

Focusing on Research Data Services



Data-intensive research, often labelled as Research 2.0 requires new approaches to research activities and to library services in the natural sciences, the social sciences and the humanities. It makes use of the internet's power that enables different new forms of networking, encouraging openness and providing the possibility to access and manipulate massive amounts of data (Koltay, Spiranec and Z. Karvalics, 2015). Even though researchers use new tools together with the traditional ones (Weller, 2011), they efforts require help from the libraries.

Traditionally, academic libraries have focused mainly on activities, connected to the collecting journals and monographs (English, 2004) and a number of researchers continue to see libraries only as dispensaries of books and articles (Jahnke, Asher and Keralis, 2012). Nonetheless, there is also a new focus in libraries' work: research data services, the main components of which are research data management (RDM) and information literacy education (Corral, 2014), especially in the form of data literacy education.

Below, we name some of the fields, where libraries and librarians can show their value and ability to support Research 2.0.

As said above, the first and biggest task is RDM. It can be defined as a comprehensive set of activities for the organization, storage, access, and preservation of data (Semeler, Pinto, and Rozados, 2017). Librarians' ability to support researchers' RDM needs is influenced by a variety of factors, but it is utterly important to know, how researchers view the library. Librarians often have rightful concerns about researchers' unfavourable perception of their roles. Nonetheless, they want to support researchers' RDM efforts, and see it as a way of transforming perceptions about the value libraries (Faniel and Connaway, 2018), even if some librarians perceive the value of the services that the libraries can offer higher than teaching staff members and researchers do (Klain Gabbay and Shoham, 2017).

RDM activities include consulting with researchers on Data Management Plans (DMPs), on metadata standards and providing reference support. These activities are based on a personal, client-librarian relationship, thus they are familiar to librarians. Many of the skills, needed for assisting in producing DMPs are effectively the same as the ones required for any informational service, but librarians are required to be familiar with funder requirements, relevant standards, and local data management processes (Cox and Verbaan, 2018).

Creating or transforming metadata for datasets may be coupled with providing help in selecting and preparing datasets to be deposited in repositories, deaccessioning or deselecting them.

There are similarities between traditional and data reference interviews, but the latter may consist of more questions and may not always identify the perfect source (Rice and Southall, 2016). Similarly pointing towards reference works and authoritative texts, data librarians may to assist researchers in finding existing datasets (Federer, 2014).

Although citing data is much more complex than citing research publications, data citation is an unquestionable necessity (Silvello, 2018).

An important new development is the growing attention towards data literacy that can be defined as a specific skill set and knowledge base, which empowers individuals to transform data into information and into actionable knowledge by enabling them to access, interpret, critically assess, manage, and ethically use data (Koltay, 2015). Accordingly, data literate people have the following abilities:

- Knowing how to select and synthesize data and combine them with other information sources and prior knowledge.
- Identifying the context in which data is produced and reused;
- Recognizing source data value, types and formats;
- Determining when data is needed;
- Accessing data sources appropriate to the information needed;
- Critically assessing data and their sources;
- Determining and using suitable research methods;

- Handling and analysing data;
- Presenting quantitative information;
- Applying results to learning, decision making or problem-solving;
- Planning, organizing and assessing ourselves throughout the process (Calzada Prado and Marzal, 2013).

In the present research environment, information overload is complemented by data overload, caused by the abundance of data (Koltay, 2017). This is one of the reasons, why supporting individual researchers has come to the forefront. Such support involves the following activities:

- Providing informal alerting services;
- Purchasing requested resources;
- Answering in-depth reference questions;
- Creating visual representations of data;
- Co-researching about scholarly publishing in a specific area of knowledge;
- Co-researching the scholarship of teaching;
- Consulting about searching (Brydges and Clarke, 2015).

Raising awareness of varied issues also may become a growingly important service activity, even though – while the librarians are the ones, who can make researchers aware of their existence – such services are non-traditional in the sense that they are not offered directly by the libraries themselves.

Despite their restricted use, academic social network sites (SNS, social media services, designed for researchers), such as Academia.edu¹, ResearchGate², Mendeley³ and Kudos⁴ are worth of attention. They are not sullied by libraries, but raising awareness of the existence, advantages and disadvantages could rest with librarians.

The Diamond, the Gold and the Green routes of Open access to scientific publications remain important and libraries should retain their role in it, not losing sight of various issues. Article processing charges (APCs) and the presence of predatory publishers are ones of these and can be best approached by making use of the Directory of Open Access Journals (DOAJ⁵) (Berger and Cirasella, 2015). Open data is another component of Open science by requiring data to meet the criteria of being accessible, useable, assessable and intelligible (Royal Society, 2012).

Alternative metrics (altmetrics) of scientific output are gaining momentum, although alternative approaches may not become easily institutionalized and accepted by the communities of researchers or other research stakeholders. Whatever their future role, librarians should stand by with informed advice also on related issues.

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¹ <http://www.academia.edu/>

² <http://www.researchgate.net/>

³ <https://www.mendeley.com/>

⁴ <https://www.growkudos.com/>

⁵ <https://doaj.org/>

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