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How teacher knowledge and perceptions in representations of linear functions translate into their classroom teaching.

Rogerson, Alan (ed.), The mathematics education for the future project. Proceedings of the 13th international conference 'Mathematics education in a connected world', Catania, Sicily, Italy, September 16–21, 2015. Münster: WTM-Verlag (ISBN 978-3-942197-44-1/pbk; 978-3-942197-86-1/ebook). Conference Proceedings in Mathematics Education 1, 349-357 (2015).

Summary: Teachers' content knowledge and perceptions about representations of linear functions is a major factor that affects students' concept building and learning processes. This paper reports students' understanding of linear functions in contextual and graphical representations. Students' misconceptions and limited understanding of linear functions in real life situations are discussed. The findings highlight the social and cognitive aspects of students learning in STEM fields.

Classification: C29 C49 I20 C30 D70

Keywords: teacher knowledge; content knowledge; perceptions about representations; linear functions; students concept building; misconceptions; real-life situations