Buchholtz, Nils; Kaiser, Gabriele

Improving mathematics teacher education in Germany: empirical results from a longitudinal evaluation of innovative programs.


Summary: Innovative programs for restructuring the entry phase of mathematics teacher education programs have been implemented at various German universities within the last few years. This article reports about the design and the results of a longitudinal evaluation study of the effectiveness of two of these programs aiming to improve mathematics teacher education by altering the conditions in university teaching (the so-called Teacher Education and Development Study, TEDS-Telekom). The development of prospective teachers’ professional knowledge in academic mathematical content knowledge, knowledge in elementary mathematics from an advanced standpoint, and mathematical pedagogical content knowledge from the innovative programs were compared to traditional university programs. The study points out that the innovative programs only partially succeeded in improving the acquisition of professional knowledge for prospective mathematics teachers.

Classification: B50 D29

Keywords: elementary mathematics from an advanced standpoint; evaluation study; item response theory; mathematical content knowledge; mathematical pedagogical content knowledge; professional knowledge; teacher training program; TEDS-M; TEDS-Telekom