# Chatbot Design Features to Increase Productivity

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**Abstract.** In recent years, chatbots have become a growing presence in our everyday lives. Companies have identified various potential use cases posing opportunities for reducing cost and providing services through automating processes with the help of chatbots. However, although an increasing number of chatbots are developed, user expectations often cannot be met, leading to frequent discontinuation of the bots. Research suggests that for users, one of the main reasons to use a chatbot is to help them increase their productivity. The literature base so far provides little prescriptive knowledge guiding implementation of chatbots specifically for use cases where productivity is the main purpose. This short paper is the first step within a Design Science Research project to close this gap. We conducted a systematic literature review and gathered chatbot Design Features that were covered in respective publications.

productivity is the ratio of output to input. In the context of chatbots, the output can be defined as the task or the number of tasks completed and the input as the amount of time needed for the completion [6]. In our project, we focus specifically on the potentials of chatbot design to increase productivity. We do not consider further types of solutions (e.g. self-service portals) within this research endeavour. Moreover, we do not yet focus on a specific application domain or specific types of tasks as we intended to gather a broad range of DFs based on a comprehensive analysis of literature.

keyword-based searches were eliminated (remaining: 78). We also applied language (English), thematic focus (covering chatbot design) and quality (peer-reviewed) as inclusion criteria (remaining: 64). In a second step, we also conducted a forward as well as a backward search that resulted in another 8 articles. Therefore, a total of 72 papers were selected for in-depth analysis in connection with our literature review

## 3 Results: Chatbot Design Features and Categories

The systematic literature review uncovered a broad range of chatbot DFs potentially influencing productivity measures. To delimit terms, a DF describes a specific chatbot design element that provides a certain functionality. A DP on the other hand, is a concept in DSR and specifies prescriptive design knowledge according to a specific schema [9]. Studies that directly investigated the effect of certain DFs on productivity as defined in the introductory chapter could not be identified. Therefore, we selected DFs that respective literature argues to be beneficial to the chatbot interaction in more general terms – either quantitati

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