
NEWSLETTER

The Effects of Metacognitive Teaching on Student Academic Performance: A Meta-analysis of Relevant Experimental and Quasi-experimental Studies over the Past 20 Years

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THE ability to “learn to how to learn,” by common consent, is one of the key competences that students need to succeed in the 21st century. The concept of metacognition, viewed as central to this ability, was first advanced by Flavell, a cognitive psychologist, to denote the individual’s knowledge and understanding of cognitive processes. It is a higher-order thinking ability, involving the learner’s active control of cognitive processes as well use of metacognitive support to plan and adjust learning. Metacognitive teaching is a pedagogy that requires the teacher to guide students to contemplate on their learning process and actively solve problems. It is also a practical instructional framework that consists of students, teachers, metacognitive teaching strategies, and the learning environment. This study explores the impact of metacognitive teaching on student academic performance and related moderating variables using the meta-analytic technique. It aims to provide valuable insights to educators for their appropriate and flexible adoption of metacognitive teaching in education and to contribute to the advancement of the key competence-focused curriculum reform.

The analysis results show that:

- Metacognitive teaching has a significantly positive impact on student academic performance. It effectively improves students’ thinking ability and academic achievement by emphasizing their self-reflection in the process of problem solving, thus enhancing the value of the instructional system at large.
- The moderating effects of teaching strategies, learning phases, and subjects on the relation between the metacognitive teaching and student academic performance are significant, whereas those of student learning ability and teaching durations are not. The use of teaching assessment that combines PME (plan, monitoring, and evaluation) and metacognitive knowledge can most effectively boost student academic performance.

The study proposes recommendations on metacognitive teaching as follows:

- i. Encourage reflective analysis and the development of thinking patterns in students; create teaching scenarios that facilitate knowledge transfer.
- ii. Use multiple metacognitive teaching strategies to support students enhancing planning and metacognitive knowledge and establishing integrated knowledge and skill structure.
- iii. Develop individualized and stratified metacognitive teaching models to heighten the matching of teaching and learning.
- iv. Set legitimate teaching durations and encourage interdisciplinary learning.
- v. Create teaching design from the developmental perspective; assist students in developing into self-directed metacognitive learners.

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