

# What characterises effective teacher-initiated teacher-pupil dialogue to promote conceptual understanding in mathematics lessons in England in Key Stages 2 and 3: a systematic review

## What do we want to know?

In mathematics lessons in England in Key Stages 2 to 3, what characterises effective teacher-initiated teacher-pupil dialogue to promote conceptual understanding in mathematics?

## Who wants to know and why?

This review was commissioned by the DCSF (formerly, the DfES) and will be of interest to all those concerned with the role of teacher-pupil dialogue in promoting pupils' conceptual understanding of mathematics.

## What did the Review Group find?

The review group's in-depth analysis of the included studies indicated the following:

- Traditional initiation-response-feedback (IRF) discourse dominated teacher-initiated teacher-pupil dialogue in mathematics lessons.
- Researchers investigating aspects of classroom discourse all argued that the quality of teacher-initiated teacher-pupil dialogue to promote pupils' conceptual understanding of mathematics needed to be improved.
- There were eight possible characteristics of effective teacher-initiated teacher-pupil dialogue: going beyond IRF; focusing attention on mathematics rather than performativity; working collaboratively with pupils; transformative listening; scaffolding; enhancing pupils' self-

knowledge of how to make use of teacher-pupil dialogue as a learning experience; encouraging high quality pupil dialogue; and inclusive teaching. However, few studies provided evidence that such characteristics actually led to the promotion of pupils' conceptual understanding of mathematics.

- The strongest evidence of the promotion of pupils' conceptual understanding of mathematics came from studies that focused on the enhancement of pupils' self-knowledge concerning how to make use of teacher-pupil dialogue as a learning experience.

## What are the implications?

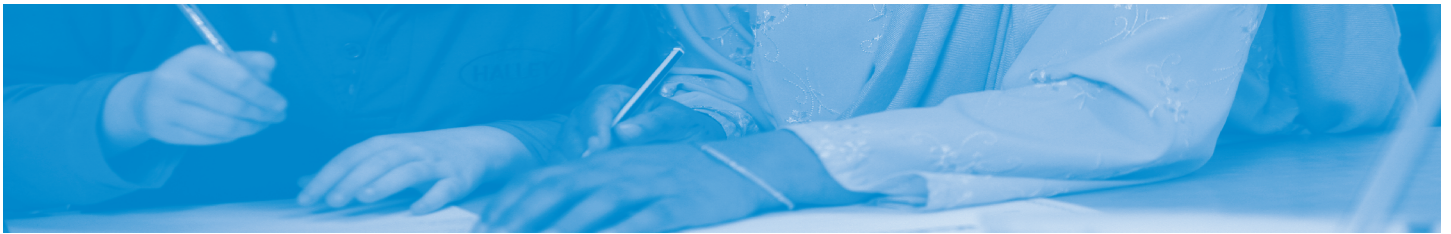
A limitation of this review was the paucity of evidence concerning the effect of these eight identified characteristics on promoting pupils' conceptual understanding mathematics. Policy-makers, practitioners and researchers need to consider how classroom practice can incorporate high quality teacher-initiated teacher-pupil dialogue.

## How did we get these results?

The findings are based on an in-depth analysis of 15 studies.

## Where to find further information

<http://eppi.ioe.ac.uk/cms/Default.aspx?tabid=405>



## Where to find further information

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The results of this systematic review are available in four formats:

#### SUMMARY

Explains the purpose of the review and the main messages from the research evidence

#### REPORT

Describes the background and the findings of the review(s) but without full technical details of the methods used

#### TECHNICAL REPORT

Includes the background, main findings, and full technical details of the review

#### DATABASES

Access to codings describing each research study included in the review

These can be downloaded or accessed at <http://eppi.ioe.ac.uk/reel/>

Reports published by the EPPI-Centre in March 2008.

The EPPI-Centre's reference numbers for the reports of this review are 1604T (Technical Report) and 1604R (Report). The full citations are:

#### TECHNICAL REPORT

Kyriacou C, Issitt J (2008) What characterises effective teacher-initiated teacher-pupil dialogue to promote conceptual understanding in mathematics lessons in England in Key Stages 2 and 3: a systematic review. Technical report. In: *Research Evidence in Education Library*. London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London.

#### REPORT

Kyriacou C, Issitt J (2008) What characterises effective teacher-initiated teacher-pupil dialogue to promote conceptual understanding in mathematics lessons in England in Key Stages 2 and 3: a systematic review. Report. In: *Research Evidence in Education Library*. London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London.

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