Research Data Management and Information Literacy

New Developments at New Zealand University Libraries

Katrin Steiner[1]

Grafschaft 31, 48163 Münster, Germany
katrin.steiner@mailbox.org

Keywords: Research data management, information literacy, university library, New Zealand

1 Introduction

Dealing with research data as the basis of academic research is a new field for libraries. Their role and scope in this new field is still being discussed and gains importance within the changing reality of the digital academic research setting. In Anglo-American countries, the concept of information literacy has been broadened and now includes the whole academic research process as well as dealing with research data.

Research data management activities, in particular with regard to information literacy, have mainly been developed and examined in the USA, Great Britain and Australia. To complete the picture, the author examined the situation at New Zealand university libraries. New Zealand has a small but well-

1 The underlying thesis (handed in 20th December 2013) was part of my Master in Library and Information Science, a Master program of the Institute of Information Science at Cologne University of Applied Sciences.

In: F. Pehar/C. Schlögl/C. Wolff (Eds.). Re:inventing Information Science in the Networked Society. Proceedings of the 14th International Symposium on Information Science (ISI 2015), Zadar, Croatia, 19th–21st May 2015. Glückstadt: Verlag Werner Hülsbusch, pp. 562–568.

developed tertiary education system and can, apart from some minor national specifics, serve as a model to see more clearly which factors and problems have to be taken into account when setting up research data management services.

2 Literature review

Important models in research data management are the Curation Lifecycle Model as developed by the British Digital Curation Centre (cf. Higgins 2008) and the Data Curation Continuum described by Treloar and Harboe-Ree (2008). Core skills for data management were first described by Donnelly (2008), while Corrall (2012) identified nine areas in which (academic) libraries could become active. The discussion on information literacy with regard to research data has just started, and there is no clear definition yet. In Britain, SCONUL (2011) and the information literacy lens on the Vitae Researcher Development Framework (Vitae 2012) provide two helpful models. Both stress that to identify which information could provide the best material to answer an information need, finding, producing and dealing with research data is important: Information literacy today not only encompasses published information but also (underlying) data. Carlson et al. (2013) define twelve competencies composing "data information literacy", for example "Data Processing and Analysis, Data Curation and Reuse, Data Management and Organization, […] Ethics and Attribution, [and] Metadata and Data Description" (Carlson et al. 2013: 207). The situation in New Zealand has so far only been described in two studies. Brown (2010) and Corrall et al. (2013) showed that New Zealand, in comparison to activities in the UK or the USA, lags behind in this new field.

3 Methods

The author conducted qualitative interviews with experts responsible for research services at six out of eight New Zealand university libraries. The interviews were conducted in March/April 2013 at the respective libraries.

Topics were existing research data services, target groups, the internal and the campus view on the new library role, problem areas and structural approaches to learn about possible solution strategies. The interviews were recorded digitally, fully transcribed and analyzed using a Grounded Theory approach (cf. Meuser & Nagel 2002: 80–91).

4 Results

The analysis of the interviews revealed that New Zealand university libraries already offer services in six areas (cf. fig. 1): Three out of six libraries provided support for researchers, for example in form of explanations on how to save data in a repository. This is to be seen in contrast to long-term services in advice programs which were being offered at two university libraries. Furthermore, two universities provided repositories for saving data from master theses or dissertations.

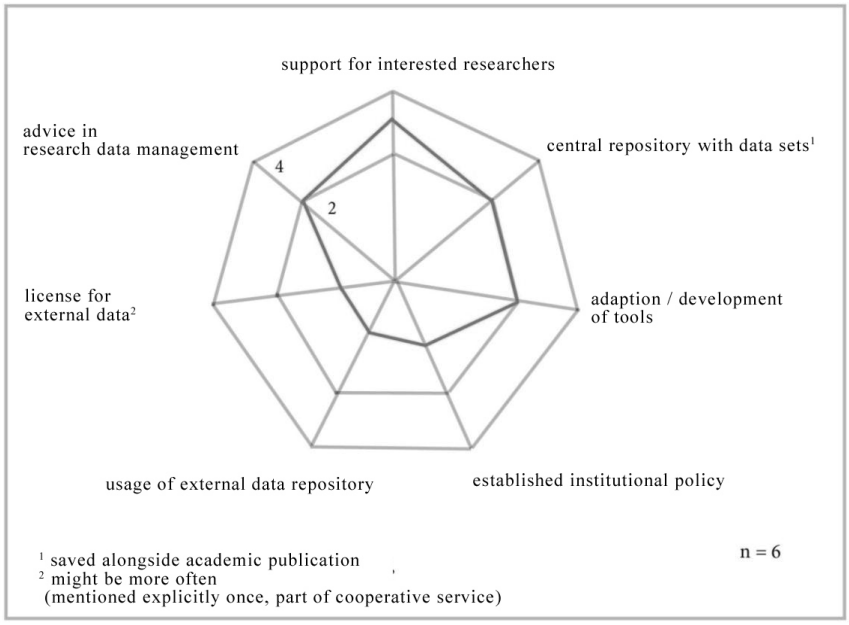

Figure 1. Research data support services at New Zealand university libraries according to the interviews (spring 2013)

The analysis of the interviews also revealed six problem areas for the establishment of research data management services (cf. fig. 2). The most prevalent problem area was the role of researchers as their interests and needs differ widely according to their field of research and their willingness to share research data with their respective communities. Furthermore, five out of six library experts stressed that research data management was not a topic on university level. Four out of six also mentioned that the national research policy did not effectively force researchers to share their data where possible, that technological questions were still to be discussed, that the debate on open data / shared data had not yet progressed far enough, and that universities and their libraries were in a fix as the tertiary system forced them to compete with one another and thus rendered a collaboration difficult.

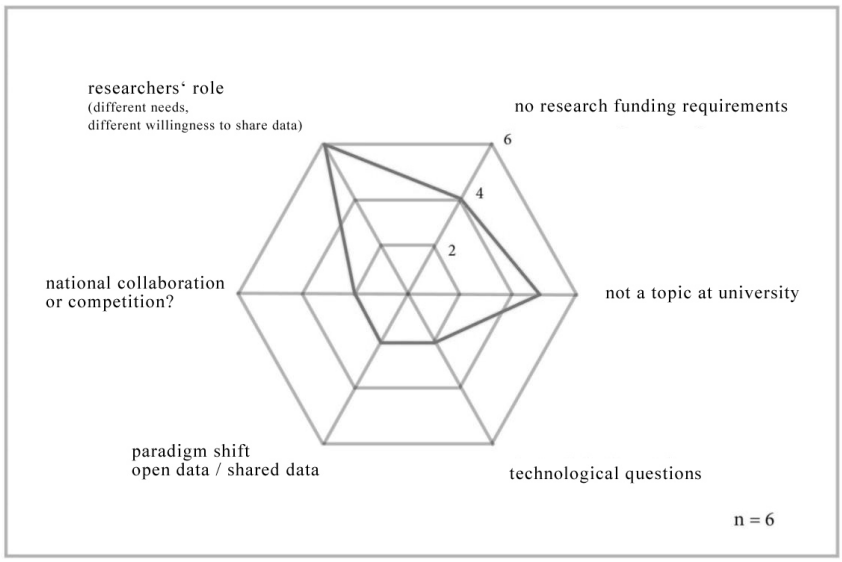

Figure 2. Problem areas for establishing research data support services at New Zealand university libraries according to the interviews (spring 2013)

5 Discussion

Services in research data management are still in their infancy in New Zealand. The problem areas explained above affect different institutional levels.

In an ideal setting, questions on all these levels have sufficiently been discussed: There is a supportive national funding policy propagating open data, the roles of institutions on university level have been clarified, and the different services within the university library itself are well-established. The technological basis for research data management is reliable and easily accessible (cf. fig. 3):

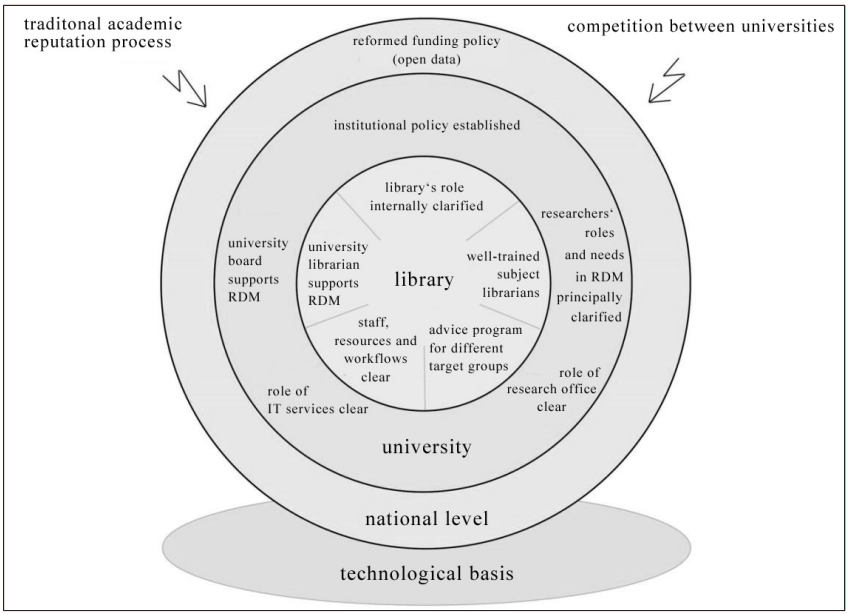

Figure 3.
Problem factors in research data management as seen from a library's point of view

Structurally and conceptually, the holistic *Research Content Ecology* model of Lincoln University in New Zealand can serve as an example for the German context – and perhaps for other European countries – on how to establish a university-wide service and technological system for the support of research activities and the enhancement of researchers' information literacy.

At Lincoln University, information literacy and research data management activities are coordinated and provided by Library, Teaching and Learning (LTL), an interdisciplinary team of researchers, teachers, librarians and a psychotherapist. The team closely collaborates with other university institutions, for example the research office, and aims at the whole university with its work. Lincoln *Research Content Ecology* can be linked back to Nardi

and O'Day's comprehensive concept of *information ecology* in which they stress that the interaction of people within a system is paramount and that technology should be judged according to its effectiveness in facilitating the activities of people within that system (1999: 66).

LTL perceives academic work as a holistic process which encompasses dealing and producing data, different stages of the research and publication process as well as material that might not yet be perceived as relevant research data. Such material is archived in the Lincoln Community Archive and may become useful for future research activities. LTL's work already includes many aspects that are part of the Vitae Research Development Framework (RDF). LTL for example regularly stresses the relevance of research data management in orientation programs for doctoral students and also informs about the Lincoln University Open Access / Open Data policy and different publication models. This can be linked to the RDF Domain A1 ("Understands what constitutes robust and reliable data creation and the importance of good data management for analysis of information / data") and C1 ("Understands information / data ownership, and by extension the implications of copyright and licensing" (Vitae 2012). Individual advice services and guideline material for dealing with research data have yet to be developed.

Lincoln *Research Content Ecology* and LTL thus not only draw on recent developments in the information literacy and research data management debate but also provide a structural approach that may be worth-while for adaption at other universities. The holistic perspective on the academic research process in particular can help to develop support services for every phase and thus foster new (research) ideas across campus.

References

Brown, E. (2010): "'I Know what You Researched Last Summer': How Academic Librarians are Supporting Researchers in the Management of Data Curation". *The New Zealand Library & Information Management Journal*, 52 (1), 55–69. http://www.lianza.org.nz/sites/default/files/files/nzlimj_vol_52_issue_no_1_oct_2010.pdf <3.1.2015>.

Carlson, J., Johnston, L., Westra, B. et al. (2013). "Developing an Approach for Data Management Education: A Report from the Data Information Literacy Project".

International Journal of Digital Curation, (1), 204–217. http://www.ijdc.net/index.php/ijdc/article/download/8.1.204/306 <3.1.2015>.

Corrall, S. (2012). "Roles and Responsibilities: Libraries, Librarians and Data". In: Pryor, G. (Ed.). *Managing Research Data*. London: Facet Publishing, pp. 105–133

Corrall, S., Kennan, M., Afzal, W. (2013). "Bibliometrics and Research Data Management Services: Emerging Trends in Library Support for Research". *Library Trends*, 61 (3), 636–674.

Donnelly, M. (2012). "RDMF2. Core Skills Diagram". *Research Data Management Forum*. http://data-forum.blogspot.com/2008/12/rdmf2-core-skills-diagram.html <3.1.2015>.

Higgins, S. (2008). "The DCC Digital Curation Lifcycle Model". *The International Journal of Digital Curation*, 3 (1), 134–140. http://www.ijdc.net/index.php/ijdc/article/download/69/48 <3.1.2015>.

Meuser, M., Nagel, U. (2002). "Das Experteninterview – Vielfach erprobt, wenig bedacht. Ein Beitrag zur qualitativen Methodendiskussion". In: Bogner, A., Littig, B., Menz, W. (Eds.). *Das Experteninterview. Theorie, Methode, Anwendung*. Opladen: Leske + Budrich, pp. 71–93.

Nardi, B. A., O'Day, V. L. (1999): *Information Ecologies*. Cambridge, Massachusetts, London: MIT Press.

SCONUL (2011). The SCONUL Seven Pillars of Information Literacy. A Research Lens for Higher Education. http://www.sconul.ac.uk/sites/default/files/documents/researchlens.pdf <3.1.2015>.

Treloar, A., Harboe-Ree, C. (2008). "Data Management and the Curation Continuum: how the Monash Experience is Informing Repository Relationships". In: *VALA 14th Biennial Conference. Melbourne, 5.–7.2.2008*. http://www.valaconf.org.au/vala2008/papers2008/111_Treloar_Final.pdf <3.1.2015>.

Vitae (2012). Information Literacy Lens on the Vitae Researcher Development Framework using the SCONUL Seven Pillars of Information Literacy. https://www.vitae.ac.uk/vitae-publications/rdf-related/information-literacy-lens-on-the-vitae-researcher-development-framework-rdf-apr-2012.pdf <3.1.2015>.