

Book Review

Research Evaluation Metrics [Open Access for Researchers, 4], by Anup Kumar Das, edited by Sanjaya Mishra and B.K. Sen. UNESCO, Paris, 2015, open access e-book, 120 pages, ISBN: 9789231000829. Downloadable from <http://unesdoc.unesco.org/images/0023/002322/232210E.pdf>

The term ‘Research’ was first used in English language in 1639¹ and it is closely associated with growth and advancement of knowledge. According to Oxford English Dictionary², research is a ‘Search or investigation directed to the discovery of some fact by careful consideration or study of a subject’. Research evaluation is a systematic determination of advantage, importance and application of research results on a subject, using criteria steered by a set of standards. Research evaluation can assist an R&D organization, any program or project to assess the aims, concept, proposal, etc. for decision-making and policy formulation. Research evaluation metrics indicate some yardsticks to measure performance of research in an objective way as far as practicable. The term metric was originally derived from the Latin word *metricus*³ and French word *métrique*⁴, which means a measure for something or any mean of deriving quantitative measurement or approximation. This word was first used in 1864⁴. This word envelops a number of subject domains, e.g. general relativity (physics), networking, mathematics, software analysis, etc. One of the most well-known uses of this word is found as unit of measurement in various subjects and particularly in library and information science also. In earlier days, i.e. since the end of the World War II, there were very few metrics for evaluation of research and scholarly communication, i.e. impact factor, immediacy index, cited and citing half-lives, etc. The subject area that studies the scope, nature and various applications of several metrics is commonly known as scientometrics, though several other quasi-synonymous terms centre around this field, i.e. bibliometrics, informetrics, librmetrics, etc. These metrics were defined and practiced by the doyen of practical scientometrics and citation studies, viz. Eugene Garfield. With the advent of internet and wide use of online electronic media, social networking media, etc. as major means of scholarly communication since Twenty-first Century, several other metrics have been evolved as research assessment tool, i.e. h-index, g-index, i-10 index, eigenfactor score, altmetric indicators, etc.

UNESCO, in collaboration with the Commonwealth Educational Media Centre for Asia (CEMCA) of the Commonwealth of Learning (COL), has launched a set of open access (OA) curricula and self-directional learning (SDL) modules for researchers in March 2015⁵. This OA curriculum aims at information need of young and

early-career researchers from different academic and research institutions. The curriculum is basically meant for capacity building, awareness raising and sensitization of the new global citizens. It will be helpful for the budding academic researchers who will be absorbed into higher educational institutions and research laboratories in near future. The curriculum titled ‘Open Access for Researchers’ is an elaborate exploration of the scholarly communications processes, concepts of openness and open access, intellectual property rights and research evaluation metrics. The curriculum consists of five modules. All five learning modules have been written by experienced Indian educators and information practitioners affiliated to Indian universities, although these modules are expected to be used by universities and research universities worldwide. They are freely available online with Creative Commons (CC-BY-SA) license and downloadable from <http://unesdoc.unesco.org>. A Creative Commons license ensures the freedom of sharing, reusing and modifying scholarly or artistic content for knowledge re-creation and optimal utilization.

“Building inclusive Knowledge Societies through information and communication” is one of the key objectives for UNESCO’s Medium-Term Strategy⁶. By adopting this objective, UNESCO Member States have recognized that knowledge plays a key role in economic growth, social development, cultural enrichment and democratic empowerment. This decision of the Members States has influenced UNESCO’s Open Access program, through which the organization received a unique mandate to work on OA policy issues; bridge knowledge pools on OA across the world and build capacities to better understand Open Access. Within the overall framework of the organization’s strategy on OA, the recent launch of OA curricula for Researchers and Library Schools by UNESCO highlights its efforts for enhancing capacities to deal with open access issues. The carefully designed and developed sets of OA curricula for researchers and library & information professionals are based on two needs assessment surveys, and several rounds of face-to-face and online consultations with relevant stakeholders. The complete set of five OA modules for researchers and four OA modules for library schools is now available online and can be downloaded by clicking the following links:

OA Curriculum for Library Schools

- Module 1: Introduction to Open Access
- Module 2: Open Access Infrastructure
- Module 3: Resource Optimization
- Module 4: Interoperability and Retrieval

OA Curriculum for Researchers

Module 1: Scholarly Communications

Module 2: Concepts of Openness and Open Access

Module 3: Intellectual Property Rights

Module 4: Research Evaluation Metrics

Module 5: Sharing your Work in Open Access

The Module 4 of the researcher's curriculum entitled "Research Evaluation Metrics" consists of four units. The Unit 1 entitled "Introduction to Research Evaluation Metrics and Related Indicators" gives a broad outline of some classical citation-based terms, viz. self-citation, bibliographic coupling, half life, co-citation coupling, etc. There are various terms that flit around evaluative metric-based subject domains, which are briefly described in a Table. All citation-based indicators and classical bibliometric laws are picturesquely presented in two Figures in the book. Besides these three classical laws, there are few other laws that deserve mention, i.e. Mandelbrot's Law, Pareto's Law and Sengupta's Law, which are not mentioned here. The author-level indicators are nicely presented in a Figure and a Table. Emerging areas like altmetric indicators are also included here. As an introductory outline for the research beginners, Unit 1 is a complete and clear-cut presentation. The Unit 2 entitled "Innovations in Measuring Science and Scholarship" describes different citation-related bibliographic databases like Scopus, Web of Science, Indian Citation Index, CiteSeerX, Google Scholar Citations, etc. The new tools and indicators for performance measurement and freely available resources for the global researcher communities are described here in details. The practical examples by screenshots (in two Figures) will be helpful for the students and researchers. The Unit 3 entitled "Article and Author Level Measurements" presents the method of building up article-level metrics through counting of an article's presence in social and online media. The researcher's profile in academic social networks can be created and analysed through altmetric service providers. Such profiles enable in increasing global visibility not only of an individual's research work but also of the institutions and research team members. The steps involved in creation of

profile are described here. This unit provides hands-on training to the researchers. The Unit 4 entitled "Online Citation and Reference Management Tools" highlights five freely available online reference managers, namely, Mendeley, CiteULike, Zotero, Google Scholar Library and EndNote Basic. Of these five online reference managers, two have launched freely available desktop reference management software which can connect to their respective online databases and pull matching records to desktop system. The desktop version of reference managers freely available to researchers are: Mendeley and Zotero.

In this course module, the author's approach resonates classroom lecture and the language is very lucid with clarity that deserves acceptance to a wide audience. The way of presentation data through tables, figures and screenshots is helpful for a wide range of researchers. This attempt of UNESCO would disseminate information for knowledge upgradation to the general audience irrespective of caste, creed and nationality. We hope for further such endeavours in future.

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By Bidyarthi Dutta
Assistant Professor,

Department of Library and Information Science
Vidyasagar University, Midnapore, West Bengal