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Future mathematics teachers' professional knowledge of elementary mathematics from an advanced standpoint.

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Summary: This paper reports a joint research project by researchers from three countries on an international comparative study that examines the professional knowledge of prospective mathematics teachers in elementary mathematics from an advanced standpoint. For this study, mathematical problems on various topics of elementary mathematical content were developed. Using this instrument, the mathematical knowledge of future teachers from Germany, Hong Kong, China (Hangzhou) and South Korea was measured empirically. The paper presents the design of the study, and also results are discussed. The results show that there are systematic differences among the participating countries; for example, the Korean future teachers outperform their counterparts in other countries. A more detailed analysis of the results suggests that the future teachers often do not seem to be able to link school and university knowledge systematically and cannot achieve the crucial “advanced standpoint” from the teacher training programme.

Classification: B50 C69 C49

Keywords: teacher education; mathematical content knowledge; professional knowledge

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