

UC Merced

Proceedings of the Annual Meeting of the Cognitive Science Society

Title

Adolescent Metacognitive Ability Predicts Spontaneous Task Strategy Adjustment

Permalink

<https://escholarship.org/uc/item/4kw528tv>

Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 46(0)

Authors

Chidley, Kali

Dux, Paul

Fox, Amaya

et al.

Publication Date

2024

Copyright Information

This work is made available under the terms of a Creative Commons Attribution License, available at <https://creativecommons.org/licenses/by/4.0/>

Peer reviewed

Adolescent Metacognitive Ability Predicts Spontaneous Task Strategy Adjustment

Kali Chidley

The University of Queensland, Brisbane, Australia

Paul Dux

The University of Queensland, Brisbane, Australia

Amaya Fox

The University of Queensland, Brisbane, Australia

Stephanie Macmahon

The University of Queensland, Brisbane, Australia

Annemaree Carroll

The University of Queensland, Brisbane, Australia

Natasha Matthews

The University of Queensland, Brisbane, Australia

Abstract

Adolescence is a critical period for developing higher-order processes, such as the ability to selectively switch attention in response to changes (cognitive flexibility) and employing strategies for regulating attention (metacognitive skill). We adapted a measure of cognitive flexibility, the cued task-switching paradigm, by allowing participants to control their preparation time. Adjusting preparation time according to the demands of the upcoming trial requires metacognitive awareness of task demands and cognitive processing limits. Therefore, we propose that this strategy of preparation adjustment captures metacognitive skill. In a large-scale study ($N = 141$) with adolescents aged 11-15 years, results indicate that participants spontaneously adopted a preparation adjustment strategy. Increased self-paced preparation time was associated with decreased cognitive flexibility costs and was positively related to questionnaire measures of metacognitive skill. Overall, these findings suggest that individual differences in metacognitive skill impact the extent to which adolescents spontaneously adopt a strategy to improve cognitive flexibility.