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Five strategies for coherence. Lessons from a Shanghai teacher.

Li, Yeping (ed.) et al., How Chinese teach mathematics and improve teaching. London: Routledge (ISBN 978-0-415-89500-2/hbk; 978-0-415-89601-6/pbk; 978-0-203-11011-9/ebook). Studies in Mathematical Thinking and Learning Series, 120-133 (2013).

From the introduction: This chapter begins with the following questions: What is instructional coherence? How may coherence be achieved in mathematics lessons? Can strategies for instructional coherence be derived from examples of Chinese mathematics lessons? Very few studies have been carried out to investigate these questions. This chapter attempts to provide brief answers to these questions by adapting ideas from several studies reported in the literature and by analysis of a small set of empirical data regarding a mathematics teacher in Shanghai. Four consecutive (grade 7) mathematics lessons of a Shanghai teacher are used as an illustrative case for the topic of simultaneous equations, showing how the teacher achieved coherence in the topic through his method of instruction. This approach allows an in-depth analysis of a small set of data to provide practical details of the actual teaching of the lessons. The present study contributes to an understanding of how to create coherence in math lessons by identifying five strategies for creating coherent mathematics instruction. Furthermore, by making the five strategies available to mathematics teachers in detail, it is hoped that the chapter may contribute to the theme, “How Chinese teachers teach mathematics and improve teaching”. In particular, two research questions are addressed in this chapter: What was the teacher’s strategy in creating the links between lessons and within a single lesson? How were the procedural and conceptual links created between the different tasks developed in the interaction involved in the tasks?

Classification: D40 D30 C70

Keywords: teaching and learning; instructional coherence; thematic connection; lesson routines; classroom discourse