



An Inquiry Into Personal Pedagogical Content Knowledge of Science Teachers: Stories of Teaching Electricity

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Abstract:

This research studied the experiences of science teachers to expose their personal pedagogical content knowledge (pPCK) of teaching electricity. Three secondary and two elementary teachers participated in this research. A narrative inquiry approach was used to study their experiences of planning and teaching an electricity unit. Oral and written narrative data were collected from multiple sources before, during and after implementing the electricity unit. Data were analyzed using topic-specific PCK (TSPCK) as a conceptual framework and narrative analysis as a technique. Meaningful and coherent stories of teaching electricity were developed to gain access to participants' pPCK. These stories revealed many constituent elements of pPCK in the form of events, incidents or stories of teaching electricity, exposing the narrative nature of pPCK. The study further explored the similarities and differences between secondary and elementary teachers' pPCK of teaching electricity. The study has implications for pre-service science teacher education.

Keywords: pedagogical content knowledge (PCK); personal pedagogical content knowledge (pPCK); topic-specific pedagogical content knowledge (TSPCK)

Biographical Note

Saiqa Azam has been an assistant professor of science education at the Faculty of Education, Memorial University of Newfoundland. Her current research agenda involves studying and documenting science teachers' pedagogical content knowledge (PCK). She is also interested in equity issues in science education.