Information and Communication Technology in Secondary Schools:

A study of factors relating to the integration of ICT into the curriculum areas of English, mathematics, social studies and science

by

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ABSTRACT

New Zealand schools have been using ICT, especially computers, for more than two decades yet there is a lack of research in the secondary school area, of how and if, these technologies are being integrated into the curriculum. It has been well documented that the main use of ICT in secondary schools is for studying how the computer works, rather than using it to enhance student learning. The main question this study investigates is: to what extent are secondary schools integrating ICT into the core curriculum areas of English, mathematics, social studies and science? Areas such as teacher attitudes, professional development, access, policies, success factors and barriers were investigated. Student perceptions on the use of ICT were also sought. The findings from this study have the potential to assist school managers and teachers to understand how ICT can be successfully integrated into the curriculum.

A multi-dimensional research approach was used employing both quantitative and qualitative methods of data collection. A survey was conducted of 18 urban secondary schools. Data were collected from Heads of Departments of the target curriculum areas, and from one teacher in each department whom the HOD perceived to be an ICT–using teacher. From these data one school, perceived to be a successful ICT–using school, was selected according to set criteria, to be the subject of a case study. Interviews were conducted with the principal, the HOD ICT, the Librarian, a software consultant, as well as the HOD and a teacher from each curriculum area. Students from two year levels were also interviewed. This approach enabled an overview of ICT use in a range of secondary schools to be sought, followed by an in depth study of strategies used in one school.

Data were analysed according to a theoretical framework adapted to reflect the hierarchical situation in a secondary school. The macro, mesa and micro environments were analysed to understand the interrelationships that occur between these levels. Results from the study confirm a generally low level of ICT use in these curriculum areas and highlights a number of issues which impact at each level of a secondary school, with ramifications for the use of ICT.
in teaching and learning programmes. These issues include: school systems - policies and procedures, professional development, pedagogical knowledge of teachers, the role of the teacher, and access to, and location of, ICT equipment, especially computers. There is a complex interaction between all of these issues which need to be understood, for the meaningful integration of ICT into the curriculum to occur.
This thesis could not have been completed without the support and assistance of many people. First and foremost I would like to sincerely thank the secondary schools, the Principals, HODs and teachers who took the time from their busy schedules to complete the questionnaires. I am most grateful to the Principal and staff of Seaview High who went out of their way to make me welcome, and share their views and professional knowledge with me.

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Finally I would like to acknowledge the role of my family, my husband Ian, daughters Jennifer and Ngaire, and son-in-law Shane, without whose emotional support, encouragement, understanding and patience, this thesis would not have been completed.
DEDICATION

This thesis is dedicated to my mother,
Marjorie Constance Cornwall
1920 – 1983

who never had the opportunities
of the next generation.
DECLARATION

I declare that this thesis 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]
TABLE OF CONTENTS

i) Abstract ii) Acknowledgments iii) Dedication iv) Table of Contents v) List of Tables vi) List of Figures vii) List of Appendices

CHAPTER ONE – INTRODUCTION

Introduction 1
Background 1
Statement of Purpose 5
Organisation of the Thesis 5

CHAPTER TWO – LITERATURE REVIEW

Introduction 7
Policy Directions in New Zealand 7
Definition of Information and Communication Technology 13
Integrating ICT into the Curriculum 14
ICT in New Zealand Secondary Schools 29
ICT in Secondary Schools Overseas 37
Themes to Emerge 43
Statement of the Problem 47
Significance of the Study 48
Summary 48

CHAPTER THREE – METHOD

Introduction 50
Research Questions 50
Research Methodology 51
Nature of the Research 52
Research Design 54
Justification for the Research Design 54
Research Definitions 55
Research Population 57
Justification for Examining ICT in English, Mathematics, Social Studies and Science in Secondary Schools 57
Linking information Gathering Strategies to Specific Research Questions 58
Phase One 61
Phase Two 66
Ethical Considerations 83
Methodological Limitations 86
Summary 87

CHAPTER FOUR – RESULTS PHASE ONE

Introduction 88
Background of Participants 88
Attitudes and Opinions of teachers about the use of ICT 92
ICT Use in the Classroom 100
Professional Development 117
School Systems 123
Summary 126

CHAPTER FIVE – RESULTS PHASE TWO

Introduction 129
Background 130
School Policy, Procedures and Support Systems regarding ICT use 130
ICT Use in English 149
ICT Use in Mathematics 157
ICT Use in Social Sciences 162
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICT Use in Science</td>
<td>168</td>
</tr>
<tr>
<td>Extra Dimensions to the Case Study School</td>
<td>174</td>
</tr>
<tr>
<td>The students</td>
<td>176</td>
</tr>
<tr>
<td>Summary</td>
<td>178</td>
</tr>
</tbody>
</table>

**CHAPTER SIX – DISCUSSION**

- Introduction                                               | 180  |
- School Systems: Policies and Procedures                    | 181  |
- Professional Development                                   | 185  |
- Pedagogical Knowledge                                      | 190  |
- Role of the Teacher                                        | 196  |
- Access and Location                                        | 197  |
- A Model of Acquisition                                     | 201  |
- Limitations of the study                                   | 202  |
- Summary                                                    | 203  |

**CHAPTER SEVEN – CONCLUSION**

- Conclusion                                                 | 205  |

**REFERENCES**                                               | 208  |

**APPENDICES**                                               | 217  |
LIST OF TABLES

CHAPTER THREE

Table 3.1  Information gathering strategies used to answer sub questions 59
Table 3.2  Types of secondary schools in the sample area 61
Table 3.3  Percentage response rate for each group 64
Table 3.4  An aggregation of each school’s reported weekly and monthly use of ICT 68
Table 3.5  An aggregation of each school’s responses on selection criteria for a successful ICT using school 69
Table 3.6  People interviewed at the case study school 77

CHAPTER FOUR

Table 4.1  Sample of HODs and teachers from each curriculum area 89
Table 4.2  Gender breakdown showing position and curriculum area 89
Table 4.3  Length of time that HODs and teachers have been teaching. 90
Table 4.4  Length of time as an HOD 90
Table 4.5  Extent to which HODs and teachers think that integrating ICT into their curriculum area is important. 93
Table 4.6  Main benefits for student learning identified by HODs and teachers 94
Table 4.7  Success factors to enable the successful integration of ICT tools into the curriculum. 96
Table 4.8  Percentage of HODs and teachers in each curriculum area who have used the World Wide Web and email in the previous 4 terms 101
Table 4.9  Frequency of use by HODs and teachers of ICT with Years 9 and 10. 104
Table 4.10  Overview of recent successful experience using ICT
<table>
<thead>
<tr>
<th>Table 4.11</th>
<th>Recent successful experience using ICT reported by English HODs and teachers: writing processes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 4.12</td>
<td>Recent successful experience using ICT reported by English HODs and teachers: writing and visual language processes</td>
</tr>
<tr>
<td>Table 4.13</td>
<td>Recent successful experience using ICT reported by English HODs and teachers: research</td>
</tr>
<tr>
<td>Table 4.14</td>
<td>Recent successful experience using ICT reported by Mathematics HODs and teachers</td>
</tr>
<tr>
<td>Table 4.15</td>
<td>Recent successful experience using ICT reported by Social Studies HODs and teachers</td>
</tr>
<tr>
<td>Table 4.16</td>
<td>Recent successful experience using ICT reported by Science HODs and teachers: use of data capturing equipment</td>
</tr>
<tr>
<td>Table 4.17</td>
<td>Recent successful experience using ICT reported by Science HODs and teachers: use of simulations</td>
</tr>
<tr>
<td>Table 4.18</td>
<td>Recent successful experience using ICT reported by Science HODs and teachers: research</td>
</tr>
<tr>
<td>Table 4.19</td>
<td>Number of participants currently engaged in ICT professional development</td>
</tr>
<tr>
<td>Table 4.20</td>
<td>Number of participants attending ICT professional development in the previous two years</td>
</tr>
<tr>
<td>Table 4.21</td>
<td>Staff currently engaged in ICT professional development</td>
</tr>
<tr>
<td>Table 4.22</td>
<td>Type of professional development programmes HODs and teachers attended in 1999 and in the previous two years</td>
</tr>
<tr>
<td>Table 4.23</td>
<td>Number of responses indicating duration of course</td>
</tr>
<tr>
<td>Table 4.24</td>
<td>Number of responses indicating where the course was taught</td>
</tr>
<tr>
<td>Table 4.25</td>
<td>Number of responses indicating where the providers Originated</td>
</tr>
<tr>
<td>Table 4.26</td>
<td>Number of responses indicating the range of outside providers</td>
</tr>
<tr>
<td>Table 4.27</td>
<td>Leadership strategies HODs reported using to encourage in teaching and learning</td>
</tr>
</tbody>
</table>
the integration of ICT into their curriculum areas

CHAPTER FIVE

Table 5.1 Number of networked computers in the case study school as at July 1999

Table 5.2 Summary of RMSmart-Tools functions
LIST OF FIGURES

CHAPTER TWO

Figure 2.1  Ecology of the ICT-using Learning Environment in a Secondary School 28

CHAPTER THREE

Figure 3.1  Summary of information sent to schools 63

CHAPTER FOUR

Figure 4.1  Self reported experience levels of HODs and teachers in the use of ICT personally and in their work. 91
Figure 4.2  Self reported experience levels of HODs and teachers in the use of ICT in teaching and learning 91
Figure 4.3  A comparison of ICT use between the English and social studies curriculum areas 102
Figure 4.4  A comparison of ICT use between the mathematics and science curriculum areas 103
Figure 4.5  Frequency of use by HODs and teachers with Years 9 and 10 105
Figure 4.6  Frequency of use by HODs and teachers with Years 11, 12 and 13 105
Figure 4.7  Where ICT are mainly accessed from for each curriculum area 117
Figure 4.8  Where HODs and teachers reported gaining their most knowledge about ICT 123
Figure 4.9  Percentage of departments which have ICT mentioned in their schemes 124
Figure 4.10  HOD and teacher ratings of school support for the integration of ICT into curriculum areas 126
APPENDICES

1. Government ICT Strategy 218

PHASE ONE
2. Letter of explanation to the Principal 220
3. Information for Principals sheet 221
4. Consent form to sign and return 222
5. Instruction sheet for HODs 223
6. Information about the Research for HODs sheet 224
7. HOD questionnaire 225
8. Information about the Research for Teachers sheet 226
9. Teacher questionnaire 227
10. Reminder letter to HODs 228
11. Thank you letter to Principals who had returned Permission to Participate form 229
12. Thank you letter to Principals and asking them to sign Permission to Participate form 230

PHASE TWO
13. Letter to Principal 232
14. Subject Information Sheet 233
15. Student and Parent/caregiver Information and Consent form 234
16. Subject Consent Form 235
17. Principal Interview Questions 236
18. HOD Interview Questions 237
19. Teacher Interview Questions 238
20. Librarian Interview Questions 239
21. Student Interview Questions 240
22. Transcriber Confidentiality 241
23. Letter to Participants for transcript approval 242
24. Interviewee Declaration 243
25. Letter of thanks to case study Principal 244