to embed attitudes and improve skills as we are trying to change a culture, not just impart skills.

### **To promote digital preservation services provided by LSE Library**

Although the library is developing capacity for the long-term preservation of collection and institutional digital assets together with the core technical skills to support this work, the project has confirmed an emerging need for digital support to be embedded in the day-to-day interactions between librarians and researchers through an ability to provide advice on appropriate tools and techniques.

### **To produce reusable training materials for training provider, academic and PhD student audiences**

The preparation of training material occupied a large proportion of project time and resulted in an introductory leaflet, a set of FAQs, Moodle course material, HTML pages, Prezi, Open Document and PowerPoint presentations. The material was written for researchers so that trainers could initially learn from, then use it, during formal and informal sessions.



Materials developed during the DICE Project were used in the Library's six week course for PhD students, *MY592 Workshop in Information Literacy*<sup>1</sup>. This course is delivered in 6 weekly two-hour practical workshops and is aimed at first and second year PhD students. MY592 is run each term and aims to teach skills in finding, using, evaluating and managing information for research. It builds skills incrementally over the six weeks from finding resources, evaluating quality resources, and managing the relevant information for future use.

In planning the summer term 2012 course we examined how the new materials being developed could be incorporated in to MY592 and where it would be most applicable. The new materials proved to be highly relevant for PhD researchers and it was possible to use a selection of the topics from the new materials in each of the workshops. The content was introduced and added to the presentations and in some cases, the class activities and content were delivered in the LSE's Virtual Learning Environment, Moodle.

### **How the material was used with research students**

Examples of where the new material was used include:

Week 1 Introduction and Literature searching: Preservation and management issues were introduced and researchers advised to consider strategies early for organising their own files.

Week 2 Using the internet for research: This workshop was a very suitable place to introduce the questions surrounding file storage online and when and why researchers might consider the issues. The teachers were able to re-use materials developed by the project and embed them in the VLE component of the course and in a practical exercise for the class.

#### **Example of Exercise used in MY592 on Online file storage**

Where to store your research including your data, any articles that you find as part of your literature search, and draft chapters as you begin to write, raises lots of important issues. LSE provide a central file store called H: Space which is secure and backed-up. However you may choose to store your files locally on your own computer or online as a growing number of services offer 'cloud computing' solutions. These include tools often providing large amounts of free storage space and include DropBox, Box and Google Drive – and many others.

Discuss in pairs your approach to storing your research to date. What are the pros and cons of the approach you have adopted?

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<sup>1</sup> MY592Workshop on Information Literacy course guide:  
<http://www2.lse.ac.uk/library/services/training/MI512.aspx>

Weeks 3 – 6: Topics such as open access, data management and the ethical issues of research data management, dissemination and sharing amongst for researchers.

Looking forward to the next academic year, the plans are to continue to incorporate content from the new Moodle course, *Sending your research into the future*.

### **Lessons learned**

The teaching team were very pleased to discover how easily some of the topics and issues aligned with the learning outcomes of the current PhD course.

The most important lesson is that the librarians teaching MY592 need to develop and update their own skills regarding digital preservation.

The summer term course has small numbers and in the next academic year we intend to continue to incorporate the material and test it on larger groups.

### **Fruitful collaboration**

The collaboration between DICE SHARD and PrePARE, although unplanned, came about by identifying the synergies between them. The leaflet and the FAQs are collaborative outcomes that have benefited by increased re-usability and testing in a wider context than would have been achieved by the individual projects alone.

## **9. Conclusions**

The political and financial climates are conducive to the preservation of research data. The technology to enable preservation is either available at the national level or is being developed at the institutional level. This project provides for the parallel development of researchers' and librarians' skills that is essential for the exploitation of the technology.

But only a minority of researchers acknowledge the benefits of data preservation. To be successful, the School must follow the project by sustained advocacy for the benefits of research material and data preservation.

For the community: it is important to demystify digital preservation and express the risks, benefits and approaches in accessible and relevant ways.

For the community: it is possible for libraries to provide useful support in the absence of high-level research data management planning support within the institution.

## **10. Implications**

The training materials will need periodic up-dating as experience is gained with the topic and as technology develops. Releasing the materials under a share-alike licence should enable others to do this to the benefit of the whole community.

As mentioned previously, the School will need to implement sustained advocacy for the benefits of research material and data preservation.

As researchers move towards depositing more of their material and data in a repository, the repository will need to be developed and expanded. Although it is hard to forecast the demand and growth, provision should be made for the development of the School's infrastructure to keep pace with demand.

## **11. Recommendations**

1. The library should introduce research data preservation as a theme in its staff development programme as an important aspect of reskilling for research support.
2. The library should introduce research data preservation as a theme in its research student training programme. The materials provide for: inclusion in PhD student induction; a dedicated course; inclusion in existing information literacy courses.
3. The School should develop training in research data management, of which data preservation is only one part. The scope of research data management means that other units at LSE will need to be involved, not just the library.