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Verbal justification-is it a proof? Secondary school teachers' perceptions.

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Summary: According to reform documents, teachers are expected to teach proofs and proving in school mathematics. Research results indicate that high school students prefer verbal proofs to other formats. We found it interesting and important to examine the position of secondary school teachers with regard to verbal proofs. Fifty high school teachers were asked to prove various elementary number theory statements, to write correct and incorrect proofs that students may use, and to evaluate given justifications to statements from elementary number theory. While all the participants provided correct proofs to the statements, our findings indicate that teachers are not aware of students' preference for verbal justifications. Also, about half of the teachers rejected correct verbal justifications. They claimed that these justifications lacked generality and are mere examples.

Classification: E59 C29 F69

Keywords: teacher knowledge about proofs; verbal proof; verbal justification; secondary school teacher views; elementary number theory; empirical investigations; educational research

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