Dedication

I dedicate my thesis to the soul of my father, to my loving mother and family.

Acknowledgments

First and foremost, praise be to Allah who granted me the strength and ability to pursue this study. I am very grateful to my supervisor Dr. Amna Mohamed Abd Alkareem Bedri who spared no effort in guiding me through this work. I am also greatly indebted to the staff of Faculty of Graduate Studies, Sudan University of Science and Technology, and English Language Department, Faculty of Education who were very cooperative and supportive to me. My gratitude is due to all of the students and teachers who participated in my questionnaire and interview.

Abstract

This study aims to investigate and identify the prospective role of computer access at University, Information and Communication Technology (ICT) expertise and related computer qualifications in the development of pre-service teachers' self-efficacy. It also aimed to examine ICT self –efficacy levels among Sudanese EFL pre-service teachers and to what extent can this affect the adoption of suitable instructional principles in the classroom. The study adopted a descriptive methodology which combined both qualitative and quantitative analysis. Two instruments were used for data collection which were a questionnaire for (50) pre-services teachers and an interview for (7) in-service teachers. Responses were analyzed using a statistical package for social science (SPSS). The social cognitive theory was used as a framework to measure the self-efficacy levels. Some of the most important results revealed that, although a limited number of the EFL pre-service teachers have access to computers at University, it is confirmed that almost all EFL pre-service teachers trust their ability to effectively implement and integrate the wide range capabilities of ICT into their current learning approaches and future classrooms contexts. Furthermore, EFL pre-service teachers exhibited higher ICT self-efficacy levels. The study also offered some recommendations the most important of which is for the Ministry of Higher Education to sponsor ICT training courses, workshops and seminars to motivate and encourage teachers to utilize ICT for educational purposes. Moreover, Universities, Colleges and teacher training Institutes should take positive steps in equipping pre-service teachers with ICT knowledge and skills required. Moreover the study gave suggestions for further research in the same area.

مستخلص البحث

تهدف هذه الدراسة للتقصي والتعرف على الدور الذي يعلبه استخدام الحاسب الالي في الجامعة والخبرات العملية والعلمية في تقنية المعلومات وعلوم الاتصال في تطوير الكفاءة الذاتية لدى طلاب اللغة الانجليزية. كما هدفت الدراسة أيضا الي قياس مستويات الكفاءة الذاتية المتعلقة باستخدام هذه الوسائط ومدي تأثير ذلك على طرق وأساليب التعليم. اتبعت الدراسة المنهج الوصفي والذي مزج بين نوعي التحليل الكيفي والكمي للبيانات. أستخدمت الأستبانة كأداة لجمع البيانات من عينة البحث والتي تكونت من عدد خمسين طالبا من طلاب الفرقة الرابعة كما تم اجراء المقابلة الكتابية مع عدد سبعة من اساتذة اللغة الانجليزية. اعطت البيانات التي توفرت من عينة الطلاب والأساتذة اجابات لأسئلة الدراسة. تم تحليل البيانات باستخدام برنامج التحليل الاحصائي للعلوم الاجتماعية (SPSS). وتم استخدام نظرية (الإدراك الاجتماعي) كإطار في تحليل مستويات الكفاءة الذاتية لدى الطلاب. ومن أهم النتائج التي توصلت اليها الدراسة أن معظم طلاب الفرقة الرابعة يتمتعون بثقة عالية في مقدرتهم على استخدام تقنية المعلومات وعلوم الاتصال للأغراض التعليمية حاضرا ومستقبلا على الرغم من محدودية استخدامهم للحاسب الالي في الجامعة. اضافة الي ذلك، برهنت النتائج أيضا ان طلاب الفرقة الرابعة يتمتعون بمستوى عال من الكفاءة الذاتية الامر الذي يرجح إمكانية استخدام وتطبيق أفضل الممارسات التعليمية في المستقبل. كما ان الدراسة قد خرجت بتوصيات من أهمها أن تقوم الجامعات بتحفيز وحث الأساتذة على استخدام تقنية المعلومات وعلوم الاتصال في العملية التعليمية وذلك من خلال رعاية الدورات التدريبية المتخصصة والسمنارات والورش. أوصت الدراسة أيضا بان تقوم الجامعات والكليات بتوفير مناخ تعليمي فعال وجاذب ومحفز يمكن الطلاب من استخدام تقنية المعلومات وعلوم الاتصال للأغراض التعليمية. وتضمنت الرسالة أيضا بعض المقترحات للدراسات ذات الصلة في المستقبل.

Table of Contents

Content	Page
Dedication	**i**
Acknowledgments	**ii**
Abstract (English)	**iii**
Abstract (Arabic)	**iv**
Table of Contents	**v**
List of Figures	**xi**
List of Tables	**xii**
Abbreviations	**xiii**
CHAPTER ONE: Introduction	
1.0 Background	**1**
1.1 Statement of the Problem	**3**
1.2 Research Questions	**3**
1.3 Research Hypotheses	**4**
1.4 Objectives of the Study	**4**
1.5 Limits of the Study	**5**
1.6 Significance of the Study	**6**
1.7 Methodology	**7**
1.8 Definition of Key Terms	**7**
CHAPTER TWO: Theoretical Framework and Literature Review	
2.0 Introduction	**8**
2.1 English Language teaching and Linguistics	**8**
2.1.1 History of language teaching	**8**
2.1.2 The Nature of Approaches and Methods in Language Teaching	**9**
2.1.3 The Twentieth Century Approaches to Language Teaching	**11**

2.1.3.1 The Grammar-Translation Approach	**11**
2.1.3.2 The Direct Approach	**12**
2.1.3.3 The Audio-lingual Approach	**12**
2.1.3.4 The Cognitive Code Learning Approach	**12**
2.1.4 Trends in Second Language Teaching	**13**
2.2 Second Language Teacher Education	**14**
2.2.1Approaches to Teaching and Teacher Education	**15**
2.2.1.1 The Micro Approach	**15**
2.2.1.2 The Macro Approach	**16**
2.2.2 Applications for Teacher Preparation	**17**
2.2.3 Teacher Preparation Procedures	**18**
2.2.4 Action Research in the Language Classroom	**18**
2.3 Fostering ICT on teaching and learning	**19**
2.3.1 Effect of ICT on Learning	**20**
2.3.2 Effect of ICT on the Learners	**20**
2.3.2.1 Engage students by Motivation and Challenge	**20**
2.3.2.2 Provide Tools to Increase Student Productivity	**20**
2.3.2.3 Increasing Learner Independence	**21**
2.3.2.4 Collaborative and Cooperative Learning	**21**
2.3.3 Effect of ICT on Teaching	**21**
2.3.3.1 Specific Technologies and Applications	**21**
2.3.3.2 Teacher-Student Relationships	**22**
2.3.3.3 General use of ICT	**22**
2.3.4 Effect of ICT on Teachers	**23**
2.3.5 Integration of ICT-Pedagogy in Teacher Training	**24**
2.3.6 Teacher s' ICT Training Approaches	**25**
2.3.6.1 ICT use as Main Content Focus of Teacher Training	**26**
2.3.6.2 ICT use as Part of Teaching Methods	**28**

2.3.6.3 ICT as Core Technology for Delivering Teacher Training	**30**
2.3.6.4 ICT use to Facilitate Professional Development	**32**
2.3.7 ICT Adoption Possibilities and Challenges	**34**
2.3.8 Creating Teachers for Tomorrow	**37**
2.3.9 The Concept of Self	**38**
2.3.10 Skills for the Twenty First Century	**38**
2.3.11 The Concept of Belief	**38**
2.4 The Social Cognitive Theory and the Self-Efficacy Beliefs	**39**
2.4.1 Social Cognitive Theory	**39**
2.4.2 Self-Efficacy Beliefs	**41**
2.4.3 Defining and measuring Self-efficacy Beliefs	**42**
2.4.4 Sources and Characteristics of Self-efficacy	**43**
2.4.4.1 Enactive Mastery Experience	**43**
2.4.4.2 Vicarious Experiences (comparisons)	**44**
2.4.4.3 Verbal Persuasions	**45**
2.4.4.4 Physiological and Affective States	**46**
2.4.5 Role of Self-efficacy in Human Functioning	**47**
2.4.6 Influence of SEB in Human Attainment	**47**
2.4.7 Impact of PSE in Cognitive Development	**48**
2.4.7.1 Cognitive Processes	**48**
2.4.7.2 Motivational Processes	**49**
2.4.7.3 Affective Processes	**49**
2.4.7.4 Selection Processes	**49**
2.4.8 Foundations and Theoretical Nature of Teacher's Efficacy	**50**
2.4.9 The Importance of Teacher's Self-efficacy	**51**
2.4.10 Teacher's Sense of Efficacy Scales	**53**
2.4.11 A first attempt at measurement: Rotter's locus of control	**53**
2.4.11.1 The Rand measure	**53**

2.4.11.2 Responsibility for Student Achievement	**55**
2.4.11.3 Teacher Locus of Control	**56**
2.4.12 A second Conceptual Strand: Bandura's Social Cognitive Theory	**56**
2.4.12.1 The Ashton Vignettes	**57**
2.4.12.2 Gibson and Dembo's teacher efficacy scale (TES)	**58**
2.4.12.3 Bandura's Teacher Self-efficacy Scale	**59**
2.4.13 Challenges in the Measure of Teacher Efficacy	**61**
2.4.14 Development of a New Measure of Teacher Efficacy	**62**
2.4.15 Self-efficacy Instrument Development	**64**
2.4.16 Implications and directions for Future Self-efficacy Research	**65**
2.4.17 Areas of Inquiry in the advancement of teacher efficacy	**67**
2.4.17.1 Efficacy Building Information	**67**
2.4.17.2 Collective Teacher Efficacy	**68**
2.4.18 Impact of Teacher Efficacy Change	**69**
2.5 Previous Studies	**71**
2.6 Summary	**87**
CHAPTER THREE: Research Methodology	
3.0 Introduction	**88**
3.1 Data Collection Methodology	**88**
3.2 Instrument Design and Development	**89**
3.2.1 The Questionnaire	**89**
3.2.2 The Follow up Interview	**93**
3.3 Validity and Reliability	**94**
3.4 Participants of the Study	**95**
3.4.1 Questionnaire Respondents	**95**
3.4.2 Interview Respondents	**96**
3.5 Data Collection Procedure	**96**

3.5.1 Pilot Study	**96**
3.5.2 Administration of the Questionnaire	**97**
3.5.3 Administration of the Interview	**97**
3.6 Summary	**97**
CHAPTER FOUR: Data Analysis and Discussion	
4.0 Introduction	**99**
4.1 Data Analysis and Discussion	**99**
4.1.1 The In-service Teachers' Follow up Interview	**99**
4.1.2 The Pre-service Teachers' Questionnaire	**99**
4.2 Computer Access, Experience and Qualifications	**101**
4.3 Frequency and Level of Computer and Hardware Products Use	**102**
4.4 Frequency and Level of Software and Communication Services Use	**106**
4.5 ICT Self-efficacy Measurement	**110**
4.6 Analysis of Teachers' Sense of Efficacy Scale	**116**
4.7 Discussion of Interview Results	**121**
4.8 Questionnaire Results by Hypotheses	**122**
4.9 Summary	**130**
CHAPTER FIVE: Conclusion and Recommendations	
5.1 Conclusions	**131**
5.2 Findings	**131**
5.3 Recommendations	**132**
5.4 Suggestions for Further Studies	**133**
References	**134**
List of Appendices	
Appendix (A) Cover Letter	**143**
Appendix (B) Pre-service Teachers' Questionnaire	**144**
Appendix (C) In-service Teachers' Interview	**150**

List of Figures

Titles	Page
Figure (2:1) Categories for ICT in Teacher Training	**26**
Figure (2:2) ICT Use as Main Content Focus of Teacher Training	**27**
Diagram (2:3) Principal Sources of Self-efficacy Beliefs	**47**
Diagram (2:4) Simplified Model for Collective Teacher Efficacy	**69**
Chart (4.1) Computer Access, Experience and Qualification	**101**
Multi bar (4.2) Frequency of Computer and Hardware Products Use	**103**
Multi-bar (4.3) Level of Computer and Hardware Products Use	**105**
Multi bar (4.4) Frequency of Software and Communication Services Use	**107**
Multi bar chart (4.5) Level of Software and Communication Services Use	**109**
Pie chart (4.6) ICT Self-efficacy Measurement: Statement (1)	**110**
Pie chart (4.7) ICT Self-efficacy Measurement: Statement (2)	**111**
Pie chart (4.8) ICT Self-efficacy Measurement : Statement (3)	**112**
Pie chart (4.9) ICT Self-efficacy Measurement: Statement (4)	**113**
Pie chart (4.10) ICT Self-efficacy Measurement: Statement (5)	**114**
Pie chart (4.11) ICT Self-efficacy Measurement : Statement (6)	**115**
Pie chart (4.12) ICT Self-efficacy Measurement: Statement (7)	**116**
Pie chart (4.13) Teachers' Sense of Efficacy Scale: Statement (1)	**117**
Pie chart (4.14) Teachers' Sense of Efficacy Scale: Statement (2)	**118**
Pie chart (4.15) Teachers' Sense of Efficacy Scale: Statement (3)	**120**

List of Tables

Tables	Page
Table (2:1) Deductive and Inductive learning methods	**13**
Table (2:2) Responsibility for student achievement	**55**
Table (2:3) Teacher Locus of Control	**56**
Table (2:4) Ashton Vignettes	**58**
Table (2:5) Teacher Efficacy Scale	**59**
Table (2:6) Bandura's Teacher Self-efficacy Scale	**60**
Table (4.1) Computer Access, Experience and Qualifications	**101**
Table (4.2) Frequency of Computer and Hardware Products Use	**102**
Table (4.3) Level of Computer and Hardware Products Use	**104**
Table (4.4) Frequency of Software and Communication Services Use	**106**
Table (4.5) Level of Software and Communication Services Use	**108**
Table (4.6) ICT Self-efficacy Measurement	**110**
Table (4.7) ICT Self-efficacy Measurement	**111**
Table (4.8) ICT Self-efficacy Measurement	**112**
Table (4.9) ICT Self-efficacy Measurement	**113**
Table (4.10) ICT Self-efficacy Measurement	**114**
Table (4.11) ICT Self-efficacy Measurement	**115**
Table (4.12) ICT Self-efficacy Measurement	**116**
Table (4.13) Teachers' Sense of Efficacy Scale	**117**
Table (4.14) Teachers' Sense of Efficacy Scale	**118**
Table (4.15) Teachers' Sense of Efficacy Scale	**119**
Table (4.16) Frequency of Computer and Hardware Products use	**124**
Table (4.17) Level of Computer and Hardware Products use	**125**
Table (4.18) Frequency of Software and Communication Services Use	**126**
Table (4.19) Level of Software and Communication Services Use	**126**

Abbreviations

VHS: Virtual High School
ICT: Information and Communication Technologies
NIE: National Institute of Education
TLC: Teachers Learning Conference
NIM: Netcourse Instructional Methodologies
SEB: Self-Efficacy Beliefs
GTE: General Teaching Efficacy
PTE: Personal Teaching Efficacy
RSA: Responsibility for Student Achievement
TE: Teacher Efficacy
TLC: Teacher Locus of Control
TES: Teacher Efficacy Scale
OSTES: Ohio State Teacher Efficacy Scale
PU: Perceived usefulness
CALL: Computer Assisted Language Learning
SPSS: Statistical Package for Social Science
IWB: Interactive White Board
WBI: Web- Based Instruction