Investigating Early Career Teachers' Design of Technology-Integrated Learning in Context

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the degree of

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under the supervision of
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CERTIFICATE OF ORIGINAL AUTHORSHIP

I, Lauren Jayne Knussen, declare that this thesis, is submitted in fulfilment of the requirements for the award of Doctor of Philosophy, in the School of International Studies and Education, Faculty of Arts and Social Sciences, at the University of Technology Sydney.

This thesis is wholly my own work unless otherwise referenced or acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

This document has not been submitted for qualifications at any other academic institution.

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Statement on format of thesis

This thesis is presented in the style of a conventional thesis.

Table of Contents

List of Figures

List of Tables

Abstract

The importance of preparing school students for a digitally-mediated future is widely acknowledged. Equally accepted is the role technology can play in supporting and enhancing contemporary teaching. The responsibility of designing and implementing technology-integrated learning (TIL) lies with schools, and by extension, with teachers. It is often assumed that early career teachers are well equipped to design TIL. However, the limited research on early career teachers (ECTs)' knowledge and skills in technology-integrated learning (TIL) indicates that ECTs struggle to design TIL which align with contemporary pedagogies. There is a need to better understand how recently qualified teachers are integrating technologies into their teaching practice. In particular, there is a need for more evidence-based knowledge about how early career teachers' individual and workplace contexts influence their thinking and practice as they design TIL programs.

The study investigated how ECTs engaged in the design of TIL in situ and the contextual factors which influenced them as they pursued their design work. Focusing ECTs' design work is a novel approach to investigating their practices and thinking about TIL as past research has relied extensively on reports of experience.

A multiple case study approach was used to provide rich description of seven early career teachers' practices of designing a TIL program for their students. The study was underpinned by activity theory, a framework that facilitated the analysis of internal and external contextual influences on each ECT's design process and thinking. Data was collected using interviews, researcher observations, think aloud protocols and program documents to provide a rich description of each early career teacher's process of designing a TIL program and the context within which they work. Data was analysed both inductively and deductively, guided by the activity theory framework.

The study found evidence of two different approaches to designing technology-integrated learning. The first was a redesign of an existing program. The second was the design of a new program. The redesign approach was found to result in limited creativity and innovation of TIL, whereas the design of a new program resulted in more creative and innovative TIL in the programs. Analysis of the participants' contexts revealed a that they were also influenced by a range of factors in their design environment. Influencing factors were their experiences in initial teacher education,

their skills and knowledge of TIL, school leadership and culture relating to TIL and access to technology in the school.

This study has shed new light on the contextual complexity of early career primary teachers' design work with TIL and the factors which influence this practice. Furthermore, the study provides insights into how these contextual factors interacted to support or limit ECTs in their design of TIL. The study identifies the value of fostering a positive culture of implementing TIL in schools, within which early career teachers are supported in their design of TIL programs. It also provides evidence that studying the complexities of digital pedagogies during initial teacher education can increase ECTs' capacity to innovate with technology when designing learning programs. Finally, the study proposes that future research focuses on exploring the social and operational activity systems in schools which influence technology integration. The potential development of learning design support systems for early career teachers designing TIL is also identified as a path for future research in this field.