

Establishing a professional development network with an open-source dynamic mathematics software - GeoGebra

The principal aim of the project is to conduct research on an existing introductory-level GeoGebra professional development programme and establish criteria for its adaptation in the English context. The study will be conducted through tight collaboration of educational researchers and mathematics teachers in England.

GeoGebra (www.geogebra.org) is open-source dynamic mathematics software with rapidly growing worldwide popularity, especially in Europe and North America (Hohenwarter & Preiner 2007). This dynamic software package incorporates geometry, algebra, and calculus that other packages treat separately into a single easy-to-use package. GeoGebra is available free of charge and thousands of teachers and students both in classrooms and at home use it around the world (Hohenwarter & Lavicza, 2007). However, research suggests that, for the majority of teachers, solely providing technology is insufficient for the successful integration of technology into their teaching (Cuban, Kilpatrick, & Peck, 2001). It has been suggested that adequate training and collegial support boost teachers' willingness to integrate technology into their teaching and to develop successful technology-assisted teaching practices.

Within the NSF Mathematics and Science Partnership (MSP) initiative in the US a multi-level professional development programme is being developed to offer training for teachers in the use of the open-source dynamic mathematics software GeoGebra. In this project, teachers and researchers will meet to review this existing material from the US and modify the materials and pedagogical approaches based on the analysis of data collected in workshops. After adopting and preparing initial workshop materials participating teachers will organize and provide full-day workshops for teachers in their local area. Research assistants will support in these workshops, carry out observations, distribute questionnaires, and conduct interviews with workshop participants. Experiences from these workshops will be discussed and materials and pedagogical approaches will be adjusted for future workshops. These activities will provide a foundation for professional development programmes and for establishing GeoGebra Institutes in England.

References:

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