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Library Science

1. Introduction

This paper discusses three concepts from library science that are useful when (a) organizing and searching large bodies of computerized data and information and (b) presenting the results of such searches. A library is a collection of information; library science provides concepts and methods for managing and exploiting collections of information. Many people think the concepts and methods of library science apply only to libraries in buildings, but these concepts and methods are essential when organizing, searching, and presenting information in online repositories and registries. Google Knowledge Graph, for example, implements the Predictable-Search approach. (Google Knowledge Graph is an information framework that Google is currently introducing into its infrastructure to improve the relevance and value of the information provided to users by Google searches. Predictable Search is discussed in paragraph 4 [below]).

2. Source of Information

This paper uses quotations from *Library Research Models: A Guide to Classification, Cataloging, and Computers* by Mr. Thomas Mann because his explanations of important points are well written and concise.

3. Principle of Least Effort

“This principle states that most researchers (even ‘serious’ scholars) will tend to choose easily available information sources, even when they are objectively of low quality, and, further, will tend to be satisfied with whatever can be found easily in preference to pursuing higher-quality sources whose use would require greater expenditure of effort.”

“What happens in the real world is that librarians are quite willing to pay lip service to the principle, but when implications are raised (i.e., that existing arrangements and practices must actually be changed), then the principle tends to be dismissed as insignificant or insubstantial.”¹

¹ Mann, Thomas, *Library Research Models*, Oxford University Press, New York and Oxford, 1993, pg 91

4. Predictable Search

The concept of predictability for searches provides an approach that sidesteps the weakness of keywords – inconsistency in terms and definitions when tagging and cataloging information and when searching for information.

Predictable search is “the capability of a system to move searchers efficiently from whatever search strategy they think of themselves to the strategy that will produce the best results.”²

This approach is different from keyword searching; *Library Research Models* says:

“Key word searching, which is used more frequently nowadays because of the widespread availability of computer databases, is an *avenue* of access to knowledge records; but it is not a *system* of access because it lacks the critical element of predictability. There is no intellectual structure or direction that enables you to proceed from the little that you know to the retrieval of whole *categories* of sources that contain works whose key words you could not specify in advance.”³

“In the large majority of cases, librarians do not need subject matter expertise as long as they have predictable systems of access.”⁴ Note: The same is true for non-librarians who have information to report or are seeking information.

5. Psychological Overload

“A classic paper by George Miller, ‘The Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information’ (1956), has been widely referred to in the literature of human-factor design in information processing...While the number of information units that one’s short-term memory can process efficiently is debatable—and certainly variable according to experience and training—a basic truth remains that most people cannot keep too much information in short-term memory. Displays that provide too many options, or too many levels of choice within one option, therefore tend severely to impede users’ efficiency in navigating the system. With computers, specifically, there is a tendency under such conditions for users to become ‘lost in hyperspace’ (or simply ‘menu-space’).”⁵

6. Application of Concepts and Methods of Library Science

This is beyond the scope of this paper.

² Ibid, pg 121

³ Ibid, pg 89

⁴ Ibid, pg 120

⁵ Ibid, pg 139