Review of: "Operations of the Cognitive-Metacognitive System in Promoting Learning: a Brief Theoretical Analysis"

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This is a very interesting article and it would have relevant practical implications in educationl psychology.

However, there are some points that need to be clarify and discussed in a more critical and rigourous perspective. I will list them below:

Introduction

- I do not think that the proper definition of metacognition could be “tool”. I would suggest to ude, instead, the term “process”.
- “In its three decades of existence, it can be argued that metacognition was not yet presented in a simple way to be easily and effortlessly understood and used by teachers and planners of instruction.” This sentence is not entirely correct: see for example the work of Anne Borwn on metacognitive teaching, who is also cited in this paper.
- “Knowledge of a set of self-instructions for regulating task performance” is cognitive. It is, in fact, procedural cognitive knowledge": also here, this is not properly defined. For clarifying this, please see the following article: Schraw, G. (1998). Promoting general metacognitive awareness. *Instructional science*, *26*, 113-125, in which Schraw claim that there are two components of metacognition, knowledge of cognition and regulation of cognition. Knowledge of cognition is not only procedural knowledege, but it includes all the pieces of information and (correct and uncorrect) beliefs that we developed about how our cognitive processes work and how we can control them. This is certainly metacognitive, but this distiction is not addressed in the article. Also, here it is mentioned another aspects related to the metacognitive dimensione, the self-regulation competence, which is not specifically addressed in the article

Metacognition and Its Components

- I would suggest to rephrase this sentence: “Good use of metacognition as an effective tool in teaching and learning”. What does the author mean with “good”? It is a too generic term and it is advisable to use, instead, “effective”, “successful”, etc. And, I would recommend not to defined metacognition as “tool”, better to define it as a process.

Control and Monitoring in Metacognition

- Considering the following sentence “It is rather being claimed that there are two systems with fairly distinct inputs, processing, and outputs, i.e. cognitive and metacognitive systems running within the same biological system.”, this should be supported by proper references, and it would be very useful also to mention some works in the field of neurosciences, in order to motivate this claim and supporting it with findings from research.
- “Learners with well-developed metacognitive”, please, do not use generic terms as “good”, “well”, etc as sometimes it appears in the current article, they should be avoided in scientific report and articles. I would recommend to be always as specific as possible (maybe better “with a advanced-level of metacognitve competence”).
- “If we begin with a given cognitive input, the following six mental processes would occur, in sequence, in the cognitive-metacognitive system.” But, what happens if the outcome is not correct/coherent with the task reques/of a sufficient quality levelt/etc.? This issue is not specifically addressed in all the article, but revising and assessing is as crucial as controlling and monitoring.
- “The present author suggests that whether or not the cognitive system generates cognitive-level model consciously or unconsciously, the metacognitive system has to act consciously to access and make use of the cognitive-level model.”. Yes, but we have also to consider that there are also implicit metacognitive knowledge and strategies that can be detected also at a very young age, before explicit metacognitive competences developed. See, for example, the following paper: Paulus M, Proust J and Sodian B (2013) Examining implicit metacognition in 3.5-year-old children: an eye-tracking and pupillometric study. *Front. Psychol.***4**:145. doi: 10.3389/fpsyg.2013.00145

Operations of the Cognitive-Metacognitive System

- “Here, it is not implied that the operation of cognitive-metacognitive system is always linear.” Yes, of course, and this is particularly true thinking also about the monitoring (and possibly revising) the cognitive process, where the learner may come back for adjusting/correcting some aspects. In all the article the assessing and revising phase have been a little neglected, and I higly recommend to consider it more in detail