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Positive and Negative Effects of Metacognitive Prompts

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Abstract

In many situations, actively engaging in metacognition may improve cognitive achievement and subjective well-being. However, the potential disadvantages of metacognitive engagement are only rarely communicated in metacognition research. In this article we outline three ways in which metacognition may reduce cognitive achievement and psychological well-being. First, metacognition may sometimes actively interfere with task performance. Second, the costs of engaging in metacognitive strategies may under certain circumstances outweigh its benefits. Third, metacognitive judgments or feelings involving a negative self-evaluation may detract from psychological well-being. The main contribution of this paper is to integrate findings from different research traditions in order to illustrate the three suggested ways in which metacognition may be unhelpful. An implication of this overview is that although metacognition is most often beneficial to cognitive achievement and subjective well-being, one should bear in mind that it may also have the opposite effect. It is important for researchers and practitioners to take this potential downside of metacognition into account. Practitioners might find it useful to consider the following three questions that relate to my aforementioned claims: Is the nature of the task such that metacognition could interfere with performance? Is the cognitive demand required by the metacognitive strategy disproportionally large compared to its potential usefulness to cognitive achievement? Does metacognition lead to an unhelpful comparison of oneself to others? The same considerations should be kept in mind when researchers and practitioners communicate the potential implications of research findings in metacognition research to audiences within and beyond the research community.

Keywords: *metacognition; cognitive achievement; psychological well-being; metacognitive strategies; self-evaluation*

In many situations, actively engaging in metacognition may improve cognitive achievement and subjective well-being. However, the potential disadvantages of metacognitive engagement are only rarely communicated in metacognition research. In this article we outline three ways in which metacognition may reduce cognitive achievement and psychological well-being. First, metacognition may sometimes actively interfere with task performance. Second, the costs of engaging in metacognitive strategies may under certain circumstances outweigh its benefits. Third, metacognitive judgments or feelings involving a negative self-evaluation may detract from psychological well-being. The main contribution of this paper is to integrate findings from different research traditions in order to illustrate the three suggested ways in which metacognition may be unhelpful. An implication of this overview is that although metacognition is most often beneficial to cognitive achievement and subjective well-being, one should bear in mind that it may also have the opposite effect. It is important for researchers and practitioners to take this potential downside of metacognition into account. Practitioners might find it useful to consider the following three questions that relate to my aforementioned claims: Is the nature of the task such that metacognition could interfere with performance? Is the cognitive demand required by the metacognitive strategy disproportionally large compared to its potential usefulness to cognitive achievement? Does metacognition lead to an unhelpful comparison of oneself to others? The same considerations should be kept in mind when researchers and practitioners communicate the potential implications of research findings in metacognition research to audiences within and beyond the research community.

Metacognition is a hot research topic. A vast number of scientific papers and books have addressed metacognition since the concept was first introduced in the 1970s, and a variety of methodological approaches have been developed and applied within different psychological subdisciplines. Metacognition has also become an increasingly popular term in everyday language, and is frequently used in, for instance, educational settings.

Researchers commonly refer to metacognition as consisting of three facets. *Metacognitive knowledge* refers to people's general knowledge and understanding of various cognitive processes, and of their own versus other people's cognitive abilities and strategies. *Metacognitive strategies* are deliberate strategies used to control cognition. *Metacognitive experiences* are feelings, judgments, and task-specific knowledge that reflect what the person is aware of and feels during task performance.

Metacognition research often seems concerned with what people ought or ought not to do. I first provide a tentative description of this normative aspect of metacognition research, suggesting that the majority of metacognition research gives more attention to the potential benefits of metacognition than to its potential disadvantages. Then I present examples of specific ways in which metacognition is sometimes not beneficial to cognitive achievement and psychological

well-being. In my opinion, these have not yet been given adequate voice in the literature, and there have not been many attempts to integrate examples of negative influences of metacognition from different research traditions. This paper attempts to provide such an integration and to thereby increase awareness of the potential downside of metacognition. The main focus is on metacognitive strategies, which is the facet most often associated with a conscious choice. However, to the extent that the three facets are interrelated (e.g., applying a metacognitive strategy would most often require activating metacognitive knowledge and experiencing metacognitive feelings), all three will be addressed.

Most would agree that metacognition serves to monitor and control ongoing cognitive activity. Metacognition as a research topic has spread to multiple areas of psychology, including developmental, personality, social, clinical, and forensic psychology, to mention a few. Thus, it has become a cross-disciplinary subject. Also across these subdisciplines, the functional role of metacognition is widely agreed upon.

Closely linked to this functional role is the idea of something that the individual ought to strive for, some goal that they should try to reach by applying metacognitive strategies or knowledge. Two candidate outcome variables can be outlined. One is cognitive achievement. This relates to how much the individual learns or remembers, how well the person solves problems, to what extent the person can make rational decisions and reason logically, etc. Metacognition could play a role in cognitive achievement by helping the person make use of the best cognitive and metacognitive strategies in the given situation.

The other category of outcome variable is psychological well-being. Some definitions of well-being focus on happiness, life satisfaction, and positive affect (some on the absence of distress and dysfunction, and yet others on the balance between the individual's challenges and resources). I suggest that metacognition could influence well-being in at least two ways. One is through its influence on cognitive achievement. This would happen in cases where metacognitive activity improves cognitive achievement and thus leads to positive experiences. For instance, applying metacognitive strategies may help a student achieve a higher grade, which makes the student happy. The other is through the metacognitive activity itself being subjectively experienced as pleasant or unpleasant, which could directly affect a person's current mood and well-being. For example, a strong feeling of comprehending a text could be experienced as positive. A contrasting feeling of low comprehension could be experienced as negative.

In some parts of the literature, the normative ideal of increasing metacognitive awareness is explicitly stated. For example, educational programs inspired by metacognition literature often encourage teachers to increase students' metacognitive awareness and abilities to improve learning or social skills and psychological well-being. The importance of metacognitive

awareness is also highlighted in the clinical literature on metacognitive therapy which assumes a role of patients' metacognitive awareness of dysfunctional cognitive patterns—together with acquisition of alternative metacognitive strategies—in recovery from mental illness. In medical decision making, researchers have argued for medical professionals' "ethical imperative to thinking about thinking" in order to prevent diagnostic errors.

However, also when this is not explicitly stated, metacognition research often seems to imply that metacognitive activity is beneficial. Being metacognitively active could involve being aware of metacognitive beliefs and knowledge and actively applying metacognitive strategies. As metacognition has received increased popularity in psychological disciplines, the impact of this normative assumption has spread correspondingly. Even when researchers express no opinion on whether metacognition is useful, empirical findings are often used to argue for its beneficial effects. This also extends beyond the research community. For example, the term metacognition is often used by teachers and school leaders in Norway, where children as young as 6–7 are encouraged to apply it in their own learning. The widely held assumption that metacognition is beneficial could at least in part be understood as a consequence of its close relationship to self-regulation. Thus, the benefits of metacognition could be inferred from literature that has argued for the benefits of willpower, also in contexts beyond education.

There are also examples of research showing how metacognition can sometimes be unhelpful. Because such research findings may provide guidance as to when one should encourage or discourage metacognitive activity, it is important that they are communicated to both researchers and practitioners. Yet, such findings are rarely given much weight in the metacognition literature. One reason could be that some of this research has not been conducted under the heading of "metacognition," even when clearly addressing metacognitive phenomena. Therefore, these findings are rarely discussed conjointly. Another reason could be that common opinion is that all in all, the potential disadvantages of metacognition are less important because they are normally outweighed by its advantages.

We have shown that metacognition can be unhelpful in at least three ways. Correspondingly, before encouraging someone to engage in metacognition, it is relevant to consider the following three questions: Is the nature of the task such that metacognition could interfere with performance? Is the cognitive demand required by the metacognitive strategy disproportionally large compared to its potential usefulness to cognitive achievement? Does metacognition lead to an unhelpful comparison of oneself to others? If the answer to any of these is yes, metacognition might be more unhelpful than helpful.

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