A LEARNING COMMUNITY THROUGH
INFORMATION AND COMMUNICATION
TECHNOLOGY:

CHARACTERISTICS OF SUCCESS IN A CONTRIBUTING
PRIMARY SCHOOL

A thesis submitted as partial fulfilment of the requirements for the degree of Master of
Education Administration, Massey University, Palmerston North, New Zealand

Grant Ramsay

1999
DECLARATION

I declare that this thesis, A learning Community Through Information and Communication Technology: Characteristics of Success in a Contributing Primary School, represents my own work, except where due acknowledgement is made, and that it has not been previously included in a thesis, dissertation or report submitted to this University or to any other institution for a degree, diploma or other qualification.

Signed: [Signature]

Grant Ramsay

Date: 21/12/09
ABSTRACT

This thesis seeks to identify how institutionalised teaching and learning practices and processes - 'the way we do things around here' - have led to successful teaching and learning with information and communication technology (ICT) at a large contributing New Zealand primary school. The research findings are considered against the backdrop of the international literature, historical trends, and current educational conditions for New Zealand schools in relation to ICT. Consideration is also given as to whether elements of teaching and learning with ICT at the case study school can be correlated with the Key Characteristics of Effective Schools identified by Sammons et al, (1995).

The research is conducted in three stages. Stage One considers national requirements for ICT teaching and learning and how the school has fashioned its operating guidelines to ensure the school-wide implementation of ICT. The ICT perceptions and experiences of staff, students and parents at the case study learning community are also presented. Stage Two examines actual ICT teaching and learning practices and processes throughout the school and in five selected classes in particular. Stage Three is a reflective review of the school respondents’ views and experiences of teaching and learning with ICT.

The research establishes three important questions which must be asked (and answered) if successful school-wide implementation of teaching and learning with ICT is to be achieved: Why does the school believe it should teach and learn with ICT? What student learning with ICT is proposed to occur? How can the processes and practices of teaching and learning with ICT be put into place?

The research questions are designed to uncover the elements of teaching and learning with ICT at the case study school. However, these questions lead on to others concerning funding for, and research into, teaching and learning with ICT in New Zealand schools. A major contention of this research is that Government funding for ICT in schools should be linked to demonstrable improvements in student learning outcomes. The research also contends that immediate adoption of 'practised and proven' approaches already existent in some New Zealand schools would help many other schools improve teaching and learning with ICT in their respective learning communities.

Outcomes of the research identify and emphasise: an agreed school-wide philosophy on teaching and learning with ICT; focus on ICT pedagogy; a student-based approach; school responsibility for teaching and learning with ICT; shared leadership and management through a specific and responsive 'human infrastructure'; a sound technological infrastructure; school-based and student-orientated teacher professional development; confident and competent staff; and regular review of school and student performance/achievement in teaching and learning with ICT.
The thesis concludes by noting that change, and how this affects people, presents the greatest challenge for schools attempting to implement teaching and learning with ICT. It is the hard work, determination and coordinated efforts of the people in the learning community that will bring about successful learning with ICT for students.
ACKNOWLEDGEMENTS

This thesis is the product of 27 years of challenges, frustrations and successes experienced as a teacher in New Zealand schools. These experiences have been shared with a range of students and, in most instances, a highly skilled and dedicated group of teaching colleagues.

The successful implementation of teaching and learning with ICT has eluded and continues to elude many schools. The main reason for this is that the role of ICT in teaching and learning has, in my opinion, often been misrepresented or hi-jacked by people in industry, ‘supporting’ educational agencies and those in positions of influence within Government and the Ministry of Education. These people have generally sought to serve their own business, personal or political interests. Furthermore, all too often these ‘fountains of knowledge’ have had only the most tenuous of links with the ‘real world’ of education. Thus, they have never been required to implement their own doctrines and bring about school-wide change in teaching and learning with ICT. This study focuses on New Zealand students and what we as New Zealand teachers already know and can do in our learning communities. It is time for the voices of schools to be heard and acted upon.

My thanks go to the many teachers I have had the opportunity to work with and learn from, and in particular to the staff, Board of Trustees and wider community of Papatoetoe Central School for having the collective foresight, backbone and commitment to focus on the provision of learning opportunities and experiences for every student in our learning community.

I also wish to acknowledge the advice and support of the Research Review Group throughout the research. My special thanks go to Anna Shere for her many hours of assistance with data collection, constructive criticism and absolute support. I also wish to thank Dr Mollie Neville for her supervision and for ‘just being there’ at times when it really mattered. I also appreciated the advice and guidance received from Dr Ken Ryba in relation to the preparation of this research and for his supporting supervisory role.

I would also like to thank my close friend for the past 33 years and most ‘corrective critic’, Roger Olney, for his help in editing this work.

Finally, I am grateful for having such a supportive and resilient family who have had to endure too many sacrifices while this thesis was being researched and written. Thank you, Viv, for the ‘discussions’, advice and encouragement. Thank you to my daughter Gemma and son James for your understanding and patience with me. Without your unconditional support I would not have completed this thesis. I am looking forward to ‘coming home’.
TABLE OF CONTENTS

i) Declaration
ii) Abstract
iv) Acknowledgements
v) Table of Contents
vii) List of Tables
ix) List of Figures
x) List of Appendices

Chapter One - Introduction
  1.0 General Background
  1.1 Rationales for the Use of Computers in Schools
  1.2 Conflicts between Rationales
  1.3 Expectations - Responsibility - Actions
  1.4 School-Based Action
  1.5 Statement of Purpose
  1.6 Organisation of the Thesis

Chapter Two - Literature Review
  2.0 Introduction
  2.1 Towards a Definition of ICT
  2.2 Characteristics of Effective Schools
  2.3 Social Factors
  2.4 Infrastructure Factors
  2.5 Pedagogical Factors
  2.6 Teacher Education Factors
  2.7 Whole School Factors
  2.8 Summary

Chapter Three - Study Background, Problem and Methodology
  3.0 Introduction
  3.1 Background to the Problem
  3.2 Statement of the Problem and Research Intentions
  3.3 Methodology - Theoretical Perspective and Research Design Framework
  3.4 Summary

Chapter Four - Research Aims and Significance, Proposed Investigation and Other Considerations
  4.0 Introduction
  4.1 Specific Aims of the Research
4.2 Significance of the Research 67
4.3 Proposed Investigation 69
4.4 The Case Study, Researcher and Ethical Considerations 77
4.5 Summary 81

Chapter Five - Results Stage One
5.0 Introduction 83
5.1 Gazetted Requirements 83
5.2 Central School’s Requirements 88
5.3 Management Processes 112
5.4 Staff and Student Competence 127
5.5 Staff, Student and Parent Expectations 135
5.6 Summary 142

Chapter Six - Results Stage Two
6.0 Introduction 144
6.1 Planning for Student Learning 144
6.2 Student Learning Experiences 151
6.3 Assessment of Student Learning 162
6.4 Evaluation of Teaching and Learning 165
6.5 Reporting of Teaching and Learning 170
6.6 Summary 172

Chapter Seven - Results Stage Three
7.0 Introduction 174
7.1 Implementation of ICT - Positive and Negative Factors 174
7.2 Implementation of ICT - The Future 182
7.3 ICT - ‘The Way We Do Things Around Here’ 185
7.4 Group Discussion 187
7.5 Summary 189

Chapter Eight - Conclusion, Reflections and Implications
8.0 Introduction 191
8.1 Key Elements 191
8.2 Effective Schools and ICT 203
8.3 Supporting Elements 206
8.4 General Reflections of the Researcher 209
8.5 Implications of the Research 212
8.6 Summary 215

Bibliography 217

Appendices
Chapter Five

5.1 In-school professional development received in ICT. 122
5.2 Out-of-school professional development received in ICT. 122
5.3 Most beneficial professional development (PD) in ICT. 123
5.4 Training and/or sharing of ideas with other staff in ICT. 123
5.5 Hours of use of ICT in all classes during the sample week. 124
5.6 Regularity of student use of ICT tools for learning. 125
5.7 Provision of staff support in applying ICT tools for learning. 125
5.8 Provision of opportunities for personal learning through ICT. 126
5.9 Provision of opportunities for professional development related to teaching and learning through ICT. 126
5.10 Personal ICT application by staff. 127
5.11 Classroom ICT application. 128
5.12 Staff confidence and competence in applying ICT as a tool for student learning. 129
5.13 Successful implementation of ICT tools for learning across the school (staff). 129
5.14 Successful implementation of ICT tools for learning across the school (parents). 130
5.15 Success of ICT as a tool for learning by students in classrooms (staff). 130
5.16 Success of ICT as a tool for learning by students in classrooms (parents). 131
5.17 Staff as confident and competent users of ICT. 131
5.18 Confident and competent teacher of ICT. 132
5.19 Student use of ICT at their school. 132
5.20 Student perception of their learning with ICT at their school. 133
5.21 Student perception of personal ICT progress at their school. 133
5.22 Student perception of personal computer ability at their school. 134
5.23 Student preference for personal computer use at their school. 135
5.24 Student expectation of time on the computer at their school. 135
5.25 School expectation on staff to implement ICT tools for learning (staff). 136
5.26 School expectation on staff to implement ICT tools for learning (parents). 136
5.27 Staff expectation on own ability to successfully implement ICT for learning. 137
5.28 Staff views on student expectation to learn with ICT. 137
5.29 Students at our school expect to learn with ICT. 138
5.30 Staff views on parents’ expectation for their children’s learning with ICT.

5.31 Parents’ expectations of their children’s learning with ICT.

5.32 Students’ learning is positively enhanced using ICT in the classroom.

5.33 My child’s learning is positively enhanced by using ICT in his/her classroom.

5.34 Need for my child to learn the skills of and knowledge about using ICT at our school.

5.35 Need for my child to learn the skills of and knowledge about using ICT today and in the future.

5.36 The importance of compulsory ICT at our school (staff).

5.37 The importance of compulsory ICT at our school (parents).

Chapter Six

6.1 Teacher responses to actual activities in all classes.

6.2 Student responses to actual activities in all classes.

6.3 Teacher and student responses to ICT certificate goals in all classes.

6.4 Essential Learning Areas and ICT certificate goals related to ICT learning activities/experiences during the sample week in five selected classes.
# LIST OF FIGURES

## Chapter Two
- 2.1 Characteristics of effective schools. 13
- 2.2 Ecology of the learning environment. 19
- 2.3 Strategies for better thinking. 27
- 2.4 Innovative conditions required for change in ICT. 37
- 2.5 Indicators influencing the implementation of computer use in schools. 38

## Chapter Three
- 3.1 Business concerns in implementing ICT. 46
- 3.2 Qualitative paradigm assumptions. 58

## Chapter Four
- 4.1 Teacher’s, student’s and researcher’s understanding of actual learning in action: the ‘triangulation model’. 75

## Chapter Eight
- 8.1 Model of inter-related elements for school-wide implementation of teaching and learning with ICT. 197
**LIST OF APPENDICES**

<table>
<thead>
<tr>
<th>Appendix</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appendix 1</td>
<td>Letter of Introduction to the Study</td>
</tr>
<tr>
<td>Appendix 2</td>
<td>Introduction to the Study - Aims of the Research</td>
</tr>
<tr>
<td>Appendix 3</td>
<td>Board of Trustees Approval</td>
</tr>
<tr>
<td>Appendix 4</td>
<td>Memorandum of Agreement to Participate - Staff</td>
</tr>
<tr>
<td>Appendix 5</td>
<td>Letter to Participate - Parents/Caregivers</td>
</tr>
<tr>
<td>Appendix 6</td>
<td>Management Questionnaire</td>
</tr>
<tr>
<td>Appendix 7</td>
<td>Introduction to Staff Questionnaire</td>
</tr>
<tr>
<td>Appendix 8</td>
<td>Staff Perceptions in ICT - Questionnaire</td>
</tr>
<tr>
<td>Appendix 9</td>
<td>Student Questionnaire</td>
</tr>
<tr>
<td>Appendix 10</td>
<td>Parent Perceptions in ICT - Questionnaire</td>
</tr>
<tr>
<td>Appendix 11</td>
<td>In-Class Observation</td>
</tr>
<tr>
<td>Appendix 12</td>
<td>Teacher Diary</td>
</tr>
<tr>
<td>Appendix 13</td>
<td>Summary Questionnaire</td>
</tr>
<tr>
<td>Appendix 14</td>
<td>Central School IT Plan</td>
</tr>
<tr>
<td>Appendix 15</td>
<td>Information Technology Centre Plan</td>
</tr>
<tr>
<td>Appendix 16</td>
<td>Education Advisory IT Plan for Central School</td>
</tr>
<tr>
<td>Appendix 17</td>
<td>Information Technology Plan (Draft)</td>
</tr>
<tr>
<td>Appendix 18</td>
<td>Staff Meeting Notes - 24 April 1995</td>
</tr>
<tr>
<td>Appendix 19</td>
<td>Job Profile and PMS Agreement</td>
</tr>
<tr>
<td>Appendix 20</td>
<td>PMS - Staff Feedback</td>
</tr>
<tr>
<td>Appendix 21</td>
<td>Long Term Planning - Reading</td>
</tr>
<tr>
<td>Appendix 22</td>
<td>ICT Team - Organisation / Roles / Responsibilities</td>
</tr>
<tr>
<td>Appendix 23</td>
<td>ICT Team Meeting Notes - 10.3.98</td>
</tr>
<tr>
<td>Appendix 24</td>
<td>ICT Team Meeting Notes - 30.6.98</td>
</tr>
<tr>
<td>Appendix 25</td>
<td>ICT Staff and BOT Update - June 1999</td>
</tr>
<tr>
<td>Appendix 26</td>
<td>ICT Staff and BOT Update - July 1999</td>
</tr>
<tr>
<td>Appendix 27</td>
<td>ICT Student Achievement Graphs</td>
</tr>
<tr>
<td>Appendix 28</td>
<td>Staff Induction - ICT</td>
</tr>
<tr>
<td>Appendix 29</td>
<td>Discussion Group Notes</td>
</tr>
</tbody>
</table>