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Examining the role of logic in teaching proof.

Hanna, Gila (ed.) et al., Proof and proving in mathematics education. The 19th ICMI study. Berlin: Springer (ISBN 978-94-007-2128-9/hbk; 978-94-007-2129-6/ebook). New ICMI Study Series 15, 369-389 (2012).

Summary: Enhancing the teaching of mathematics in ways that support the development of students' competence in argumentation and proof calls for increasing teachers' awareness of the crucial role played by logical reasoning in proof. The article examines the relevance of, and interest in, teaching logic in order to foster competence with proof in the mathematics classroom. It reviews various positions on the role of logic in argumentation and proof, taking psychological studies into account, discusses these positions from an educational perspective, and offers some suggestions about how to modify curriculum to help students develop their logical reasoning abilities. A challenge for the future is to develop and implement the suggestions in research programmes.

Classification: E50 E30

Keywords: teaching of proof; student's competence in argumentation; student's competence in proof; logical reasoning in proof; teaching logic; role of logic in argumentation; role of logic in proof

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