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**Proportional word problem solving through a modeling lens: a half-empty or half-full glass?**

Felmer, Patricio (ed.) et al., Posing and solving mathematical problems. Advances and new perspectives. Cham: Springer (ISBN 978-3-319-28021-9/hbk; 978-3-319-28023-3/ebook). Research in Mathematics Education, 209-229 (2016).

Summary: We discuss two studies related to upper elementary school pupils' use of additive and proportional strategies to solve word problems, in order to shed a light on pupils' modelling disposition (i.e. both their abilities and their inclination) in the context of proportional reasoning. In Study 1, we used word problems that were clearly additive or proportional, while in Study 2 the problems were formulated with Greek symbols so that pupils had no access to the actual contents of the problems. Both studies yielded very similar results. 3rd graders initially are strongly inclined to reason additively to missing-value word problems (whether they are additive, proportional, or incomprehensible) and 6th graders are strongly inclined to reason proportionally. In the intermediate stage pupils heavily rely on the numbers appearing in the word problems in order to decide to apply a proportional or additive method. Even though the results were very similar, different nature of the tasks in both studies reveals a different aspect of pupils' modelling disposition. The first study showed how pupils largely neglect the actual model underlying a word problem, and consistently apply the same model across situations. The second study indicates that already at a young age, a substantial number of learners is inclined to give answers based on quantitative analogical relations.

*Classification:* D50 F90 F80

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