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The development of first year pre-service teachers' ICT pedagogical integration knowledge and skills.

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ABSTRACT

This study investigated the development of first-year pre-service teachers' Information and Communications Technology (ICT) pedagogical integration knowledge and skills in an ICT literacy course at a University in Johannesburg, South Africa. It also aimed to establish the extent to which the knowledge and skills were developed in the course. The United Nations Education Scientific and Cultural Organisation (UNESCO, 2018) ICT Competency Framework for Teachers (CFT), Koehler and Mishra (2006) and Kohler et al. (2014) Technological Pedagogical Content Knowledge (TPCK) were used to design a conceptual framework to guide this mixed methods research, which employed a concurrent triangulation design. Data was collected using a questionnaire which had both close-ended and open-ended questions. The close-ended questions provided quantitative data, while the open-ended questions yielded part of the qualitative data in this study. The other part of the qualitative data was obtained through document analysis.

The document analysis was carried out using content analysis, with data from the questionnaire analysed through descriptive statistical data analysis. The findings indicated that many of the pre-service teachers prior to the course were aware of the social use of Information and Communications Technologies (ICTs), such as: entertainment, games, searching information on the internet, and offline and online information sharing. This had formed their perception on the use of digital technologies. Their perception on educational use of ICTs was mainly for administrative purposes and searching and sharing content online. There is evidence that students' development of TPCK cannot be compared to that required for practicing teachers as they do not have PCK they need to adequately integrate ICTs. The findings also showed that unequal development of any of the knowledge constructs; Technological Knowledge (TK), Technological Pedagogical Knowledge (TPK), and Technological Content Knowledge (TCK) has a significant effect on the development of TPCK (Koehler & Mishra, 2006; Koehler et al., 2014). It is of essence that the content of an ICT literacy course ensures that there are equal levels of development for all the competencies it intends to develop using established levels of indicators such as those in the UNESCO ICT CFT.