Tailoring the Level of Detail in Task Instructions to Cognitive Style

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Abstract: Previous investigations into the optimal design of instructions for complex tasks have often failed to account for the possibility of individual differences in instruction efficacy. We examined how individuals with various cognitive styles differ in how they make use of and learn from instructions with differing levels of detail. Participants completed a realistic photo-manipulation task and a realistic graph-creation task within the computer applications GIMP and SPSS's PASW, respectively. Detailed instructions included justifications for each task's steps, while Simple instructions did not. Participants performed each task twice. Differences between first and second completion times were analyzed with respect to level of instruction detail and four dimensions of cognitive style/skill: field dependence/independence, cognitive flexibility, working memory capacity, and reading speed. We examine the extent to which higher field dependence is related to more learning from Detailed instructions, and discuss the implications for instruction design.