# MATHEMATICAL TALK: LINKS WITH SUBJECT KNOWLEDGE?

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This poster presents the results from a follow-up study to a London Mayor's funded project which aimed to support teachers of KS1 pupils (age 4-6) to encourage mathematical talk in their classrooms. The original study was an eighteen-month intervention programme to support teachers to develop their mathematics subject knowledge, as well as providing readings and activities to use in school with their pupils. Findings from follow-up interviews with eight teachers suggest that teachers want to feel confident about their subject knowledge before they feel able to encourage more mathematical talk in their classrooms.

## **INTRODUCTION**

There is a large body of research which has explored the type of knowledge that is necessary for effective mathematics teaching, but little of this work has focused on the impact that Subject Matter Knowledge (Shulman, 1986) has on particular pedagogic approaches such as teachers' use of talk in their mathematics classrooms. However, talk has been found to be instrumental in helping pupils make sense of their mathematical understanding (Mercer and Sams, 2006) and the original study sought to develop these interacting strands through an intervention programme with Year One and Two (ages four – six) teachers from thirty-three schools in South West London. This poster presents the findings from a subsequent follow-up study which used semi-structured interviews to explore the teachers' perceptions about how their subject knowledge interacted with their use and encouragement of mathematical talk in their classrooms.

## FINDINGS

Almost without exception, the teachers in the sample felt that their subject knowledge had improved. This is unsurprising given the resources that they were given (such as subject knowledge texts and additional booster sessions) but there was also a clear correlation between feeling confident as mathematics teachers and having secure subject knowledge. The implication of this was that teachers felt more confident to try different approaches in their classrooms which specifically focused on encouraging less teacher talk and more talk between pupils. For example, the teacher below had secure subject knowledge and she explained how this had increased her confidence to use tasks which required discussion about a variety of problem solving approaches.

... that element of subject knowledge... different ways that you can approach things and so your pedagogy, you know, how you set tasks up and what's the best way and ... knowing that there isn't always one way of solving a problem.

Finally, the teacher below explained that the project had impacted on her confidence to probe the children's mathematical understanding:

We do a lot more putting the wrong answer up or, and having to explain why it's the wrong answer. So I think definitely ... whereas before, is this right or wrong, whereas now it's well why is it wrong or why is it right?

#### References

- Shulman, L.S. (1986). Those who understand: knowledge growth in teaching. Educational Researcher, 15 (2), pp. 4-31.
- Mercer, N. and Sams, C. (2006) Teaching children how to use language to solve maths problems, Language and Education, 20 (6), pp. 507-528.