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MATHEMATICS TEACHERS' PERCEPTIONS ABOUT THEIR NEED FOR ONLINE SUPPORT

Abstract:

Comparative international studies on science and mathematics performance by school-going children categorize developing countries at the lower end of the spectrum. For example, South Africa's children performed second lowest in the TIMSS 2013 study. Increased focus is placed on the promotion of innovative ways of learning, such as implementing technology in the teaching and learning of mathematics. Although the majority of teachers have access to the Internet via mobile devices they often do not utilize this potentially rich resource. In addition to them not knowing what to select from the thousands of sources available on the Internet, they often lack sufficient time to sift through the sources and identify appropriate quality material. In South Africa, this challenge is specifically prevalent among teachers teaching in resource-constrained school settings. In response to the challenge faced by teachers of not having the time to conduct thorough Internet searches, or knowing what to choose from the extensive repertoire of sources available to them, we designed an electronic platform where teachers can access selected information, as part of the MIDHub (Mathematics Information Distribution Hub) project. As background to the design phase of the MIDHub project we obtained baseline data on the needs and expectations of the participating mathematics teachers. For this purpose, we conducted a Participatory Reflection and Action (PRA) investigation, utilising PRA-based activities, observation, field notes and visual data for data collection and documentation purposes. As theoretical framework we used the Unified Theory of Acceptance and Use of Technology (UTAUT) that explains people's acceptance and use of technology in terms of performance expectancy, effort expectancy, social influence, and facilitating conditions. Following inductive thematic analysis, we report on the teacher-participants' preferences in terms of mobile devices, delivery modes and ways of electronic communication in this paper, against the background of existing theory on effective selection of online material. The information we report on was subsequently used as background for designing the MIDHub platform.

Keywords:

mathematics teachers, perception, technology, online material

JEL Classification: I29, L86, L89