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Understanding Design Principles of Task Elicitation Systems - An Experimental Evaluation

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Understanding Design Principles of Task Elicitation Systems - An Experimental Evaluation

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Abstract

In large IS development projects a huge number of natural language documents becomes available and needs to be analyzed and transformed into structured requirements. This elicitation process is known to be time-consuming and error-prone when performed manually by a requirements engineer. Thus, there is a clear demand for advanced support of the entire elicitation process. Addressing this issue, our work focuses on providing automated and knowledge-based support of the task elicitation sub-process. More specifically, we aim to answer the question: "Which design principles of task elicitation systems improve task elicitation productivity over manual task elicitation?" Following a design science approach, design principles for task elicitation systems are conceptualized and instantiated in an artifact. We complement the design with an evaluation of the proposed design principles in a laboratory experiment and examine its external validity in a field setting. Our results show that the level of automation as well as the extent and origin of the knowledge used for the automation process positively affect task elicitation productivity. Through our work, we contribute to the body of knowledge by explaining effects of the conceptualized and instantiated design principles. Furthermore we intend to improve the understanding of how and why these design principles affect the decision processes incorporated in task elicitation. This also bears potential to advance the design of systems to support task elicitation in practice.

Keywords: Requirements elicitation, task elicitation, natural language processing, design science, experiment, productivity

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