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Mathematicians' example-related activity in formulating conjectures.

Liljedahl, Peter (ed.) et al., Proceedings of the 38th conference of the International Group for the Psychology of Mathematics Education “Mathematics education at the edge”, PME 38 held jointly with the 36th conference of PME-NA, Vancouver, Canada, July 15–20, 2014, Vol. 4. [s. 1.]: International Group for the Psychology of Mathematics Education (ISBN 978-0-86491-360-9/set; 978-0-86491-364-7/v.4). 129-136 (2014).

Summary: This paper explores the role examples play in mathematicians' conjecturing activity. While previous research has examined example-related activity during the act of proving, little is known about how examples arise during the formulation of conjectures. Thirteen mathematicians were interviewed as they explored tasks that required the development of conjectures. During the interviews, mathematicians productively used examples as they formulated conjectures, particularly by creating systematic lists of examples that they examined for patterns. The results suggest pedagogical implications for explicitly targeting examples in conjecturing, and the study contributes to a body of literature that points to the benefits of exploring, identifying, and leveraging examples in proof-related activity.

Classification: E55 E45

Keywords: role of examples; conjecturing; proving; formulation of conjectures