

Meta-Reasoning: The Challenge of Effective Problem-Solving Regulation

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The metacognitive framework (Nelson & Narens, 1990) within cognitive psychology research deals with effort regulation while performing cognitive tasks. The traditional model was developed with memorizing (e.g., vocabulary learning) in mind. The Meta-Reasoning framework (Ackerman & Thompson, 2017) deals with effort regulation while solving logic challenges. It is relevant for various contexts, including educational (e.g., math training and test taking), professional (e.g., medical diagnosis, design), and daily life (e.g., meal planning). It suggests that there are unique metacognitive processes that accompany reasoning processes that were mostly overlooked. For instance, a problem may be unsolvable in general or for the particular person (e.g., lack of math knowledge). Thus, while investing a lot of effort in memorization is likely to be valuable, waste of time is a likely outcome when one cannot solve a problem. Can people identify unsolvable problems in the first place? When are they willing to give up a problem after engaging in solving it? What happens when they attempt to adjust their efforts to work under time pressure? What are the predictable biases in judgments and effort regulation while solving problems? Theoretical and practical aspects will be discussed.