BRING YOUR OWN DEVICES CLASSROOM: ISSUES OF DIGITAL DIVIDES IN TEACHING AND LEARNING CONTEXTS

A thesis presented in partial fulfilment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

in Information Technology at
Massey University, Albany campus, New Zealand

Janak Adhikari
2018

Bring Your Own Devices Classroom: Issues of Digital Divides in Teaching and Learning Contexts

Abstract

Since the late 1990s, *digital divide* has gathered much attention from the research community and government organizations. The education sector has been an important area of inquiry for many researchers, as they strive to inform government initiatives on strategies to address digital divide issues prevalent here. This study reports on how existing and new digital divides have evolved with increased penetration of digital learning technologies into teaching and learning practices and the wide usage of enabling technologies by students across formal and informal learning spaces (i.e. both in- and out-of-school), within the context of a BYOD (bring your own device) classroom initiative. A five-year longitudinal investigation of a BYOD classroom initiative by a New Zealand school helped to gain insights into different nature of digital divides in the learning process. First, the BYOD classroom initiative did not end up accentuating existing gaps in access to digital devices and information, despite initial results indicating towards a potentially digitally divided classroom. Second, the study strongly indicated the presence of gaps in terms of information literacy and critical thinking ability, which was eventually bridged in the later stage, as students slowly adjusted to the classroom curricular structures in the BYOD classroom. Third, learner self-efficacy has been identified as the most influential determinant of learning outcomes among students. In earlier phases of investigation of BYOD classrooms initiative, learner self-efficacy was found to be influenced by digital capability, in combination with information literacy, critical thinking ability, and positive motivation. However subsequently, self-efficacy influences affordances in

various aspects of social cognitive abilities related to individual's learning activities affecting how learners engage and apply technology to shape their learning outcomes. The study findings will inform policy makers and education government agencies, in their ongoing quest for bringing about inclusive digital transformation and overall improvement in learning outcomes.

Acknowledgements

During my PhD study, I have received support from many people who have contributed through their time, knowledge and continuous support.

First and foremost, I would like to thank my supervisor and mentor, Dr Anuradha Mathrani for her time, enthusiasm, constructive feedback, continuous motivation and encouragement, which enabled me to progress in my study. I am also very grateful to my co-supervisor Associate Professor Chris Scogings for his support and encouragement, which helped me to focus on my work.

I would like to thank the school for providing me an opportunity to conduct this study, including members of the management, teaching staff, students, and parents who provided valuable contributions to this dissertation project.

Most importantly, I wish to thank my parents, my wife Jyoti, and my son Abhinav for their encouragement and constant support. Without their patience and understanding, this thesis would not have been possible.

Table of Contents

List of Tables

Table of Figures