

This entails readdressing the levels of education, the needs for career instructors along with the contribution of information professionals to education, the needs specific to the private sector, to research, to the university, to the school world, to public administration, and the need for a vigorous policy on continuing education.

This publication contributes to a better knowledge of educational programs in Europe, and as one must hope, to a larger dialogue and eventual normalization among the constituents. Finally, it is a contribution to comparative and international librarianship.

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Introduction to Informetrics: Quantitative Methods in Library, Documentation and Information Science. L. EGGHE, R. ROUSSEAU. Elsevier Science Publishers, Amsterdam and New York (1990). xi + 450 pp., \$110.25, ISBN 0-444-88493-9.

"Informetrics" is a relatively new term gaining acceptance for the field of inquiry that "deals with the measurement, hence also the mathematical theory and modelling of all aspects of information and the storage and retrieval of information." (p. 1) "Bibliometrics" (quantitative studies of *recorded* information, particularly in the context of libraries and information systems) and "scientometrics" (quantitative studies of science and scientific communication) are closely related but more restricted and less theoretical areas of study. Brookes [1] has recently provided some historical perspective on the development and definition of all three terms.

Introduction to Informetrics is intended both as a textbook and as a handbook for practicing information professionals. Although aiming to appeal also to the nonspecialist and nonmathematician, some of the text will be heavy going for those without a reasonable undergraduate mathematics or statistics background. It is divided approximately equally into four major sections: statistics, operations research, citation analysis, and informetric models. The overview of descriptive and inferential statistics includes the basics, hypothesis testing, elements of probability, and sampling theory, as well as multivariate methods such as principal components analysis, multidimensional scaling, and cluster analysis. Operations research for library management includes linear programming, graph-theory methods, queuing theory, Markov processes, library circulation models, and the application of fuzzy set and heuristic methods to library management. The final two major sections present excellent comprehensive overviews of citation analysis and the bibliometric models. There is also a substantial and reasonably current bibliography, an index, and the usual basic statistical tables.

As a textbook, the lack of student exercises is a drawback, although concrete examples and sample datasets are used extensively. This is, unfortunately, quite an expensive book, especially considering that it has been produced from camera-ready typescript and printed on rather poor paper. However, it is also the most recent, and definitely the best, of the very few available general overviews of informetrics or bibliometrics. The only really comparable work would be Rao's *Quantitative Methods for Library and Information Science* [2], which is not as comprehensive as the present work and is by now becoming somewhat dated.

Introduction to Informetrics will likely prove quite useful as an introduction for the practitioner or nonspecialist, as an authoritative overview and reference for the specialist and, especially, as a textbook for use by students in graduate schools of library and Information Science.

REFERENCES

1. Brookes, B.C. "Biblio-, sciento-, infor-metrics??? What are we talking about?" In L. Egghe and R. Rousseau (Eds.). *Informetrics 89/90* (pp. 31-43). Amsterdam and New York; Elsevier: 1990.
2. Rao, I.K.R. *Quantitative Methods for Library and Information Science*. New Delhi: Wiley Eastern Limited; 1983.

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