**Miura, A., Fujihara, N., & Yamashita, K. (2005). Retrieving information on the World Wide Web: effects of domain specific knowledge. *AI& Society*, 20(2), 221-231.**

Keywords: Information retrieval, World Wide Web, retrieval behaviors, World Wide Web literacy, behavioral performance, retrieval performance measures, human aspects of information retrieval

By completing a simple study of 12 students, the researchers demonstrate that knowledge in a particular domain, defined as “domain specific knowledge,” hastens the retrieval process using the World Wide Web in specific cases. The study sample was instructed to search the World Wide Web, a huge database that is not particular organized or classified, and to solve two particular problems. The first problem required no domain specific knowledge to solve and the second was solved easier with domain specific knowledge. Through the use of a behavioral process where the students spoke aloud about their actions and their thought processes, the authors were able to track the patterns used to retrieve information.

Retrieval methods have two standards for performance measures that are computed as follows: 1. Precision – number of relevant documents/total number of documents retrieved. 2. Recall – number of relevant documents/total number of relevant documents in the collection. In this study, Miura and colleagues reviewed the human aspect of these two standards and completed a detailed analysis of the retrieval process. Their focus was this human process by comparing two groups, one with and one without pre-existing knowledge in the content area of the searches. Two key elements for successful information retrieval emerged - domain specific knowledge and knowledge of search engines/web browsing.

Limitations of this study were first its small sample size, and also the limits of the responses regarding the thought process as many of the students did not verbalize their thoughts only the action when completing the searches. This limitation may be related to a cultural difference, lack of understanding of the instructions, or uneasiness of stating thoughts aloud. The researchers note various possible solutions for this important research data to be collected and incorporated more effectively in future studies. The solutions include ice-breaking interactions and practicing the method after being formally taught prior to the actual experiment.

Future research focus on this behavioral phenomenon is crucial if the author’s long term solution of developing a support system to make information retrieval using the World Wide Web more efficient is ever a possibility. Repeating this same study in a different cultural using the same methods would either dispute or corroborate the cultural concerns presented. A replicate study using a larger sample size would also validate the researchers findings, thus enabling the use of this information in developing a simple interface to make searching the World Wide Web more effective and efficient for users.