

Effectiveness of Self-Regulatory Training Interventions

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What is Self-Regulation?

- Processes that enable individuals to guide goal-directed activities over time and across changing circumstances (Karoly, 1993)
- Includes individual's ability to control functions related to thinking and learning (Bandura, 1994)





Self-Regulation and Learning

- Past research has shown self-regulatory processes during training have a positive influence on learning (e.g., Bell & Kozlowski, 2002; Ford et al., 1998)
- As such, researchers have examined a variety of self-regulatory interventions—designed to increase learning outcomes by encouraging trainees' self-regulatory activity





Goals of Current Study

- Examine the effectiveness of interventions designed to increase self-regulation
- Examine moderating conditions that influence the effectiveness of self-regulatory interventions





Method

- Limited to studies focusing on cognitive regulation
- Studies had to include post-training learning outcome for self-regulation and control group
- Using these criteria, we identified 59 articles with data from 66 samples
- Hedges & Olkin (1985) procedure used to calculate meta-analytic estimates





Main Effect

- Main effect of intervention on cognitive learning: $d = 0.38$, $k = 66$, $N = 5,893$
- Significant variability across effect sizes
- Examined differences in the effectiveness of self-regulatory processes based on:
 - Self-regulatory processes targeted
 - Intervention length
 - Feedback provided on self-regulation





Moderator: Processes Targeted

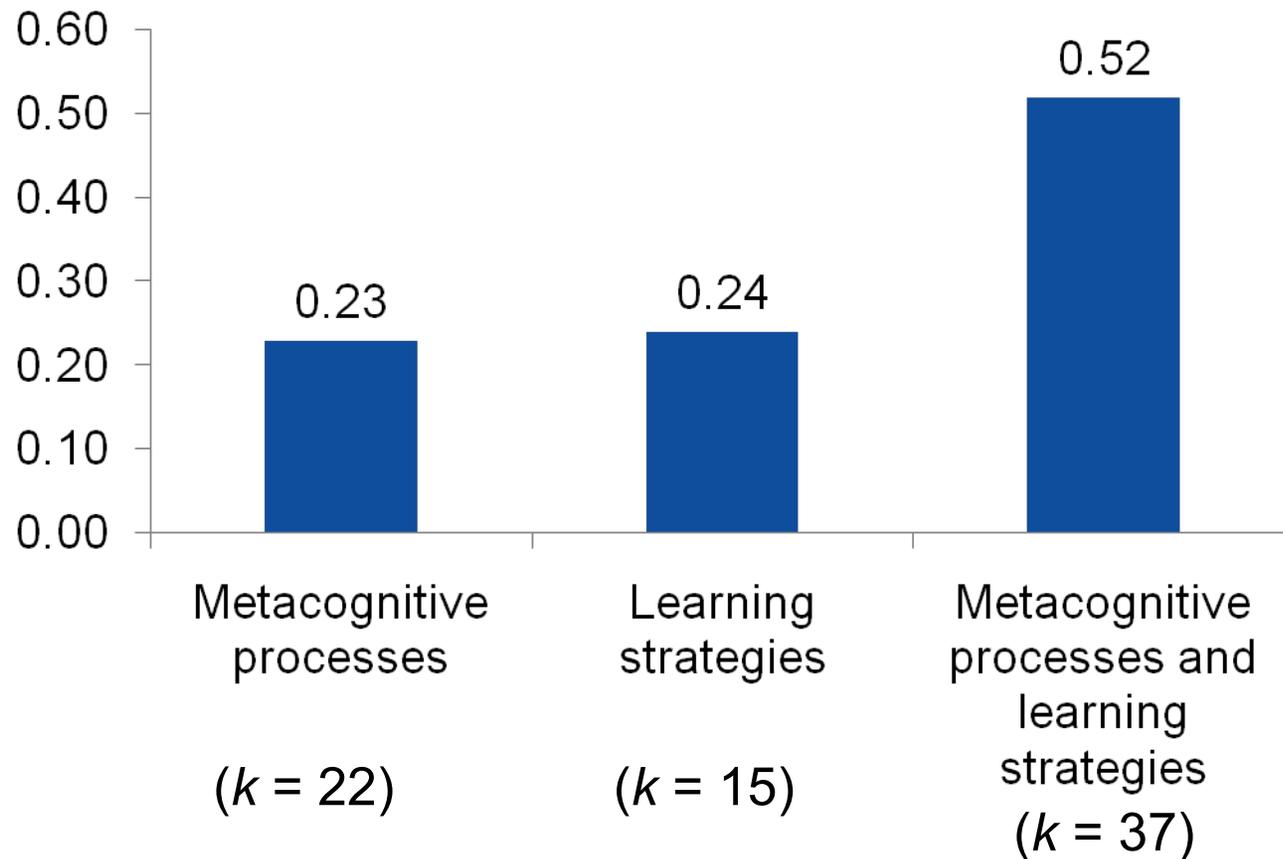
- Metacognitive processes
 - Planning
 - Monitoring and Evaluation
 - Concentration
- Learning strategies
 - Deep processing
 - Elaboration





Moderator: Processes Targeted

Comparison of d



$Q_B = 29.23, p < .05$





Moderator: Intervention Length

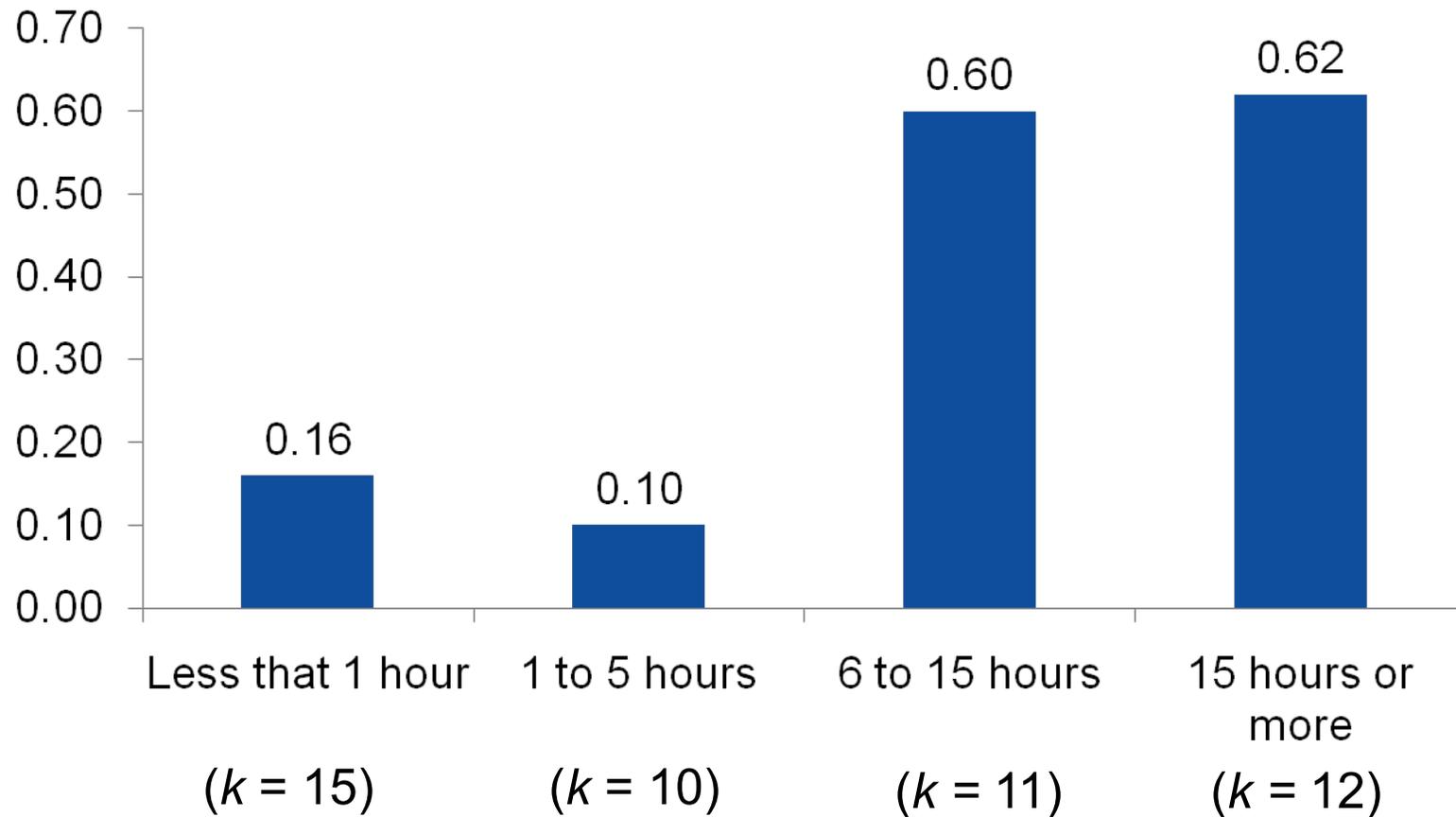
- Shorter interventions
 - 30 minute lecture explaining the different phases and areas of self-regulation (Azevedo & Cromley, 2004)
- Longer interventions
 - 10 hours of instruction on engaging in self-questioning, planning, monitoring, and evaluating activities (Spire, 1993)





Moderator: Intervention Length

Comparison of d



$Q_B = 56.79, p < .05$





Moderator: Feedback

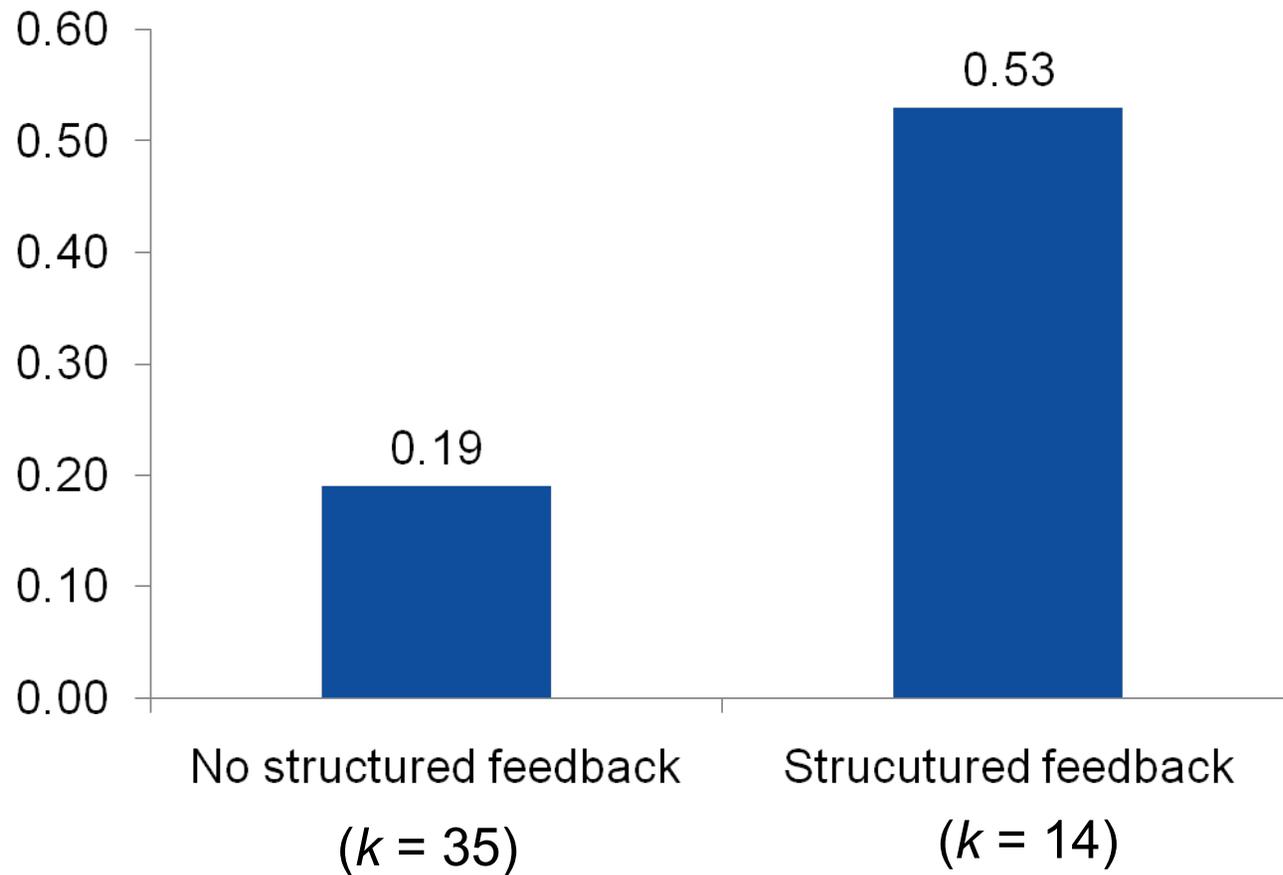
- No structured feedback on self-regulation
 - Trainees prompted to take notes using a matrix organizer, no feedback was provided (Kauffman, 2003)
- Structured feedback on self-regulation
 - Trainees instructed on effective note taking and provided with specific feedback on the quality of their notes (Spire, 1993)





Moderator: Feedback

Comparison of d



$Q_B = 24.27, p < .05$





Lessons from the Analyses

- Interventions that encourage self-regulation are beneficial to learning
- Results from the moderator analyses suggest that the most effective interventions:
 - Targeted both metacognitive processes and learning strategies
 - Were longer in duration
 - Provided trainees with structured feedback on their self-regulation





Directions for Future Research

- Long-term perspective
 - How do self-regulatory interventions influence retention and transfer?
- Mediating mechanisms
 - What are the mechanisms through which these interventions influence learning?





Questions or Comments?

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