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**A cross-cultural lesson comparison on teaching the connection between multiplication and division.**

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Summary: This study compared one lesson across four U.S. "traditional" textbook series, two U.S. reform-based textbook series, and one Chinese mathematics textbook series in teaching the connection between multiplication and division. The results showed the differences across U.S. and Chinese lessons in both the teaching and the practice parts of the lesson across three dimensions (i.e., problem schemata, response requirement, and algebra readiness). In particular, the Chinese lesson's penetrating analysis or explanation of the topic is reflected in its deliberately constructed examples and wide range of problems (pertaining to problem types and difficulty levels) present in the teaching and practice sections of the lesson. None of analyzed U.S. lessons are comparable with the Chinese lesson with respect to the breadth and depth in teaching the topic. A deliberate emphasis, both arithmetically and algebraically, on problem schema acquisition as found in the Chinese lesson represents a promotion of symbolic or higher order of conceptual understanding. The findings are discussed within the context of teaching big ideas through problem schemata acquisition and the importance of symbolic level of conceptual understanding.

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*Keywords:* textbooks; problem solving; multiplication; arithmetic; cross cultural studies; educational practices; teaching methods; comparative analysis; comparative education; textbook content; readiness; lesson plans; schematic studies; textbook evaluation; fused curriculum; problem sets  
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