

The Data Management Skills Support Initiative: Synthesising Postgraduate Training in Research Data Management

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ABSTRACT

In this paper, we describe the context, methods and findings of the Data Management Skills Support Initiative ('DaMSSI'), which supported the five JISC Research Data Management Training Materials ('RDMTrain') projects of the JISC Managing Research Data programme ('JISCMRD') in developing discipline-focused postgraduate training units in research data management. The Initiative tested the effectiveness of two skills frameworks and produced a comparison and synthesis of training approaches by the RDMTrain projects. DaMSSI also assisted in the production of a number of guidance documents to raise awareness of the importance of data management in career development.

Keywords

Training, education, skills, skills frameworks, research data management, postgraduate, UK, digital curation.

1. INTRODUCTION

The Data Management Skills Support Initiative ('DaMSSI') was co-funded by the JISC Managing Research Data programme and the Research Information Network ('RIN'), in partnership with the Digital Curation Centre, to review, synthesise and augment the training offerings of the JISC Research Data Management Training Materials ('RDMTrain') projects, a strand of the JISC Managing Research Data ('JISCMRD') programme.

2. BACKGROUND

In recent years, significant effort has been put into defining data management roles and responsibilities for those involved in the production of digital research data. The National Science Foundation's 2005 report [1] suggested a number of responsibilities that data authors should recognise, but despite these recommendations being around for some time, there is still little evidence that data management skills are being embedded

within UK postgraduate courses. Feedback from attendees at events such as the JISC Innovation Forum 2008 data management skills and capacity session [2] indicates that while some UK university departments are delivering training to their postgraduates, much more needs to be done to embed data management training into all postgraduate programmes. There is also evidence that researchers in UK HEIs are likely to respond favourably to data management support which is presented with a focus relevant to their discipline [3].

3. MAPPING AND SYNTHESIS

To improve the provision of research data management practice at postgraduate level, JISC funded the five projects of the RDMTrain strand [4], with the aim of creating a body of discipline-focussed postgraduate training units which could be reused by other institutions to stimulate curriculum change and create a greater awareness of the need for research data management skills training. DaMSSI worked with and supported the RDMTrain projects in a reciprocal relationship.

With the cooperation of the projects, DaMSSI tested the effectiveness of two skills development frameworks, namely the Society of College, National and University Libraries' ('SCONUL') Seven Pillars of Information Literacy model [5], and Vitae's Researcher Development Framework ('RDF') [6] for consistently describing data management skills and skills development paths in UK HEI postgraduate courses.

The Initiative mapped individual course modules from each project to the two frameworks and basic generic data management skills were identified alongside discipline-specific requirements [7]. Along with highlighting issues about the value of the RDF and Seven Pillars models themselves, the mapping of the projects' course outputs to the models suggested that there was consistency in the data management skills required across the disciplines, despite variety in the arrangement of course modules among the projects. Discipline-specific variations through examples and case studies constituted the main ways courses were further customised.

The mapping and feedback from the projects allowed DaMSSI to identify the extent to which the two models appeared useful for describing and supporting data management training. Overall, we found that the models were potentially useful for describing and embedding courses, but at the same time needed to offer clearer

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definitions and more detail on information handling and data management. These findings were fed back to SCONUL and Vitae to help in the further refinement of their models, and both organisations have begun to implement changes as a result.

DaMSSI then embarked on subsequent synthesis work to explore the findings from the mappings further, analysing the projects' own conclusions, final course materials and feedback from students to see if there was agreement with what the mapping had suggested. The project found that generic principles applied across all disciplines, but discipline-specific definitions, examples and exercises were seen as beneficial by both the projects and course participants to demonstrate relevance. Courses that successfully balanced the need for discipline-specific detail with keeping training relatively brief and concise showed better delegate retention, and face-to-face sessions were liked by delegates as a way to share experiences. Data management plans (DMPs) which offered discipline-specific interpretation proved particularly popular, yet despite this students were still reluctant to put effort into DMPs unless there was specific requirement from the institution or funders.

The findings were then refined into a set of recommendations (see section 5).

4. DATA MANAGEMENT SKILLS

DaMSSI supported the production of a number of guidance documents to raise awareness of the importance of data management in a variety of careers. The profiles of conservator, social researcher, archaeologist, clinical psychologist and data manager were produced to link in with the disciplines covered by the RDMTrain projects. The profiles have the added purpose of helping to highlight the potential role of professional bodies in promoting and supporting data management skills development amongst professionals in their fields.

DaMSSI also worked alongside the RIN Information-Handling Working Group on a number of initiatives, including contributions to a taxonomy for an information-handling 'lens' for the RDF, which will be published in late 2011.

5. RECOMMENDATIONS AND FUTURE DEVELOPMENT

DaMSSI has drawn together the following list of recommendations for future providers of data management training, based on its findings:

Work closely with disciplinary experts to ensure that terminology used within courses is accurate and clear, including agreeing a basic definition of core concepts such as what 'data' can be within the discipline;

Keep overviews and central descriptions of topic areas basic and generic, introducing the topic at a digestible level and allowing for easier integration into existing larger research methods courses;

Interlace generic with discipline-specific examples, references and case studies wherever possible, highlighting relevance, engaging audience and putting basic points into context;

Translate jargon for the audience, explaining principles and issues in language researchers/students can understand;

Offer access to customised DMP guidance for the discipline so students can produce plans specifically relevant to them;

Have trainers with extensive knowledge of the discipline, who can provide the context and interlaced examples that engage students and make the topic seem relevant to them;

Offer training in the basic principles of data management at an early stage in postgraduate studies, allowing students to begin their project using best practice;

Be concise, with basic modules short enough to maintain interest and be integrated into larger research skills courses;

Deliver face-to-face training, as attendees find the opportunity to exchange experiences and thoughts with others invaluable. However students also want access to online training materials for ongoing reference and for those unable to attend courses in person;

Stress the potential benefits associated with good data management practice, such as helping researchers to secure funding and meeting legal requirements;

Work with professional bodies and funders to endorse and promote good data management practice, helping students and researchers to have support and potential reward for their efforts from leaders and funders within their discipline.

The work begun by DaMSSI is now being taken forward by the RIN and DCC through the analysis of longer term data management skills development for specific disciplines, and of current UK LIS courses against the skills identified by DaMSSI and the RDMTrain projects. There have been expressions of interest in extending the suite of career profiles by the DCC, RIN, professional bodies and some international partners. The EU-funded DigCurV project may also incorporate the findings of DaMSSI into their design and development of a digital curation training curriculum.

6. ACKNOWLEDGMENTS

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