



# REVIEW OF LITERATURE



## RESEARCH DATA MANAGEMENT SERVICES IN ACADEMIC RESEARCH LIBRARIES AND PERCEPTIONS OF LIBRARIANS

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### ABSTRACT:

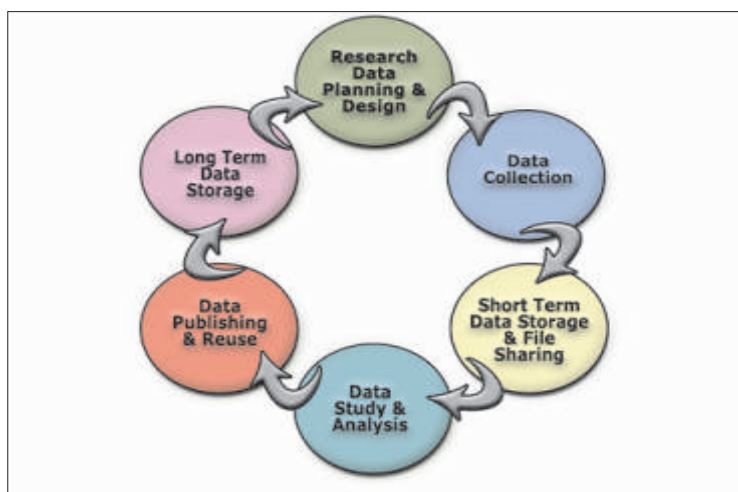
The emergence of data intensive science and the foundation of information administration orders have propelled scholarly libraries to create look into information administrations (RDS) for their personnel and understudies. Here the aftereffects of two examinations are accounted for: curators' RDS rehearses in U.S. what's more, Canadian scholastic research libraries, and the RDS-related library arrangements in those or comparable libraries. Results demonstrate that RDS are right now not oftentimes utilized in libraries, but rather many administrations are in the arranging stages. Specialized RDS are less basic than educational RDS, RDS are performed more frequently for workforce than for understudies, and more library chiefs trust they offer open doors for staff to create RDS-related aptitudes than the level of administrators who see such chances to be accessible. Curators require chances to take in more about these administrations either on grounds or through participation at workshops and expert meetings.

**KEYWORD:** *Research data management, Academic libraries, research libraries, perceptions.*

### INTRODUCTION

Science has entered a "fourth paradigm" that is more collaborative, more computational, and more data intensive (Hey, Tansley, & Tolle, 2009a) than the previous experimental, theoretical, and computational paradigms. This emerging scientific paradigm is often referred to as e-science or e-research (Hey, Tansley, & Tolle, 2009b). Increased reliance on technology in all parts of scientific endeavor, or cyberinfrastructure, and the

establishment of data management and data sharing mandates by many research funding bodies<sup>1</sup> have motivated academic libraries to take action with regard to the shifting needs of their faculty and students and consider how best to engage in e-science through the development of library-based research data services (RDS). In the U.S. and Canada, individual large academic research libraries often lead these activities (Association of Research Libraries, 2010). The aftereffects of



examinations concerning (a) librarians' RDS practices in U.S. furthermore, Canadian scholastic research libraries and (b) the RDS-related library arrangements in a similar kind of libraries are accounted for here. These studies establish a baseline assessment of the RDS involvement of individual librarians as well as libraries as institutions. The results inform and enable practitioners, administrators, and educators to make strategic RDS plans in academic research libraries and guide the evolution of curricula in LIS education.

### PROBLEM STATEMENT

The emerging need for research data management is prompting library directors to plan for additional RDS to be offered by their libraries, and at the same time many librarians are looking for opportunities to develop their RDS-related skills. But are library directors and librarians on the same page regarding RDS? In other words, do library policies in this regard align with librarians' perceptions? Misalignment can hinder effective start-up of RDS. This study focuses on the alignment issue by comparing data from library directors on RDS currently offered or planned, with data from librarians on RDS currently performed. Similarly, comparisons are made between library directors' perceptions on how their libraries are providing RDS development opportunities for staff and perceptions of librarians on the availability of such opportunities in their library. Insight on the part of the library community gained from this study could raise awareness of such misalignment, followed by corrective action leading to more efficient development of RDS.

This paper combines the findings from two surveys to answer several questions regarding North American academic research libraries and their involvement in RDS, including:

1. How many academic libraries are actively engaged in RDS?
2. How many academic libraries are planning to be involved in RDS in the near future?
3. Are libraries offering opportunities for their librarians to gain RDS related skills?
4. What specific types of RDS are being offered?

Libraries may already be offering or planning to offer RDS and they may have developed plans to do so. However, it is the librarians who are on the front lines in terms of implementing these plans. Therefore, two separate studies were conducted; the first – the library study – surveyed directors of academic libraries in the U.S. and Canada and sought answers for the questions above. Librarians were surveyed in an attempt to answer such research questions as:

1. How many academic librarians are currently involved with RDS in their libraries?
2. Do librarians think they have the disciplinary background and training to offer RDS?
3. Do librarians feel they have opportunities to learn what they need to know about RDS?

Finally, by studying both the directors of academic libraries to get official library policy and the front-line librarians who work at academic research libraries to get their perceptions and personal perspectives, the alignment between library practices and librarians' perceptions of the development opportunities open to them regarding research data management services can be evaluated. Although results from each of these individual studies have been previously reported, this article compares the results for the first time in order to determine if the practices and opportunities for training in research data service provision in academic research libraries are in alignment with the perceptions of the librarians as to their preparation and opportunities.

### PROFESSIONAL DEVELOPMENT OF ACADEMIC \ COLLEGE LIBRARIANS

**The role of the librarian remains fundamentally unchanged:** The consequences of the web have been enormous, and the pace of change shows little sign of slowing. Be that as it may, in a general sense, our part remains what it generally has been - to help our establishments in the conveyance of their exploration and learning procedures. Bookkeepers need to do to accomplish this, however, is fundamentally not the same as what it was before the blast in arranged computerized data.

**Libraries are becoming about supporting study, not storing books:** The suspicion that curators may stop to

require library structures as they move towards advanced accumulations has not been borne out. There is colossal interest for space from understudies, yet libraries are getting to be individuals spaces rather than book spaces. Manchester's new Learning Commons will be controlled by the library, however will have no print accumulations; it is intended to help study and learning, and proceeds with a subject of comparative structures somewhere else in the UK and past.

**Librarians need to become effective marketers:** In the past, there has been no need. Librarians have been the gatekeepers of knowledge, and the users have had no choice but to engage with them. Before, there has been no need. Curators have been the guards of learning, and the clients have had no real option except to connect with them. Presently they do have a decision, they can get to information on the web, so administrator must draw in more successfully than they have previously. Having said that, bookkeepers are successful strategists, and they are great at creating plans, administrations and business cases to position libraries in new ways.

The administration of individuals at work is a vital piece of the administration procedure. To comprehend the basic significance of individuals in the association is to perceive that the human component and the association are synonymous. An all around oversee association for the most part observes a normal laborer as the root wellspring of value and profitability picks up. Such associations don't look to capital venture, yet to workers, as the key wellspring of change. An association is powerful to how much it accomplishes its objectives. A successful association will ensure that there is a soul of collaboration and feeling of duty and fulfillment inside the circle of its impact. With a specific end goal to make representatives fulfilled and focused on their employments in scholastic and research libraries, there is requirement for solid and compelling inspiration at the different levels, divisions, and segments of the library.

#### **LIBRARIAN ELIGIBLE FOR THE POST OF COLLEGE PRINCIPAL**

Government of Maharashtra High and Technical Education Ministerial has used Government decision that college librarian should be eligible for the post of Principal of college. Wide letter no. USa-2010/(472/10) Vishi-1 high and Technical education department, Mumbai in dated, 28 July 2010.

This G.R. is a mile stone for college librarian and librarian Movements College from the G.R. college librarian status become equal as other faculty teacher.

#### **CONTRIBUTION OF A LIBRARIAN IN THE DEVELOPMENT OF COLLEGE LIBRARY**

Modern library services calls upon the acquisition and procession of a wide variety of materials with which it can render better services to its target students. This is not a skilled job. It demands a sort of dedication that the housewife brings to the running of her home. India is a developing country and the important of libraries and information centers is strongly felt to the extent that information is regarded as vital resources for national development. The standard library is determined by growth of materials and quality of staff. The library staff purchased new books and journals, audio-visual and documents for growth of academic library. It is a one of the factor of academic library development because the academic library provides different services such as book issue service, reference service, and digital library service.

Sound knowledge base, pertinent skills and pro-active positive mind set are the essential components of a competent library and information professional. Do we have that? If not, then the future of academic libraries is certainly uncertain. If yes, then there is no reason to worry about the future of academic libraries.

With the impact of ICTs, we are having digital libraries, as well as library and information networks. Academic libraries need to respond to the growing and diversifying information needs of the end-users. Academic libraries must become a local gateway to world's knowledge and information. The biggest and critical issue is how to manage change in the academic libraries so that we do not suffer the destiny of dinosaurs. The future is uncertain but bright. We will have to create a relative balance of printed publications and digital documents. Our future library must be a hybrid library which must be user-centered and expert-assisted.

#### **LITERATURE REVIEW**

The literature related to this paper includes studies of librarians, libraries, and RDS; and papers that

present case studies or recommendations for how librarians and libraries can develop RDS. In addition to surveys of the current status of RDS in libraries in several countries, current literature covers a range of recommended specific services. The literature shows that RDS or e-science services in libraries are discussed in the library literature, and are being offered by some research libraries, but are not yet being offered by most. Peters and Dryden (2011) found that the most important data services needed by researchers are mainly directional ones: grant proposal support including data management planning, locating data-related services, publication support, and specific data management assistance. Another study (Bach et al., 2012), however, found that, of the surveyed biodiversity data repositories, most only deliver low-level support for users.

Many librarians and researchers engaged with e-research have discussed the possible roles for both libraries and librarians in providing RDS (Association of Research Libraries, 2006; Council on Library and Information Resources, 2008; Gabridge, 2009; Gold, 2007; Hey & Hey, 2006; Jones, 2009). One third of participants in a UK survey (Brown & Swan, 2007) believed that within five years “manager of datasets from e-science/grid projects” (p. 47) will be a major obligation of a librarian, with another third assigning it a secondary responsibility. MacColl (2010) advises libraries take on a more comprehensive and strategic role: libraries should be involved throughout the research process and need to be actively engaged in curating, advising, and preserving research outputs. Some additional suggested roles for libraries are to develop researchers' data-awareness, to adopt a data archiving and preservation role, and to train data librarians.

## METHODOLOGY

In order to compare like-to-like (that is, librarians in research libraries with policies of research libraries), the library data reported here are a subset of a larger study that surveyed all types and sizes of academic libraries in the U.S. and Canada. The full study sought to answer, in addition to the research questions addressed here, what sizes and types of academic libraries are most involved in RDS and how involvement varies by type and size of academic library.

As in the academic library study, the librarian data reported here also represent a subset of a larger study. In the larger study, librarians employed by ARL member libraries were surveyed if their area of responsibility seemed likely to currently, or in the future, include RDS. The full study sought to answer how librarians' opinions of their preparedness to provide RDS, their library's support for their professional RDS development, the importance of RDS for libraries and their associated institutions, and the contributing or inhibiting factors for librarian involvement in RDS, varied with their current degree of engagement with RDS. The results of this part of the full study were reported in Tenopir, Sandusky, Allard, and Birch (2013).

The full results indicated consensus that the absence of RDS would adversely affect the institution's perception of the library in terms of relevance and prestige, that provision of RDS would augment the institution's research impact, and that the absence of RDS would put the institution at a disadvantage for grants. In addition, participants strongly rejected the idea that RDS would be a distraction and the idea that RDS are unnecessary and strongly affirmed that RDS fits the traditional role of librarians as stewards of scholarship (Tenopir et al., 2013).

The current analysis compares, for the first time, the frequency of RDS provision in academic research libraries with the services offered by the librarians.

All of the respondents to the librarian survey work in comprehensive research-extensive institutions, while libraries in the libraries survey included associate, baccalaureate, and doctorate degree-granting institutions. Therefore, in order to remove a confounding factor from comparisons between the two survey results, only libraries at doctorate degree-granting institutions are included in this analysis. That way, although it is not known whether librarian respondents come from the same institutions that responded to the libraries survey, the official policies of academic research libraries can be better compared with the perceptions of librarians who work in that type of institution.

Questions to both library directors and librarians covered specific RDS offered or planned to be offered in their institutions, as well as opportunities for professional development on RDS issues for the professional staff. Half of these questions concerned informational or consulting RDS and half were about a greater level of

involvement with technical/hands-on RDS. Informational/consulting services cover a wide range of services, from consulting on data management plans through discussing RDS with others:

- Consulting with faculty, staff, or students on data management plans.
- Consulting with faculty, staff, or students on data and metadata standards.
- Outreach and collaboration with other RDS providers either on or off campus.
- Providing reference support for finding and citing data or datasets.
- Creating Web guides and finding aids for data, datasets, or data repositories.
- Discussing RDS with other librarians, or other people on campus, or RDS professionals.
- The technical or hands-on services show another level of involvement with RDS:
- Providing technical support for RDS systems (e.g., a repository, access, and discovery systems).
- Deaccessioning or deselection of data or datasets for removal from a repository.
- Preparing data or datasets for deposit into a repository.
- Creating or transforming metadata for data or datasets.
- Identifying data or datasets that could be candidates for repositories on or off campus.
- Directly participating with researchers on a project (as a team member).

Library directors were asked whether each of the RDS were currently offered or planned to be offered in the future through the library. The answer choices were:

1. Not available, and we currently have no plans to offer it.
2. Not available, but we plan to offer it in more than 24 months.
3. Not available, but we plan to offer it within 13–24 months.
4. Not available, but we plan to offer it within 12 months.
5. Our library currently offers this service

## CONCLUSION

It is clear that some academic research libraries are offering a variety of research data management services and more plan to do so within the next two years. Most commonly these services are extensions of traditional informational or consultative services, such as helping faculty and students locate datasets or repositories. A small, but growing, number of libraries are becoming more involved with research data, from helping with data management plans to preparing and preserving research data for deposit in data repositories.

Many of the librarians who work in academic research libraries feel they have the subject knowledge necessary to help their constituents with research data services, but need the opportunity to take advantage of continuing education. Regardless of whether consultative or hands-on administrations, librarians require chances to take in more about these administrations either all alone grounds or through participation at workshops and expert meetings. Working with others on campus, as both teachers and joint learners of research data service specifics, will help the library play a shared role in building the future of research data at their universities.

The comparisons drawn here between library policy on RDS and the perceptions of front-line librarians as they implement this policy, indicates some misalignment. However, that is to be expected, as most libraries are in the early stages of making RDS available. Increased awareness of this issue within the academic library community is likely to result in more effective development of RDS.

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