

An evaluation of the implementation of ICT Policy for
Education in rural Namibian schools

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Submitted in fulfillment of the requirements for the degree of

PhD: Computer Integrated Education

In the Department of Science Mathematics and Technology

Education

Faculty of Education

University of Pretoria

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September 2010



DECLARATION

I declare that this thesis is my own unaided work. This thesis is being submitted for the Degree of Doctor of Philosophy in the University of Pretoria, South Africa. It has not been submitted before for any degree or examination to any other university.

Elizabeth Ndeukumwa Ngololo
15th September 2010



DEDICATION

This thesis is dedicated to my daughter,
Tulihaleni Naukongo Mary

ACKNOWLEDGEMENT

I wish to thank the Almighty God for giving me the courage and strength to work on this thesis. This thesis could not have been possible without much contribution from a number of people. I would like to thank the following people:

My promoters, Prof. Sarah Howie and Prof. Emeritus Tjeerd Plomp for your professional guidance throughout this thesis. The journey I travelled was not easy, thanks a lot for believing and encouraging, and allowing me to tap from your expertise in the field. I have gained a lot of knowledge from the discussions I have had with Prof. Emeritus Plomp during his visits to the Centre of Evaluation and Assessment (CEA), University of Pretoria. These discussions were followed by valuable 'critical comments' in track changes that would make me take a deep breath each time I received them. These comments served as serious reflections on the study and indeed strengthened the storyline.

The staff at (CEA), Lisa Zimmerman for your advice on proposal writing; Zelda Snyman and Zanele Matlou for welcoming me to the Centre for Evaluation and Assessment. Those cups of coffee kept me going during the lengthy discussion sessions with Prof. Howie.

Dr. David Graham for proof reading this thesis.

Dr. I. Neema and Mr. D. Hikumwa for providing guidance on statistical analysis.

The NUFU Project for the financial support. The workshops we had were a blend of academic work with pleasure, adding a wealth of cultural experiences to my life.

My colleagues at UNAM Northern Campus, as well as in the Bureau of Computer Services, Polytechnic of Namibia for letting me to continue undertaking this study.

The principals, science teachers, and all those who acted as ICT technicians in combined and secondary schools in the Ohangwena, Oshikoto and Oshana educational regions for participating in this study. I would also like to thank the

school inspectors in the said educational regions for assisting in the collection of the questionnaires.

My family and friends, for being very supportive and understanding of the very hectic and busy times I had. I can recall some of you complaining about my being away from home. You all contributed to my success.

Special thanks to my parents for a commendable upbringing, sisters and brother for your continuous support throughout my academic life. I thank you for keeping me in your prayers always.

Finally, I would like to thank my daughter for being tolerant and understanding. I had to explain to her every time why “Mummy is going to school, again and again....” This thesis should serve as a motivation for her and the generations to come.



ABSTRACT

Many governments across the world have invested a lot of resources in information and communication technology (ICT) development with an aim to enhance teaching and learning using technology in schools. New educational ICT policy issues emerged and new patterns of ICT related practices are observable in education. This initiative has necessitated the development of National ICT Policies that will guide the implementation process in schools. Namibia has adopted the National ICT policy for Education in 2005 and the National ICT Policy Implementation Plan in 2006. Since the adoption no study was done to evaluate the implementation process, especially in rural schools where the teaching has been proven difficult. This study evaluates the implementation of the National ICT Policy for Education in Namibian rural junior secondary schools, especially in science classrooms.

The thesis is a mixed methods study, undertaking survey and case studies. The study was conducted in the three educational regions, namely, Ohangwena; Oshana; and Oshikoto in Northern Namibia where 163 schools were sampled. The purpose of the study was to describe how ICT is being implemented in science classrooms and also explore factors that affect ICT implementation in rural schools.

The study's findings indicate that the rural schools in Namibia are in the initial phase of ICT implementation. ICT use and pedagogical use is low due to lack of professional development courses, pedagogical support and lack of ICT related resources. However, the few schools with high pedagogical use of ICT have shown an entrepreneurial leadership style and vision of the science teachers. The relational analysis suggests three main predictors of ICT implementation in rural schools. These findings were confirmed through case studies of successful schools. In addition, the findings were legitimised by the participants of the ICT use conference.

The Kennisnet model (2009) was adopted and adapted as a conceptual framework for this study. The Howie model (2002) provided the frame within which the structure of input, process and outcome could be identified. The data was consistent with the adapted Kennisnet model (2009) and added five more constructs namely, entrepreneurial leadership, science curriculum goals, entrepreneurial science teachers' vision, general use of ICT. The general use of ICT and attitudes of the science teachers influences the pedagogical use of ICT as added to the Howie model (2002).

The results of this research suggest ways to improve the pedagogical use of ICT in rural schools; enable policymakers to make informed decision about resource allocation to the rural schools; and on teacher professional development in order to improve the current rural situation regarding ICT use.

Key words: Evaluation, Information Communication Technology (ICT), national policy, rural schools, Namibia, developing countries, pedagogical use of ICT, expertise, digital learning materials, infrastructure.



TABLE OF CONTENTS

DECLARATION	I
DEDICATION	II
ACKNOWLEDGEMENT	III
ABSTRACT	V
TABLE OF CONTENTS	VII
LIST OF TABLES	XII
LIST OF FIGURES	XIV
LIST OF ACRONYMS	XV
CHAPTER 1	1
INTRODUCTION	1
1.1 Introduction	1
1.2 The research problem and questions	5
1.3 The research aims and objectives	8
1.4 An overview of the research design	9
1.5 Significance of the research.....	15
1.6 Overview of the thesis	16
CHAPTER 2	18
CONTEXT OF THE STUDY	18
2.1 Introduction	18
2.2 Geographic, political and socio-economic status of Namibia	18
2.3 The Namibian Education system.....	21
2.4 Realising Vision 2030 through the Education and Training Sector	23
2.5 Description of the Namibian ICT Policy for Education	27
2.5.1 Goals and objectives of the National ICT Policy for Education	28
2.5.2 Critical components of ICT framework	29
2.6 Conceptualisation of the problem.....	39
2.7 Importance of the study for the Namibian context.....	42
2.8 Conclusion	43



CHAPTER 3	44
LITERATURE REVIEW	44
3.1 Introduction	44
3.2 Definition of concepts and keywords	47
3.3 Rationale for use of ICT in education	49
3.4 General use of ICT in Education	51
3.5 ICT implementation in the developed world	54
3.5.1 National systems level	56
3.5.2 ICT implementation at school level	60
3.6 ICT implementation in the developing world	64
3.6.1 ICT implementation at national level	64
3.6.2 ICT implementation at school level	69
3.7 Factors affecting ICT implementation at school and teacher	75
level	75
3.8 Conceptual framework	90
3.8.1 The Four-in-Balance-Model	90
3.8.2 The Howie Model	92
3.8.3 Conceptual framework for this study	97
CHAPTER 4	101
RESEARCH DESIGN AND METHODS	101
4.1 Introduction	101
4.2 Research paradigm	102
4.3 Research design	103
4.3.1 Overview of research design	104
4.3.2 Survey	111
4.3.3 Case studies	124
4.3.4 The ICT use conference	129
4.4 Methodological norms	135
4.5 Ethical issues	137
4.6 Conclusion	138



CHAPTER 5	140
ICT IMPLEMENTATION IN SCIENCE CLASSROOMS	140
5.1 Introduction	140
5.2 Biographical information of the science teachers.....	141
5.3 Description of ICT use in science classrooms.....	147
5.4 Case studies' findings on ICT use in science classrooms	153
5.5 Cross case analysis	165
5.6 Conclusion	180
CHAPTER 6	182
FACTORS AFFECTING ICT IMPLEMENTATION IN RURAL SCHOOLS	182
6.1 Introduction	182
6.2 Background of respondents	183
6.2.1 Background information of the principals.....	183
6.2.2 Background information of the ICT technicians	187
6.3 Profile of rural schools and ICT use.....	190
6.4 Interpretation of factors related to ICT implementation.....	197
6.5 Factors predicting ICT implementation in rural areas.....	225
6.5.1 Correlation analysis	225
6.5.2 Regression analysis	230
6.6 Findings of school level case studies.....	231
6.7 Conclusion.....	255
CHAPTER 7	257
ICT USE CONFERENCE FINDINGS	257
7.1 Introduction	257
7.2. Conference participants' perceptions' of ICT implementation in rural schools	260
7.3 Conference participants' views about factors affecting ICT implementation.....	267
7.4 Summary of the negotiated findings for the study	277



CHAPTER 8	280
CONCLUSIONS AND RECOMMENDATIONS	280
8.1 Summary of the research	280
8.2 Summary of the research findings	282
8.2.1 Pedagogical use of ICT in science classrooms.....	282
8.2.2 Factors affecting ICT implementation in rural schools:.....	291
8.3 Reflections.....	294
8.3.1 Methodology.....	294
8.3.2 Conceptual framework	297
8.4 Conclusions and Recommendations regarding ICT implementation in rural areas	300
REFERENCES:.....	300
APPENDIX A.....	300
PERMISSION TO CONDUCT RESEARCH	300
APPENDIX B.....	302
PERMISSION TO CONDUCT RESEARCH	302
APPENDIX C.....	303
ETHICAL CLEARANCE CERTIFICATE.....	303
APPENDIX D.....	305
LETTER TO PARTICIPANTS.....	305
APPENDIX: E QUESTIONNAIRE FOR PRINCIPALS	306
APPENDIX F:.....	328
QUESTIONNAIRE FOR SCIENCE TEACHERS.....	328
APPENDIX G	347
QUESTIONNAIRE FOR TECHNICIANS.....	348
APPENDIX H.....	363
INTERVIEW SCHEDULE FOR PRINCIPALS	363
APPENDIX I	365
INTERVIEW SCHEDULE FOR SCIENCE TEACHER	365
APPENDIX J	367
INTERVIEW SCHEDULE FOR ICT TECHNICIAN.....	367
APPENDIX K.....	369
CLASSROOM OBSERVATION SCHEDULE FOR SCIENCE TEACHERS	369



APPENDIX L: ICT USE CONFERENCE PROGRAMME	374
APPENDIX M	375
POWERPOINT PRESENTATION	375
APPENDIX N: ICT USE CONFERENCE	394
APPENDIX O: TABLE OF INDICES.....	408
APPENDIX P.....	414
CORRELATIONS TABLE.....	414
APPENIDX P: LETTER FROM THE EDITOR.....	417

LIST OF TABLES

TABLE 2. 1: NAMIBIA PROFILE	20
TABLE 2. 2: THE NAMIBIAN SCHOOL SYSTEM	22
TABLE 2. 3: SUMMARY OF ALLOCATION OF FUNDS FOR ETSIP FOR 2009/2010.....	25
TABLE 2. 4: TOTAL ALLOCATION OF TRAINING ALLOCATION OF TRAINING AND USAGE (2007/2008-2009/10).....	26
TABLE 2. 5: TOTAL NUMBER OF TEACHERS TRAINED IN INTERNATIONAL COMPUTERS DRIVERS LICENSE (ICDL) (2007-2009)	27
TABLE 2. 6: PERCENTAGE OF ICT DISTRIBUTION PER REGION	36
TABLE 2. 7: BENCHMARK OF ICT IMPLEMENTATION.....	37
TABLE 2. 8: A TYPOLOGY OF CURRICULUM REPRESENTATION ADAPTED FOR THE ICT....	39
TABLE 2. 9: A SUMMARY OF THE RATIONALES STRATEGIC POLICY FOR EDUCATIONAL ICT	40
TABLE 3. 1: KEYWORDS USED IN VARIOUS DATABASES	46
TABLE 3. 2: AN ADAPTED MODEL OF PATTERNS OF USES OF ICT	52
TABLE 3. 3: CLASSIFICATION OF DIFFERENT ICT APPLICATIONS & THEIR EDUCATIONAL ICT	85
(ANDERSON, 2008: 12).....	87
TABLE 4. 1: DATA COLLECTION MATRIX	107
TABLE 4. 2: POPULATION AND SAMPLES OF SCHOOLS PER EDUCATIONAL REGION	113
TABLE 4. 3: CONTENTS OF THE PRINCIPALS' QUESTIONNAIRE	115
TABLE 4. 4: CONTENTS OF THE SCIENCE TEACHERS' QUESTIONNAIRE	117
TABLE 4. 5: CONTENT OF THE ICT TECHNICIANS; QUESTIONNAIRE	118
TABLE 4. 6: POPULATION AND SAMPLES FOR CASE STUDIES PER EDUCATIONAL REGION	125
TABLE 4. 7: POPULATION AND SAMPLES FOR ICT USE CONFERENCE PER EDUCATIONAL REGION.....	131
TABLE 4. 8: RELIABILITY ANALYSIS OF QUESTIONNAIRE DATA PER INSTRUMENT	136
TABLE 5. 1: AGE DISTRIBUTION OF SCIENCE TEACHERS (N=137)	143
TABLE 5. 2: LEARNERS' ICT SKILLS OPERATIONS (N=137)	146
TABLE 5. 3: AVERAGE ICT CLASS TIME ALLOCATION PER WEEK (N=137)	147
TABLE 5. 4: DESCRIPTION OF VARIABLES	149
TABLE 5. 5: CHARACTERISTICS OF SCIENCE TEACHERS	154
TABLE 6. 1: YEARS OF OCCUPATION OF PRINCIPAL POSITION (N=105).....	183
TABLE 6. 2: ACTIVITIES FOR ICT USE BY PRINCIPALS.....	185
TABLE 6. 3: OTHER POSITION IN SCHOOL HELD BY ICT TECHNICIANS	188
TABLE 6. 4: DUTIES OF ICT TECHNICIANS (N=70).....	188
TABLE 6. 5: PEOPLE IN THE VILLAGES (N=105)	191
TABLE 6. 6: PERCENTAGE OF LEARNER ABSENTEEISM (N=105)	191
TABLE 6. 7: MOST IMPORTANT PRINCIPALS' ACTIVITIES DURING THE PAST FEW YEARS (N=105).....	192
TABLE 6. 8: DESCRIPTION OF INDEPENDENT VARIABLES	193
TABLE 6. 9: EFFORT TOTAL VARIANCE EXPLAINED	200
TABLE 6. 10: EFFORT ROTATED COMPONENT MATRIX.....	201
TABLE 6. 11: VISION: TOTAL VARIANCE EXPLAINED.....	202
TABLE 6. 12: VISION: ROTATED COMPONENT MATRIX	203
TABLE 6. 13: LEADERSHIP: TOTAL VARIANCE EXPLAINED	204



TABLE 6. 14: LEADERSHIP: ROTATED COMPONENT MATRIX.....	205
TABLE 6. 15: ICT USE IN SCHOOL: TOTAL VARIANCE EXPLAINED	209
TABLE 6. 16: ICT USE IN SCHOOL: ROTATED COMPONENT MATRIX	210
TABLE 6. 17: DIGITAL LEARNING MATERIAL: TOTAL VARIANCE EXPLAINED.....	211
TABLE 6. 18: DIGITAL LEARNING MATERIAL: ROTATED COMPONENT MATRIX	212
TABLE 6. 19: TECHNICAL SUPPORT: TOTAL VARIANCE EXPLAINED	214
TABLE 6. 20: TECHNICAL SUPPORT: ROTATED COMPONENT MATRIX.....	214
TABLE 6. 21: DIGITAL LEARNING MATERIAL: TOTAL VARIANCE EXPLAINED.....	215
TABLE 6. 22: DIGITAL LEARNING MATERIAL: ROTATED COMPONENT MATRIX	216
TABLE 6. 23: EXPERTISE: TOTAL VARIANCE EXPLAINED	218
TABLE 6. 24: EXPERTISE: ROTATED COMPONENT MATRIX.....	219
TABLE 6. 25: SCIENCE CURRICULUM GOALS: TOTAL VARIANCE EXPLAINED.....	221
TABLE 6. 26: SCIENCE CURRICULUM GOALS: ROTATED COMPONENT MATRIX	222
TABLE 6. 27: CORRELATIONS OF THE PRINCIPALS AND THE SCIENCE TEACHERS	226
TABLE 6. 28: ANOVA RESULT	231
TABLE 6. 29: CHARACTERISTICS OF THE SCHOOL PRINCIPALS, SCIENCE TEACHERS AND ICT TECHNICIANS	232
TABLE 6. 30: RESPONSE OF PRINCIPALS TO THE NUMBER OF COMPUTERS PER SCHOOL	245
TABLE 7. 1: CHARACTERISTICS OF THE SCHOOL PRINCIPALS, SCIENCE TEACHERS AND ICT TECHNICIANS	259
TABLE 7. 2: ICT CONFERENCE FINDINGS ON ICT INFRASTRUCTURE.....	261
TABLE 7. 3: ICT CONFERENCE FINDINGS ON DIGITAL LEARNING MATERIALS	262
TABLE 7. 4: ICT CONFERENCE FINDINGS ON EXPERTISE.....	263
TABLE 7. 5: ICT CONFERENCE FINDINGS ON VISION AND LEADERSHIP	264
TABLE 7. 6: ICT CONFERENCE FINDINGS ON COLLABORATION AND SUPPORT	265
TABLE 7. 7: ICT CONFERENCE FINDINGS ON PROFESSIONAL DEVELOPMENT	266
TABLE 7. 8: FINDINGS ON FACTORS AFFECTING ICT IMPLEMENTATION	268



LIST OF FIGURES

FIGURE 1.1: THE RESEARCH MODEL FOR THIS STUDY.....	11
FIGURE 2.1: MAP OF EDUCATIONAL REGIONS IN NAMIBIA.....	19
FIGURE 2.2: THE NATIONAL ICT POLICY FOR EDUCATION FRAMEWORK	29
FIGURE 2.3: REGIONAL DISTRIBUTION AS AT 2010	35
FIGURE 3. 1: AN ADOPTED CONCEPTUAL FRAMEWORK ILLUSTRATING THE RELATIONSHIP BETWEEN KNOWLEDGE-RELATED SKILLS AND KNOWLEDGE-RELATED TASK PROGRESSES, WITH OR WITHOUT ICT.....	87
FIGURE 3. 2: AN ADOPTED BASIC ELEMENTS OF THE FOUR-IN-BALANCE MODEL (2009)	92
FIGURE 3. 3: THE HOWIE MODEL (2002).....	93
FIGURE 3. 4: THE ADAPTED HOWIE MODEL (2002).....	96
FIGURE 3. 5: FACTORS AFFECTING ICT IMPLEMENTATION IN RURAL SCHOOLS	98
FIGURE 4. 1: RESEARCH DESIGN	106
FIGURE 5. 1: YEARS OF TEACHING EXPERIENCE OF SCIENCE TEACHERS (N=137).....	141
FIGURE 5. 2: SCIENCE TEACHER'S QUALIFICATIONS (N=137).....	142
FIGURE 5. 3: GENDER OF SCIENCE TEACHERS (N=134)	144
FIGURE 5. 4: ACCESS TO COMPUTERS AT HOME (N=137).....	145
FIGURE 5. 5: COMPUTERS' CONNECTIVITY TO INTERNET (N=137)	145
FIGURE 6. 1: AGE DISTRIBUTION OF PRINCIPALS (N=105)	184
FIGURE 6. 2: GENDER OF PRINCIPALS (N=105)	185
FIGURE 6. 3: USE OF PRINCIPAL OWNED COMPUTERS FOR SCHOOL-RELATED ACTIVITIES	186
FIGURE 6. 4: PERCENTAGE OF PRINCIPALS' OWNED PERSONAL COMPUTERS CONNECTED TO THE INTERNET (N=105)	187
FIGURE 7. 1: LINK OF FACTORS BY GROUP 1.....	269
FIGURE 7. 2: LINKING OF FACTORS BY GROUP 2.....	270



LIST OF ACRONYMS

AISI	African Information Society Initiative
CECS	Community Education Computer Centre
EMIS	Education Management Information System
ETSIP	Education and Training Sector Improvement Programme
GeSCI	Global eSchool and Community Initiative
HIGCSE	Higher International General Certificate for Secondary Education
ICDL	International Computer Drivers License
ICT	Information Communication and Technology
IGCSE	International General Certificate for Secondary Education
IMTE	Intergrated Media in Technology Education
iNET	Initiative for Namibian Educational Technology
MBESC	Ministry of Basic Education, Sports and Culture
MHETEC	Ministry of Higher Education, Training and Employment Creation
MOE	Ministry of Education
NCQ	National Context Questionnaire
NETA	Namibian Education Technology Alliance
NETSS	National Education Technology Service and Support Centre
NPC	National Planning Commission
SADC	Southern African Development Community
SCM	Success Case Methods
SITES	Second Information Technology Education Study
SWAPO	South West Africa People's Organisation
UNAM	University of Namibia
UNESCO	United Nations Education and Science Community Organisation



USAID	United States Agency for International Development
VET	Vocational Education and Training
VTC	Vocational Training Centre
XNET	XNET Development Trust