

Nuffield Seminar Series on Mathematical Knowledge in Teaching

Date: 10th January 2008

Venue: University of Cambridge, Faculty of Education (184 Hills Road)

Seminar 4. Mathematical knowledge in teaching: the case of argumentation and proof.

This seminar will discuss the following three studies of mathematical knowledge in relation to argumentation and proof:

1. Yackel, E. (2002) What we can learn from analyzing the teacher's role in collective argumentation? *Journal of Mathematical Behavior* 21 (4) 423-440
2. Stylianides, A. J. & Ball, D. L. (in press) Understanding and describing mathematical knowledge for teaching: Knowledge about proof for engaging students in the activity of proving. *Journal of Mathematics Teacher Education*.
3. Knuth, E. J. (2002) Teachers' conceptions of proof in the context of secondary school mathematics. *Journal of Mathematics Teacher Education* 5(1) 61–88

The timetable will be as follows:

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| 10.30-11.00 | Arrivals and coffee [Reception: Faculty of Education, 184 Hills Road] |
| 11.00-11.15 | Introduction to the seminar (Kenneth Ruthven) |
| 11.15-12.15 | Plenary discussion of Paper 1: Yackel. Introduced* by Maria Goulding and Marie Joubert Gibbs. |
| 12.15-13.15 | Plenary discussion of Paper 2: Stylianides & Ball. Introduced* by Andreas Stylianides and Cathy Smith |
| 13.15-14.00 | Lunch |
| 14.00-15.00 | Plenary discussion of Paper 3: Knuth. Introduced* by Johannes Siemons and Paul Andrews. |
| 15.00-15.45 | Group discussion relating all three papers to seminar series themes.
Group 1: Theme – conceptualising and theorising mathematical knowledge for teaching. .
Group 2: Theme - auditing and assessing such knowledge
Group 3: Theme - developing and deepening such knowledge |
| 15.45-16.30 | Plenary discussion relating all three papers to seminar series themes, introduced* by brief remarks from the Groups 1, 2, 3. |
| 16.30-16.45 | Future plans |

*Short written versions of these introductory remarks will be made available on the seminar website after the meeting.