Understanding preservice teachers' technology use through TPACK framework

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Abstract: This study discusses preservice teachers' achievement barriers to technology integration, using principles of technological pedagogical content knowledge (TPACK) as an evaluative framework. Technology-capable participants each freely chose a content area to comprise project. Data analysis based on interactions among core components of TPACK revealed that participants struggled with developing new knowledge. Lack of pedagogical experience limited development of appropriate technology integration approaches. Creating new knowledge bases based on different teaching components can be difficult for preservice teachers because it requires a deep understanding of core knowledge and interpretation of the teaching context and its dynamics. Developing pedagogical content knowledge (PCK) is an important factor in overall technology integration; teachers must make it a priority to acquire PCK before integrating technology. In preservice teacher education, PCK development must be supported with actual teaching experience. We believe that the results of the study may provide valuable insight with respect to proper focus on technology integration and recognizing limitations and challenges within TPACK principles to both those who teach technology integration and those who design TPACK-based activities.

Author Keywords: Pedagogy and technology; Preservice teacher education; Technology integration; TPACK

Source title: Journal of Computer Assisted Learning

Link: Scorpus Link

Document Type: Article in Press

Source: Scopus

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