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Relationship between formative and summative assessments for elementary school students.

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, 435-440 (2015).

Summary: This is an exploratory study of the relationship between formative assessments during the academic year and the summative assessment at the end of the academic year in elementary school mathematics classrooms. Participants in this study are 72 teachers with 865 K–2 students in 13 schools in North Carolina of the United States. A three-level hierarchical linear model with summative assessment as the dependent variable and the average score of formative assessments as the independent variable was tested together with student demographic information, teacher assessment behavior, and school size and poverty. The results suggest a strong positive relationship between student performance on formative assessments and the summative assessment. This relationship is stronger in classrooms where teachers use more formative assessments. These findings suggest that formative assessments, when used for instructional purposes, give teachers feedback about teaching and help teachers understand students progress in mathematics learning process. When teachers adjust their teaching based upon the information gained from formative assessments, they are more likely to help students learn.

Classification: D62

Keywords: formative assessments; summative assessments; elementary school mathematics; school size; learning process; teacher assessment behavior