

FACULTY OF EDUCATION, UNIVERSITY OF CAMBRIDGE

EASTER TERM 2012

CAMBRIDGE COLLOQUIA IN MATHEMATICS EDUCATION

Monday 21st May 2012 at 5.00 p.m., Room 205, Mary Allan Building, Hills Road

Professor Wim Van Dooren, University of Leuven, Belgium

THE LINEAR IMPERATIVE - LOOKING BACK ON A DECADE OF RESEARCH ON STUDENTS' INAPPROPRIATE USE OF PROPORTIONS

Looking back at my trajectory in mathematics education research, I find that I nearly always investigated students of various ages making mistakes when solving problems for which they possess all the required domain-specific knowledge. I will take the inappropriate use of linearity as an example (e.g. some students suppose that when the diameter of a circle is doubled, its area will also be doubled) and present studies in the domains of word problems, geometry, probability, statistics etc. To understand the over-use of linearity, one must make recourse to a variety of theoretical and methodological approaches. A cognitive-psychological focus needs to be complemented by considering the setting in which the mistake took place, and by a thorough understanding of the mathematical concepts involved.

Monday 11th June 2012 at 5.00 p.m., Room 205, Mary Allan Building, Hills Road

Dr Tim Rowland, University of Cambridge

EXPLANATION

My title is a response to my recurrent request for succinct seminar titles, but also reflects a belief that analysis and discussion of mathematical explanation is always interesting and productive. Gaea Leinhardt has written that "Instructional explanations are recognizable as being a part of the instructional landscape by teachers, students and observers". Indeed, as a beginning teacher, I believed that my pedagogical task was to find, develop, and hone, mathematical explanations. Once I had achieved these perfect explanations, student understanding would follow naturally. I was mistaken, but persist with explanations. In this seminar I shall seek to identify some explanation-ingredients, and consider implications for the development of mathematics teaching.

Tea and coffee will be available before each meeting. All are very welcome.

For directions to the Mary Allan Building and any other information, contact Tim Rowland at tr202@cam.ac.uk