Chapter 3
Research Data Management in an Academic Library

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ABSTRACT

Academic libraries need to store, preserve, and manage scholars' intellectual output, hence the importance of research data management in academic libraries. This chapter focuses on research data management in academic libraries, and it aims at examining the concept of research data, which is referred to as the evidence used to inform or support research conclusions, while data management, on the other hand involves planning for and creating data, organizing, structuring, and documenting data, backing up and storing data, and preparing data for analysis to share with others or to preserve for the long-term.

INTRODUCTION

There is a notion that organizations, institutions, and government agencies across the globe are increasingly recognizing the importance of research data management, such as the documentation, curation, and preservation of research data. Research Data Management (RDM) activities ensure long-term value and utility of research data for new analyses and replication of study findings. Academic libraries are not left out in recognizing the importance of research data management in library activities. According to Ball (2013), many libraries are keen to take on new roles in providing support for effective research data management (RDM), but lack the necessary skills and resources to do so.

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According to Whyte & Tedds (2011), research data management concerns the organisation of data, from its entry to the research cycle through to the dissemination and archiving of valuable results. It aims to ensure reliable verification of results, and permits new and innovative research built on existing information. Research Data Management (RDM) is referred to as the active management and appraisal of data over the lifecycle of scholarly and scientific interest. Research data management entails all activities and processes which are undertaken or done to ensure that research data is properly documented, organised, stored, archived and curated so that it is available for access, use and reuse whenever the need arises after the research has been done and reported (Tripathi, Shukla & Sonker, 2017).

Research data management as part of the research process aims at making the research process effective and helpful to researchers. It is an essential aspect of research process, which is paramount in achieving scientific innovation in a data-oriented research. Academic libraries' role of collecting, gathering, preserving, and disseminating information resources to its users cannot be achieved without adequate research data management. Academic libraries need to store, preserve, and manage scholars' intellectual output, hence, the importance of research data management in academic libraries. The emerging need for research data management is prompting library directors to plan for additional Research Data Services (RDS) to be offered by their libraries, and at the same time many librarians are looking for opportunities to develop their RDS-related skills. Some scholars have opined that the world has seen university libraries positioning themselves to support and gain authority on data management issues as this follows upon realising the importance of research data and proper research data management.

RESEARCH DATA

Rice (2009) defined research data as data collected, observed or created for the purposes of analysing to produce original research results. While, according to Kennan & Markauskaite (2015), data may not necessarily be used for research alone since the data include administrative records, log files of learning management systems and web portals and other behavioural traces used in learning analytics and traces of individual lives available from social media. The authors went further to state that research data, just like data sources, are heterogeneous because of the many forms depending on origins, research problem addressed and the discipline of the researcher, and that in the life and physical sciences. Researchers gather and produce data mostly through observations, experiments and computer modelling whilst in the social sciences researchers gather and produce data from interviews, surveys and questionnaires, and observations.

Generally, research data can be referred to as the proof used to enlighten or back up research conclusions. According to Van Berchum & Grootveld (2017), the tangible forms research data materials may take are; facts, observations, interviews, recordings, measurements, experiments, simulations, and software; numerical, descriptive and visual; raw, cleaned up and processed. From the above definition, it is obvious that it combines type, form and research phase from the perspective that all manifestations of research data need to be actively managed to achieve high-quality data that have the potential to be reused.

Research data can be divided by source or by physical format. The sources of data can be registers, existing research data, population group(s) and communications, while, physical formats of data include numerical, textual, still image, geospatial, audio, video and software. Regardless of the source and physical format of the data, data is often defined by how they are created or captured. Research data can as well be defined as the data which is generated when the researchers undertake or execute any research