

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

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Designing exploratory search tasks is an important but challenging requirement for evaluating exploratory search interfaces. 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 poster presents a procedure to create exploratory search tasks that attempts to balance realism with control and comparability.

## Desirable Task Characteristics

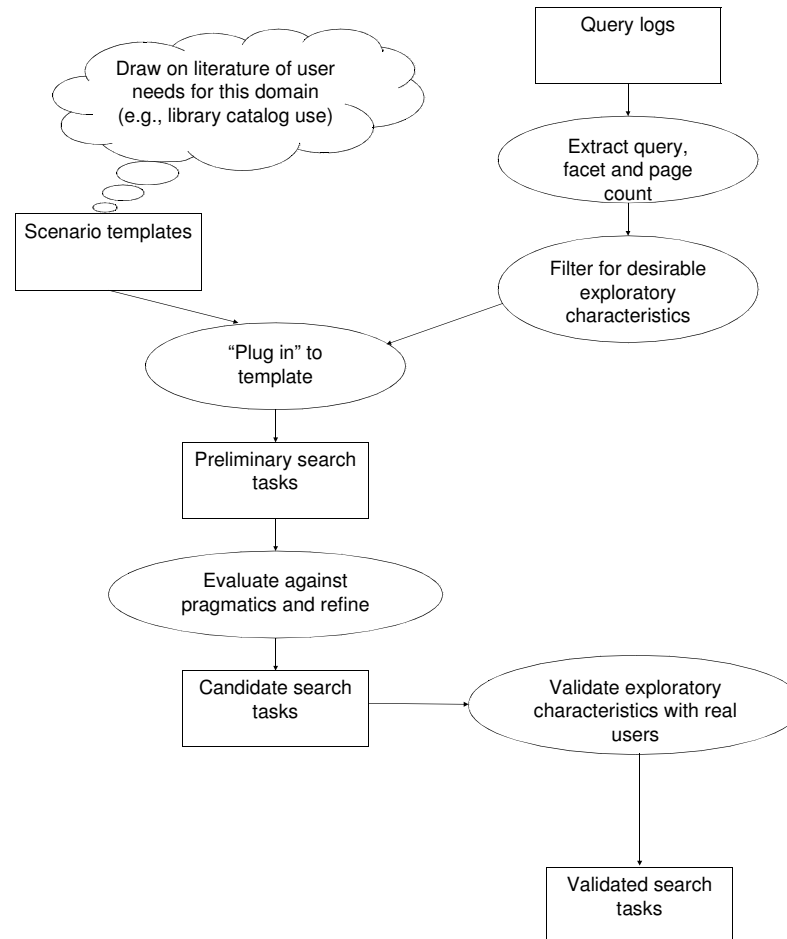
- Indicate uncertainty and ambiguity in information need
- Suggest knowledge acquisition, comparison, or discovery
- Be an unfamiliar domain for the searcher
- Involve finding multiple items
- Provide a low level of specificity about:
  - The information necessary for their search
  - How to find the required information
  - How to recognize the required information
- Provide enough imaginative context in order for the study participants to be able to relate and apply the situation.
- Be a situation that the test persons find topically interesting

## Procedure

The procedure (see diagram) draws task topics from query log data, integrates them into a high-level work scenario (a "template"), and addresses practical issues encountered in controlled or semi-controlled evaluations.

## Sample Task

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.



## Evaluation

We surveyed 18 study participants on 6 tasks (4 exploratory and 2 known-item), with the following questions:

1. How familiar were you with this subject when you began this task? (1 = not familiar at all, 5 = very familiar)
2. How difficult was it to accomplish this task? (1 = very difficult, 5 = very easy)
3. I am confident that I fulfilled the task asked of me. (1 = strongly disagree, 5 = strongly agree)
4. To what extent did completing this task involve finding a single item versus finding multiple items? (1 = single item, 5 = multiple items)
5. To what extent did you change what you were looking for based on the results you found? (1=not at all, 5=a lot)

	Exploratory n=72 avg (stdev)	Known-item n=36 avg (stdev)
1. Familiarity	2.6 (1.39)	3.0 (1.80)
2. Difficulty **	4.0 (0.91)	4.9 (0.23)
3. Confidence **	4.2 (0.94)	4.8 (0.80)
4. Single/Multiple **	4.2 (0.92)	1.4 (1.15)
5. Changed goal **	3.3 (1.33)	1.1 (0.40)

\*\* significant difference at  $p < 0.001$  using two-tailed T-test with  $\alpha = 0.05$

## Next Steps

- Refine task characteristics
- Develop additional high level scenarios (templates)
- Extend evaluation to measure more characteristics

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