

**ZMATH 2016b.00152**

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**Confidence and competence with mathematical procedures.**

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Summary: Confidence assessment (CA), in which students state alongside each of their answers a confidence level expressing how certain they are, has been employed successfully within higher education. However, it has not been widely explored with school pupils. This study examined how school mathematics pupils ( $N = 345$ ) in five different secondary schools in England responded to the use of a CA instrument designed to incentivise the eliciting of truthful confidence ratings in the topic of directed (positive and negative) numbers. Pupils readily understood the negative marking aspect of the CA process and their facility correlated with their mean confidence with  $r = .546$ ,  $N = 336$ ,  $p < .001$ , indicating that pupils were generally well calibrated. Pupils' comments indicated that the vast majority were positive about the CA approach, despite its dramatic differences from more usual assessment practices in UK schools. Some pupils felt that CA promoted deeper thinking, increased their confidence and had a potential role to play in classroom formative assessment.

*Classification:* C20 C30 D60 F40

*Keywords:* certainty-based assessment; confidence-based assessment; directed numbers; formative assessment; mixed methods research; negative numbers

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