Study Design for "**User Interface Evaluation**"

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**Abstract**: An Information Retrieval (IR) system interface is responsible for communicating the "relevancy" of a system suggested documents to the user. This imposes a challenge for the IR system interface design to assist the user in completing a search task especially if the user is unknown about the set of documents required and user must traverse multiple pages to seek the relevant information. Representation of "relevance" of the system suggested documents have received a significant amount of concern in the last two decades. Therefore, we have designed an experimental interface (Klink Search interface) from baseline interface (IEEE search interface) which supports system-user (relevance) communication in a different way. This study reports a within subject study design for N=18 participants and manipulated task complexity to evaluate how much an experimental interface can assist users in completing complex tasks compared to baseline interface. Hence, we evaluate differences in user interaction, user engagement by studying participants on both experimental and baseline interface. One way of manipulating task complexity is based on prior-determinability of tasks- Task determinability can be defined based on degree of uncertainty associated with outcomes of task and the search process involved in completing the tasks. Our experimental results demonstrates that there is a significant difference in user engagement levels on both the interfaces for differing levels of complex search tasks. However, the above results of user engagement levels resemble with only few measures of user interaction for both the interfaces. Our experimental results also have implications for considering user interface designs to communicate "relevancy" of system suggested documents to the user.