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An investigation of the development of students' and teachers' perceptions towards technology: A framework for reconstructing technology education in Malawi

Unpublished Ph.D thesis, Faculty of Education, University of Waikato

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Research leading to the development of technology as a school curriculum emphasises the importance of students developing technological literacy essential for living in a modern society. However, little is known about developments related to teaching and learning technology in Malawi schools.

My study investigated students' and teachers' perceptions about technology and technology education. The ultimate aims are (a) in developing their beliefs and practices suitable for teaching and learning a broad-based technology education, and (b) to inform future policy frameworks in Malawi for reconstructing the school curriculum.

Attempts to include science and technology and also craft, design and technology as learning areas have largely failed in the past because teachers lacked theoretical, philosophical and pedagogical underpinnings of these subjects. The need now is to establish technology education as a more comprehensive curriculum area than the existing technical curriculum. My study therefore can help broaden teachers' understanding of the nature of technology. In turn, this helps them to meaningfully conceptualise teaching and learning technology.

My study explored some of the influences of Malawi teachers' and students' ideas about technology and technology education including teaching practices. My research adopted an interpretive research methodology. Teachers were involved in in-depth, one-on-one and semi-structured interviews, group discussions and classroom observations before and after professional development workshops. This helped to collectively construct the social reality surrounding the teachers' existing beliefs and teaching practices and examined how to change those practices and beliefs. The study was situated in a socio-cultural theoretical framework by encouraging collaborative interactions among teachers in their school groups.

The study began by examining existing beliefs and practices. A professional development programme then helped teachers reconceptualise their understanding



about the nature of technology and technology education. Key characteristics of the professional development model included incorporating teachers' beliefs and practices, encouraging collaborative learning about technology. Examining students' PATT data, coupled with ongoing reflections and support, enhanced teachers' capacities to reflect on their own experiences for purposeful change. The professional development programme helped teachers develop their own concepts through reading scholarly papers, learning from other teachers' experiences and through discussing student concepts and attitudes to technology. The findings revealed an effective professional development model focussed on social cultural frameworks of learning. This focus resulted in teachers' positive perceptions of technology and technology education. I concluded that the teachers' contexts and the stance on the goals of the technical education curriculum influenced their understanding of the nature of technology and technology education.

This study provided teachers an opportunity for further professional growth and development leading to improved teaching practices and knowledge about technology and technology education. The findings have implications for pre-service and in-service teacher education and development, as well as policy change in relation to curriculum reviews and reforms in Malawi and possibly other developing countries.