

Designing Exploratory Search Tasks for User Studies of Information Seeking Support Systems

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ABSTRACT

This poster describes a procedure for designing exploratory tasks for use in laboratory evaluations of information seeking interfaces. This procedure is grounded in the literature on information seeking and information retrieval and has been refined by an evaluation of four tasks designed for a study of a faceted library catalog. The procedure is intended to be extensible to generate exploratory tasks for other types of interfaces and domains.

Categories and Subject Descriptors

H5.2 User Interfaces: Evaluation/methodology; H3.3 Information Search and Retrieval

General Terms

Design, Human Factors, Experimentation

1. INTRODUCTION

Designing exploratory search tasks is an important, but challenging, requirement for successfully evaluating exploratory search interfaces (<http://www.ils.unc.edu/ISSS/>). When creating any type of search task, there is a challenge of creating a realistic, representative task that is comparable within the study and also potentially across studies. When creating exploratory search tasks there is an additional burden of actually inducing an exploratory rather than directed form of search. This research seeks to 1) understand what characteristics and attributes are important to include in exploratory search tasks used for evaluations and 2) outline a procedure that reliably yields exploratory tasks with desired characteristics.

Exploratory search tasks involve uncertainty, ambiguity and discovery as common aspects. When engaging in exploratory search, users often “lack the knowledge or contextual awareness to formulate queries or navigate complex information spaces, the search task requires browsing and exploration, or system indexing of available information is inadequate” [3].

As part of a study of a faceted library catalog, we proposed a formal procedure for constructing tasks [2] based on a set of desirable characteristics identified from the literature [2], including:

- Indicates uncertainty and ambiguity in information need
- Suggests knowledge acquisition, comparison, or discovery

- Provides a low level of specificity about: the information necessary and how to find the required information
- Provides enough imaginative context in order for the study participants to be able to relate and apply the situation.

Our procedure draws task topics from query log data, integrates them into a high-level work scenario [1], and addresses practical issues encountered in controlled or semi-controlled evaluations. In applying the procedure, we followed a two-step approach to develop the tasks for the study. First, we identified task topics based on real-world usage logs of the North Carolina State University (NCSU) Libraries on-line catalog. Second, we plugged the topics into “task templates” (partially specified high-level work scenarios) that were designed to motivate exploratory search. This two-step procedure is proposed not only as a way to generate the tasks, but also to help promote comparisons between tasks in different studies. The following is an example task generated using our procedure:

Imagine you are taking a class called “Feminism in the United States”. For this class you need to write a research paper on some aspect of the U.S. feminist movement, but have yet to decide on a topic. Use the catalog to find two possible topics for your paper. Then use the catalog to find three books for each topic so that you might make a decision as to which topic to write about.

The task provides some direction (two topics, three books on each), but leaves the main aspects of the information need open. An experimental evaluation of four tasks created using this procedure suggested that it led to well-grounded, realistic tasks that did elicit exploratory search behavior. Additional information about the tasks and evaluation is available in [2].

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3. REFERENCES

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