

# **THE SIGNIFICANCE OF INTERPRETIVE ACTIVITY IN PROBLEM SOLVING: LESS IS MORE AS A DESIGN PRINCIPLE**

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Studies report that many students have a strong tendency to solve mathematical word problems by mechanically calculating numbers even if their answers seems unrealistic (e.g., Verschaffel, Greer & DeCorte, 2000). The current study found that many undergraduate students also demonstrate the same tendency to give unrealistic answers. However, in-depth clinical interviews reveal that many of their “unrealistic” answers entailed sensible rationales. Some of the answers stemmed from idiosyncratic interpretations of the problem situations, while others come from intentionally conforming to the culture of schooling. The problem solving was highly dependent on their personal interpretations of the activity.

The research investigated how changing the design of mathematical problems solving could improve the way students employ realistic considerations in solving problems. Introduction of familiar problem situations did not necessarily motivate students to employ realistic considerations in problem solving. Instead removing unnecessary constraints from problem solving was found to significantly enhance students’ motivation to validate their problem solving with reality. It is speculated that less constraint on problem goals allowed the subjects to freely employ their imagination and make sense of problem situations in terms of their personal understating of reality.

These results point to the important role of personal interpretation in problem solving as well as the need to remove unnecessary constraints from problem goals in order to promote sense-making in mathematical problem solving.

## **Reference**

Verschaffel, L., Greer B., & DeCorte, E. (2000). *Making sense of work problems*. The Netherlands: Swets & Seitlinger.