Chapter 14
Paradigm Surfing:
Cross-Disciplinary Education-Focused Research

Catherine Lang
La Trobe University, Australia

ABSTRACT

This chapter presents the experiences of a researcher conducting education research in the computing discipline, and in doing so provides evidence of a journey through several paradigms, hence the chapter title: paradigm surfing. A case-by-case retrospective analysis was conducted on several influential research projects with reference to the categorization of paradigms presented by Ling and Ling in Chapter 1 of this book, as well as categorizations presented by other scholars. The chapter provides an understanding of paradigm shifts influenced by the environment in which the research was conducted, the purpose of the research and the maturity of the researcher. The reflexive lens used demonstrates how these developmental research experiences have contributed to a rich understanding of the importance of paradigms and the nature of interdisciplinary educational research (epistemology). This led to a current identification with the pragmatic paradigm as the best fit for the author’s axiology.

INTRODUCTION

In this chapter the author presents the experiences of a researcher conducting education research in the computing discipline, and in doing so provides evidence of a journey through several paradigms, hence the chapter title: paradigm surfing. A retrospective lens is applied to four major research activities that shaped the career trajectory of the author from school teacher to university academic. The end point of this twenty-year research journey is acknowledgement of “surfing” through aspects of paradigms such as neo-positivist and interpretivist paradigms as defined by Ling and Ling in Chapter 1 of this book. The constructivist paradigm is based on the assumption that reality is socially constructed (Mertens, 2005) and has led to an identification with the pragmatic paradigm as the best fit for the author’s axiology.

A case-by-case retrospective analysis of the projects was conducted with the objective of providing the reader with an understanding of the paradigm shifts the author experienced on this research journey, DOI: 10.4018/978-1-5225-1738-2.ch014
while not perhaps understanding the importance of this at the time. In each case the set of assumptions held at that time (ontology) are presented to demonstrate how these were influenced by the environment in which the research was undertaken. The axiology, or intent of the researcher in each case was influenced by the employer, the thesis supervisors as well as intrinsic desire to gain an understanding of the various issues under investigation. The reflexive lens used demonstrates how research experiences contribute to the development of a rich understanding of the importance of paradigms and the nature of interdisciplinary educational research (epistemology).

BACKGROUND TO MY RESEARCH JOURNEY

As a practicing school teacher with ten years’ experience, I gained the opportunity to undertake a university-based Teaching Fellowship, which was a collaboration with one university and the Department of Education in my State. I was released from my school to the university for twelve months and retained my current school position and salary, not an unimportant consideration for anyone working as an academic in a university without a higher degree. The year-long secondment involved a commitment to teach into the undergraduate degree program, interact with university academics to promote smooth transition of students to higher education, and also undertake a research project related to teaching and learning.

In my school I was expert in two disciplines, Geography and Information Technology. While I was passionate about both areas I was aware of the growing importance of Computing and Information Technology in all aspects of education and business. I had observed that my senior classes were consistently dominated by male students, and despite my active petitioning to female students, I had little success in attracting them into the senior computing classes. Serendipitously, in my Teaching Fellowship application I proposed a research topic related to gender and computing that caught the attention of the Dean of the Faculty of Computing, who also was becoming increasingly aware of the gendered skew of students studying the discipline at university level.

The Teaching Fellowship led to my first taste of a research project beyond that of the student projects that were part of the final year school assessment in the subjects I taught. For example, in senior Geography this involved a systems approach to investigating inputs to a system, studying and evaluating processes within the system, and their subsequent effects on the outputs. In the Information Technology discipline the students investigated a current computing system or business process to evaluate its effectiveness in achieving the desired outputs and suggest ways it could be improved.

The Fellowship opportunity allowed me to explore research paradigms beyond the practical applications of a secondary school teacher across two disciplines. It also allowed me the time to realize that I enjoyed the research process and this developed into a desire to continue with the project and complete a Master’s degree in the topic of gender and computing.

Example 1: Cross-Cultural Investigation into Gender Imbalance in Computing

This first major research project undertaken in my Master of Education (Research) degree was a cross-cultural investigation into the gender imbalance in the computing discipline. It was cross-cultural in that the university where I was working taught programs in Singapore and in Australia and this provided the cohort of students for the investigation. There were seven principal questions posed in this research