

A Qualitative Case Study Exploring Zambian Mathematics Teachers' Content Knowledge of Functions

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Abstract : The relevance of what is content is taught in tertiary teacher training has long been in question. This study attempts to understand how advanced mathematics courses equip student teachers to teach functions at secondary school level. This paper reports on an investigation that was conducted in an African university, where preservice teachers were purposefully selected for participation in individual semi-structured interviews after completing a test on functions as taught at secondary school. They were asked to justify their reasoning in the test and to explain functions in a way that might bring about understanding of the topic in someone who did not know how functions work. These were final year preservice mathematics teachers who had studied advanced mathematics courses for three years. More than 50% of the students were not able to explain concepts or to justify their reasoning about secondary school functions in a coherent way. The results of this study suggest that the study of advanced mathematics does not automatically enable students to teach secondary school functions, and that, although these students were able to do advanced mathematics, they were unable to explain the working of functions in a way that would allow them to teach this topic successfully.

Keywords : secondary school, mathematical reasoning, student-teachers, functions

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