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**Rivera Quiroz, Santiago Manuel; Londoño Orrego, Sandra Milena; Jaramillo López, Carlos Mario**

**Measurement of area and volume in an authentic context: an alternative learning experience through mathematical modelling.**

Stillman, Gloria Ann (ed.) et al., Mathematical modelling in education research and practice. Cultural, social and cognitive influences. Cham: Springer (ISBN 978-3-319-18271-1/hbk; 978-3-319-18272-8/ebook). International Perspectives on the Teaching and Learning of Mathematical Modelling, 229-240 (2015).

Summary: This chapter shows the research results of the analysis of how Colombian Year ten students built mathematical models, through the measurement of area and volume, in the context of the flooding of their school. This situation allowed the creation of mathematical models associated with the quadratic and cubic functions, which were obtained from the environmental situation that allowed the students their application. The study was a qualitative case study focussing on two pairs of students. It took into account the everyday environment, communication, prior experiences and the interaction of each member with the group. The aim of the study was to explore and analyse the different ways students build models and apply mathematical elements arising in an authentic context.

*Classification:* M13 G33 F73 D33

*Keywords:* modeling measurement; area; volume; learning experiences

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