Thinking Metacognitively: 
Metacognitive Skills and Science Performance

Abstract

The presented study aims to identify the relations between metacognitive skills and science performance. Data were collected from 211 Romanian adolescents in the seventh and eighth grades, who completed the Junior Metacognitive Awareness Inventory (the version for 5th–9th grades). The results indicate that adolescents generally use metacognitive skills when learning science subjects and that some metacognitive skills are associated with better performance in science. Nevertheless, adolescents seem to encounter difficulties in using diagrams and pictures that facilitate the learning process, in evaluating the outcomes of their learning process and in using different learning strategies, in accordance with specific learning situations. Given the importance of metacognitive skills in science performance, we argue that it is essential for teachers to understand how to develop a culture of metacognition in science classrooms.

Keywords: metacognition, high-school students, science, achievement.

Introduction

Learning is influenced by a variety of factors, from multiple levels: individual level, family level, social and cultural level. Concerning the individual level, one factor which has drawn the attention of researchers is metacognition, which is considered to have a major influence on the learning process. Metacognition has become a highly studied subject in the field of educational, cognitive and developmental psychology, being related with a variety of academic tasks, from reading