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**Investigating the strategies used by pre-service teachers in Taiwan when responding to number sense questions.**

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Summary: This study examined the strategies used by pre-service teachers when responding to number sense related questions. 15 pre-service teachers from one University in Southern Taiwan were interviewed. Results indicated that about one-third of these pre-service teachers were able to use number sense strategies (such as understanding the meaning of numbers, operations and their relationships, recognizing the number size, developing and using benchmarks appropriately, and judging the reasonableness of a computational result by using the strategies of estimation) and the other two-thirds' relied heavily on written algorithms to solve problems. This is consistent with the findings of the earlier studies (Reys & Yang, 1998; Yang & Reys, 2002; Yang, 2003), which state that fifth, sixth and eighth graders in Taiwan rely heavily on the written method when responding to number sense related questions. This implies that the performance of pre-service elementary teachers on number sense is low. Furthermore, the results of this study also support that "effective teaching requires knowledge and understanding of mathematics" and the reports of the earlier studies and documents (Ma, 1999; NCTM, 1991, 2000; Schifter, 1999) that teachers need a profound understanding of important mathematical concepts and must "be able to represent mathematics as a coherent and connected enterprise" and "know and understand deeply the mathematics they are teaching and be able to draw on that knowledge with flexibility in their teaching tasks." (Contains 2 tables and 1 figure.) (ERIC)

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