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Watson, Jane M.; Kelly, Ben A.; Callingham, Rosemary A.; Michael Shaughnessy, J.
The measurement of school students' understanding of statistical variation.

Int. J. Math. Educ. Sci. Technol. 34, No. 1, 1-29 (2003).

The paper presents a questionnaire devised to assess school students' understanding of statistical variation. The questionnaire is based on earlier research into students' understanding of the chance and data curriculum and recent work, more specifically related to variation. It was devised, piloted, revised, and administered to 746 students in grades 3, 5, 7, and 9 in ten Tasmanian schools. The analysis of outcomes was carried out in three stages: a hierarchical coding scheme was developed based on a structural model of cognitive development; a Rasch analysis was carried out to produce a variable map of student performance and item difficulty on a single scale; and a holistic model of development was suggested for the questionnaire. Outcomes for individual items are presented to illustrate the range of student responses, and possible rubrics for use by teachers. For some items, comparisons are made with results of other researchers. (orig.)

Classification: K12

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