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**Amit, Miriam; Jan, Irma**

**Model eliciting environments as “nurseries” for modeling probabilistic situations.**

Lesh, Richard (ed.) et al., Modeling students’ mathematical modeling competencies. ICTMA 13. Proceedings of the 13th international conference on the teaching of mathematical modelling and applications, July 22–26, 2007. London: Springer (ISBN 978-1-4419-0560-4/hbk; 978-1-4419-0561-1/ebook). 155-166 (2010).

Summary: This study presents an extension of model-eliciting problems into model eliciting environments which are designed to optimize the chances that significant modeling activities will occur. Our experiment, conducted in such an environment, resulted in the modeling of a probabilistic situation. Students in grades 6–9 participated in competitive games involving rolling dice. These tasks dealt with the concept of fairness, and the desire to win connected students naturally to familiar “real life” situations. During a “meta-argumentation” process, results were generalized, and a model was formed. In this case, it was a model describing a “fair game” created by the differential compensation of different events to “even the odds.” The strength of this model can be seen in its ability to first reject preexisting knowledge which is partial or incorrect, and second to verify the knowledge that survives the updating and refining process. Thus, a two-directional process is created – the knowledge development cycles lead to a model, and the model helps to retroactively examine the knowledge in previous stages of development.

*Classification:* M13 C33

*Keywords:* mathematical modeling; lower secondary; probability; realistic mathematics; model eliciting activities

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