

**EFFECTS OF COMPUTER-ASSISTED LANGUAGE LEARNING ON SECONDARY
SCHOOL STUDENTS' ACHIEVEMENT, MOTIVATION AND GENDER IN
ENGLISH PRONUNCIATION IN GUCHA SUB-COUNTY, KENYA**

ISAAC O. NYAKIRARIO

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DECLARATION AND RECOMMENDATION

Declaration

This is my original work and has not been submitted for the award of a degree in any other university. All sources have been acknowledged.

Signed:

Date:

Isaac Orina Nyakirario.

EM 13/2999/11

Recommendation

This thesis has been submitted for examination with our approval as the University Supervisors.

Signed:

Date:

Prof. M. Ndirangu

Department of Curriculum, Instruction and Educational Management,

Egerton University, Njoro

Signed:

Date:

Prof. Y. J. K. Mutiti

Department of Literature, Language and Linguistics,

Egerton University, Njoro

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ABSTRACT

Learning correct pronunciation of words is essential for effective communication in any language. However, this has been a big challenge to most learners of English as a Second Language. Perhaps it is the teaching methods used by instructors or the phonological difference between English and other L₁ languages that is responsible for this problem. This study investigated the effects of Computer-Assisted Language Learning (CALL) on secondary school learners' achievement, motivation and gender to learn English pronunciation. The study adopted a Quasi Experimental Research Design involving Solomon Four Non-Equivalent Group Design. In this design, two Experimental groups (E₁, E₂) and two control groups (C₁, C₂) were used. The target population were secondary school students and the accessible population were form two secondary school students in Gucha Sub-county, Kenya who were 1500. Gucha was chosen because of availability of learners whose L₁ lacked some consonant sounds which are present in English, thus becoming the source of pronunciation difficulties. The sample comprised of 160 students, who were selected using purposive sampling technique. The English Pronunciation Achievement Test (EPAT) and the English Students' Motivation Questionnaire (ESMQ) were used to obtain data. These instruments were validated using expert judgment and pilot-testing. Reliability coefficient of the ESMQ was estimated using Cronbach's coefficient alpha and the EPAT was estimated using the Kuder Richard 21 methods. EPAT and ESMQ yielded a reliability coefficient of 0.76 and 0.73 respectively as they were deemed to be reliable because they were above the accepted level of 0.7. The hypotheses of the study were tested using inferential statistics (T-test, ANOVA and ANACOVA) with the help of SPSS programme and were accepted at (alpha) $\alpha = 0.05$ level of significance. The findings of the study indicated that learners exposed to CALL outperformed those exposed to traditional methods in EPAT. CALL also engendered higher performance for girls in EPAT showing that CALL is better than the traditional methods which sometimes favour the boys. However, the difference was not significant at 0.05 level of significance. Similarly, gender did not negatively affect learners' motivation to learn English Pronunciation. However, learners who received computer based instructions were motivated more to learn English pronunciation than those exposed to traditional (teacher-based) methods. The study concluded that CALL led to improved performance in both achievement and motivation and did not bring about gender difference. The findings of the study would be of interest to policy makers, teachers of English, teacher educators and Kenya Institute of Curriculum Development (KICD) in providing information on ways in which English language pronunciation would be improved among our community in Kenya.

TABLE OF CONTENTS

DECLARATION AND RECOMMENDATION	ii
COPYRIGHT	iii
ACKNOWLEDGMENT	iv
ABSTRACT.....	v
TABLE OF CONTENTS	vi
LIST OF TABLES	ix
LIST OF FIGURES	xi
LIST OF ABBREVIATIONS AND ACRONYMS	xii
CHAPTER ONE	1
INTRODUCTION.....	1
1.1 Background Information.....	1
1.2 Statement of the Problem	4
1.3 Purpose of the Study.....	5
1.4 Objectives of the Study.....	5
1.5 Hypotheses of the Study	5
1.6 Significance of the Study.....	6
1.7 Scope of the Study	6
1.8 Assumption of the Study	7
1.9 Limitations of the Study	7
1.10 Operationalised Definition of Terms	8
CHAPTER TWO	10
LITERATURE REVIEW.....	10
2.1 Introduction	10
2.2 Learning of English Language	10
2.3 English Language Pronunciation.....	11
2.4 The Role of First Language on Second Language Acquisition.....	13

2.5 Phonological Differences between Ekegusii and English Language	13
2.6 Pronunciation Teaching	14
2.7 An Overview of the Computer Assisted Language Learning and Pronunciation	16
2.8 Introduction of Computers in Kenyan Schools	17
2.9 CALL and Level of Student’s Motivation in Learning Pronunciation.....	22
2.9.1 CALL and Gender Performance in Pronunciation Skills	23
2.9.2 Theoretical Framework.....	24
2.9.3 Conceptual Framework of the Study: Relationship between Variables	26
CHAPTER THREE	28
RESEARCH METHODOLOGY	28
3.1 Introduction	28
3.2 Research Design	28
3.3 Location of the Study	29
3.4 Study Population.....	29
3.5 Sampling Procedures and Sample Size	29
3.6 Instrumentation	30
3.6.1 Validity of the Research Instruments	32
3.6.2 Reliability of the Research Instruments.....	32
3.7 The Development and Use of Computer-Assisted Language Learning Instructional Material.....	31
3.8 Data Collection Procedures	32
3.9 Data Analysis.....	33
CHAPTER FOUR.....	34
RESULTS AND DISCUSSION.....	34
4.1 Introduction	34
4.2 Pre-test Analysis	34
4.3 Comparison of Students’ Post-test Mean Scores on EPAT by Learning Method.....	35

4.4 Comparison of Students Mean Gain on EPAT by Learning Method.....	39
4.5 CALL and Students' Motivation to Learn Pronunciation in English Language	42
4.6 Gain Analysis on ESMQ	46
4.7 Gender Differences in Achievement in English Language Pronunciation when	48
4.8 Difference in Motivation to Learn Pronunciation in English Language between Boys and Girls Taught Using CALL	50
CHAPTER FIVE	52
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.....	52
5.1 Introduction	52
5.2 Summary of Major Findings.....	52
5.3 Recommendations	55
5.4 Suggestions for Further Studies.....	56
REFERENCES.....	57
APPENDIX 1.....	67
INFORMED CONSENT	67
APPENDIX 2.....	68
TEACHERS' GUIDE TO PLANNING AND IMPLEMENTING COMPUTER-ASSISTED LANGUAGE LEARNING PROGRAMME	68
APPENDIX 3.....	70
ENGLISH PRONUNCIATION ACHIEVEMENT TEST (EPAT).....	70
APPENDIX 4.....	71
STUDENT MOTIVATION QUESTIONNAIRE (ESMQ)	71
APPENDIX 5.....	73
A MAP OF KENYA SHOWING THE EXACT LOCATION OF STUDY	73

LIST OF TABLES

Table 1: Solomon Four Non-Equivalent Control Group Design	28
Table 2: Description of the Sample Population	30
Table 3: Comparison of the Students' Pre-test Mean Scores on EPAT and ESMQ between E1 and C1	34
Table 4: Comparison by Gender of the Students' Pre-test Mean Scores on EPAT and ESMQ	35
Table 5: EPAT Post-test Mean Scores and their Standard Deviations	36
Table 6: Comparison of EPAT Post-test mean scores by learning method	36
Table 7: Multiple Comparisons of EPAT Post-test Mean cores by Learning Method	37
Table 8: Adjusted EPAT Post-test mean scores with KCPE as the covariate	37
Table 9: ANCOVA Test on EPAT Post-test mean scores by Learning Method	38
Table 10: ANCOVA Post-Hoc	38
Table 11: Students' EPAT Pre-test and Post-test Mean Scores, Standard Deviations and Mean Gains by Learning Approach	39
Table 12: Differences in Mean Gain on EPAT between E1 and C1	40
Table 13: ESMQ Post-test Mean Scores and their Standard Deviations	43
Table 14: Comparison of ESMQ Post-test means scores by learning method	43
Table 15: The ANOVA Post-Hoc on ESMQ Post-test	44
Table 16: Adjusted ESMQ Post-test mean scores with KCPE as the covariate	44
Table 17: Comparison of ESMQ post-test mean scores by learning method using ANCOVA	45
Table 18: ANCOVA Post-Hoc Test	45
Table 19: Students' ESMQ Pre-test and Post-test Mean Scores, Standard Deviations and Mean Gains by Learning Approach	46
Table 20: Differences in Mean Gain on ESMQ between E1 and C1	47
Table 21: Differences by gender in EPAT Post-test mean scores of students exposed to CALL	48

Table 22: Adjusted EPAT Post-test mean scores with KCPE as the covariate	49
Table 23: Comparison by gender of EPAT post-test mean scores of students exposed to CALL using ANCOVA	49
Table 24: Differences by gender in ESMQ Post-test Mean Scores of Students Exposed to CALL	50
Table 25: Adjusted ESMQ Post-test mean scores with KCPE as the covariate	50
Table 26: Comparison by gender of ESMQ post-test mean scores of students exposed to CALL using ANCOVA	51

LIST OF FIGURES

Figure 1: Theoretical Framework: Comprehensible Input Theory	26
Figure 2: Conceptual Framework of the Study	26
Figure 3: A Map Showing the Location of Study	73

LIST OF ABBREVIATIONS AND ACRONYMS

CAI	Computer Assisted Instruction
CALL	Computer Assisted Language Learning
CBI	Computer Based Instruction
CAP	Computer Assisted Pronunciation
EPAT	English Pronunciation Achievement Test
ESL	English Second Language
ESMQ	English Students Motivation Questionnaire
ICT	Information and Communication Technology
KESSP	Kenya Education Sector Support Programme
KICD	Kenya Institute of Curriculum Development
KIE	Kenya Institute of Education (now, KICD)
L₁	First Language
L₂	Second Language
LAD	Language Acquisition Device
MOE	Ministry of Education
NACOSTI	National Commission for Science Technology and Innovation
NS	Native Speakers
SLA	Second Language Acquisition
TI	Traditional Instruction
TM	Traditional Method

CHAPTER ONE

INTRODUCTION

1.1 Background Information

While English is perhaps the defacto language for international business, its place in the political, economic and social life of Kenya is even more important given the fact that Kenya was a former British colony and that English is one of the official languages of the country. In Kenya, the importance of English has sparked a growing interest in the teaching of English as a Foreign Language (EFL). This growing interest implies that initiatives have to be launched in all aspects of the educational system, including the curriculum. Kiswahili has been Kenya's national language since 1963. This has given it more prominence over the English Language which mainly served as an official language and language of instruction in schools. The promotion of the Kiswahili language has thus given it a competitive edge over the English language. Due to the pervasiveness of Kiswahili and other indigenous languages, proficiency in English language has been severely curtailed, most obvious is the pronunciation of English words that has significantly received strong interference from existing Kenyan language sounds systems. Nyasani, (2012), Mwaniki, (2013), Bishop (1995,) have observed that for Kenyan learners of English as a second language (ESL), pronunciation has remained unsatisfactory. Against this findings, it becomes necessary to examine how Kenyan ESL could be aided to closely approximate the Received English Pronunciation.

Greenwood (2002), avers that because of the tendency toward monolingualism in English speaking countries, English speakers are judgmental and less tolerant of those with accented speech. Accented speech involves phone substitutions or non-native prosodic patterns such as; phonology, syntax, lexical choices among others which might result in an unintelligible message. Therefore, it is important for second language learners of English to have intelligible and comprehensible pronunciation in order to communicate with different people successfully (Munro & Derwin, 1995). Pronunciation should be emphasized from the beginning stages of language learning and it should be included in other activities (Chela-Flores, 2001). First, for Kenyan learners of English, oral communication in English is perceived to be difficult because English is not their native language. Secondly, since English is a foreign language, learners are not readily exposed to fluent English on a daily basis or to English as a normal means of communication. Thirdly, the pronunciation of Kenyan teachers

of English, the model of pronunciation for the students, show less approximation to standard English pronunciation, consequently, the students receive the wrong input. (Nyasani, 2012; Mwaniki, 2013).

It is observed that speaking skill (pronunciation) is receiving more attention in English Second Language classrooms since it is recognized that students should primarily acquire it as a fundamental skill because it can affect accuracy and comprehension (Celce-Murcia, 2000, Derwing, 2006; Hahn, 2004). Khamkhien (2010) notes that without learning correct pronunciation, other aspects of English language like grammar, vocabulary become useless. It is against this background that this study investigated whether an intervention, such as CALL could lead to behaviour change in the pronunciation of English consonant sounds by Ekegusii speakers (A Bantu language spoken in Gucha-a sub county of Kisii county, south-western Kenya). Ekegusii English learners' language lack the following sounds: /p/, /d/, /v/, /z/, /h/, /dʒ/, /ʃ/, /ð/, /θ/ as in: van, judge, publish, shirt, that, this, dog, zeal, push and help. Learners of English from this community find it difficult to articulate these sounds. This is a common phenomenon in L₂ learners. If such persons have to communicate effectively, an intervention has to be put in place.

CALL (Computer-Assisted Language Learning) has been used as an intervention in certain contexts for pedagogical purposes. CALL, as the name suggests, is the use of computer technology to provide language instruction in the classroom. The format can vary from simple programme to a complex system that uses the latest technology. The Computer-Assisted Instruction programmes are taken to be electronic tutors capable of providing individualized learning, keeping accurate account of learner's interests, knowledge, attitudes and skills, suggesting a pedagogical rationale for introduction of computers into the school curriculum (Kiboss, 1997; kiboss,2004 ; Osodo, 2010). The incorporation of Computer as a resource in teaching pronunciation may be one way of bringing technology/intervention into language classroom teaching.

A study was carried out to investigate the effectiveness of the audio-stories (listening) on fostering students' pronunciation. A group of 40 students were randomly selected from Norvin Institute in Gorgan city, Golestan Province of Iran, 20 students were in the experimental group and 20 students in the control group. The study was conducted to test the effectiveness of utilizing audio-stories as a strategy to improve pronunciation. The students of the experimental group received training through listening to the audio-stories for eight

sessions while the students in the control group did not receive training. T-test was used to determine the mean in the pre-test and post-test pronunciation performance of element three level students. The obtained results showed that there was a statistically significant difference between the means in the overall pronunciation proficiency (Motalallebi & Pourgharib, 2013). The study findings established that using audio stories as a tool was effective in fostering the experimental group students' pronunciation in Iranian students. There were statistically significant differences between the mean scores of the experimental group on pronunciation pre-test and post-test in pronunciation proficiency test scores. Motalallebi and Pourgharib (2013) also investigated whether audio-stories enhance learners' motivation to learn pronunciation. The findings indicated that the learners' motivations was enhanced. This is because the stories provided a relaxed atmosphere for the learners. The output of learners was increased. It was concluded that the program designed based on audio stories (listening) seemed to be effective in improving students overall pronunciation proficiency (Bouacher, 2010).

Gender has also been seen to be a critical factor in achievement and motivation during a pedagogical experience especially in traditional methods of instructions. Solveig and Simon (1995) conducted a study on Computer-Assisted Foreign language learning focusing on the effects of context and gender on listening comprehension and motivation. The result indicated that an interaction between context and gender regarding achievement was significant: Girls, but not boys, made fewer errors after a story-embedded lesson. Similarly, Moochi (2012) and Jones (1989) in their studies, though not computer-based studies, indicated that girls demonstrated a higher achievement in language related skills than boys. They also found out that girls tend to be more fluent and more capable verbally than boys. Equally, there was need to establish whether the intervention in this research would produce gender differences.

There has not been much research on Second Language (L₂) pronunciation among Kenyans. In most cases, pronunciation teaching is usually determined by teacher's intuition. The teacher decides which aspects of pronunciation need more emphasis (Kolokdaragh, 2009). It has been noted that, until recently, pronunciation teaching has been treated as a luxury 'add-on' which is often perceived by teachers and students to be boring and unproductive (Seidlhofer, 2000).

Teaching is concerned with the transmission of knowledge. The most common methods for the transmission of knowledge include; lecture method, question and answer method, discussions, look and say for pronunciation lessons, use of textbooks, use of dictionaries and recently Computer Assisted Language Learning (CALL) method. Teachers are sometimes unable to decide which method of instruction would give the highest outcome in the language classroom. This phenomena calls for scholars to conduct studies especially those embracing modern innovations in order to investigate which mode of instruction could enhance learning in schools. Hence the use of CALL was intended to investigate whether learners could be aided to learn English pronunciation faster using computer programs (Lee, 2008).

Information and Communication Technologies (ICTs) transform the teaching and learning process from a dull teacher-dominated activity to an exciting learner-centred process which nurtures confidence, initiative and mental skills (Osodo, Chisikwa & Ongati, 2010). Thus, the use of CALL (Computer- Assisted Language Learning) is an ideal way of reforming the traditional curriculum process and pedagogy. In Kenya, Mwangi (2000), in his study notes that the resources used in the teaching of oral communication and their communicativeness is scanty, yet the teaching of any skill requires special and adequate human and material resources to achieve the laid down objectives. For example, the instructional resources, ranging from language laboratories, video tapes, video-cassettes, to availability of text books are vital in the teaching of oral communication (Nkosana, 1998). Hence, the incorporation of Computer as a resource in teaching pronunciation may be one way of bringing technology into language classroom teaching. CALL may therefore be used in L₂ context to give learners the correct pronunciation by the native speakers of English as observed from recent studies.

1.2 Statement of the Problem

English is an international language which is used in almost every domain of communication. Correct pronunciation of words enhances communication and as result, all learners should be able to pronounce English words correctly. Without learning correct pronunciation of words, other language aspects such as grammar, vocabulary and meaning become distorted during the communication process resulting in ineffective discourse. Students and teachers in English second language environments become challenged because of the effect of L₁ and lack of exposure to authentic English language pronunciation input. Some recent researchers have advocated the use of CALL to teach English language pronunciation over traditional methods such as text books and drilling. The use of CALL is where correct format of

pronunciation by native speakers of English have been captured in audio format and learners can learn through self-instruction. No study has been carried out in Gucha sub-county to investigate the effects of CALL in English language achievement, motivation and gender as far as pronunciation is concerned. This study was intended to fill that gap.

1.3 Purpose of the Study

The purpose of this study was to determine the effects of Computer-Assisted Language Learning programme on learners' Achievement and Motivation in English Pronunciation by secondary school students and to ascertain if gender would have any effects on Achievement and Motivation after CALL instruction.

1.4 Objectives of the Study

This study was guided by the following four objectives:

- i. To determine the difference in achievement in English language pronunciation between secondary school students in Gucha Sub-County taught using CALL and those taught using traditional methods.
- ii. To find out the difference in students' motivation in learning pronunciation in English language between secondary school students in Gucha Sub-county taught using CALL and those taught using traditional methods.
- iii. To determine difference in achievement in English language pronunciation between secondary school boys and girls in Gucha Sub-county when they are taught using CALL.
- iv. To determine difference in motivation to learn pronunciation in English language between secondary school boys and girls in Gucha Sub-county when they are taught using CALL.

1.5 Hypotheses of the Study

This study presumed that:

H₀₁: There is no statistically significant difference in achievement in English language pronunciation between secondary school students in Gucha Sub-County taught using CALL and those taught using the traditional methods.

H02: There is no statistically significant difference in students' motivation in learning pronunciation in English language between students taught using CALL and those taught using traditional methods.

H03: There is no statistically significant gender difference in achievement in English language pronunciation when learners are taught using CALL.

H04: There is no statistically significant gender difference in motivation to learn pronunciation in English language when learners are taught using CALL.

1.6 Significance of the Study

The findings of this study shall encourage the teachers to use Computer-Assisted Language learning programmes to teach English pronunciation. The study is particularly relevant to curriculum developers (KICD) and subject specialists who may use the findings of this research to recommend and avail materials such as computers, pronunciation programmes in the teaching of English language to non-native speakers of English in the language classroom. The use of computer instruction will improve students' learning and teachers to develop good learning resources that can help students understand difficult topics (Kiboss, Nassiuma & Tanui, 2004).

1.7 Scope of the Study

The English consonant sounds which were considered difficult to pronounce among learners of Gucha sub-county whose L₁ is Ekegusii were purposively sampled. The problematic consonant sounds identified during the literature review were: /p/, /d/, /v/, /z/, /h/, /dʒ/, /ʃ/, /ð/, /θ/. These sounds were considered difficult because they exist in English but are absent in Ekegusii language phonology resulting in interference. This brings about phonetic substitution, deletion, sounding of silent letters or wrong generalization on correct pronunciation. The study focused on communicative aspects, such as correct articulation of the sampled sounds.

1.8 Assumption of the Study

- a) The administrators and the respondents of the targeted schools would co-operate with the researcher in collecting and recording of relevant data. To achieve this, the Researcher sought permission from the school authorities and briefed them on the purpose of the study.

1.9 Limitations of the Study

- i. The existence of learners in the language classroom whose L₁ was not Ekegusii. To enhance the objectivity of the result, the researcher purposively sampled learners whose L₁ was Ekegusii.
- ii. Generalizability of the findings of this study was a challenge as it only applied to L₂ learners whose L₁ is Ekegusii. The researcher suggested that CALL be applied to learners whose L₁ is different from the one used in this study so as to estimate the efficacy of CALL as a method of instruction.
- iii. The scope of this study did not include other aspects of phonology such as stress, intonation (suprasegmental).

1.10 Operationalised Definition of Terms

The following terms are defined as they were used in the context of the study:

- Achievement:** Refers to a thing that somebody has done successfully but in this study, achievement referred to the scores obtained in English assessment of quality of sound produced by a learner as a sign of behaviour change in pronunciation.
- Computer-Assisted Language Learning (CALL):** Computer-Assisted Language Learning refers to a computer based instruction which involves language. This also included: CAI, CAP, CAL and CBI.
- Effect:** Refers to a change in something that is caused or produced by something else. In this study, effect meant an outcome on pronunciation or motivation resulting from use of CALL.
- English achievement :** The value attached to sound quality produced by a learner.
- Gender:** Refers to the fact of being male or female. In this study Gender referred to male or female learners.
- Language acquisition :** Means the process of getting something. In this study acquisition meant, the learner had learnt to use the target structures. That is, the learner had moved from state 'i' to 'i+1' of his/her pronunciation ability.
- Motivation :** Refers to the reason why somebody does something or behaves in a certain way. In this study, motivation referred to a way of thinking whereby one could respond positively or negatively to the study of CALL (Computer-Assisted Language Learning).
- Problematic Consonant Sounds:** Refers to something that is full of difficulties. In this study, it referred to Consonant sounds that are absent in Ekegusii phonetic alphabet and consequently poses a problem to the English speakers of Ekegusii background.

Pronunciation:	Refers to how words are pronounced. In this study pronunciation referred to the ability of L ₁ learners to overcome the problematic consonant sounds
Student assessment :	Assessment refers to when somebody decides the quality, value or importance of something. In this study, assessment referred to the process by which appropriate data was collected about English pronunciation.
Teaching methods:	Refers to a particular way of doing something. In this study, method referred to the use of CALL or teacher-based strategies to give instructions to learners on pronunciation.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In this chapter, various studies carried out on Computer-Assisted Language Learning and their role in learning/acquisition of correct pronunciation were reviewed. The teaching and evaluation of pronunciation in the classroom have also been discussed. The phonetic sound systems in Ekegusii and English have been discussed in this chapter. The effect of CALL on motivation of learners to learn the authentic English input/ pronunciation, the role of L₁ on L₂ Acquisition, Role of Gender in language skill performance, theoretical framework and conceptual framework of the study were reviewed in order to gain insight on what other scholars have done in relation to this study. These were discussed under the following sub-headings:

2.2. Learning of English Language

In today's world of globalization, the significance of English language cannot be overstressed (Sudheer & Rao, 2013). Geographically, English is the most wide-spread language in the world. Broughton (1993) argues that of the 4,000 – 5,000 living languages, English is by far the most widely spoken. Similarly, Webb and Kembo (2000), note that there are more than 30 countries which use English as their official language in Africa alone.

In Italy, about 75% of Italian pupils are learning English as a foreign language from the first year of primary education onwards (Eurydice, 2005). Teaching and learning English can help students deal successfully with their academic demands and perform successfully in their disciplines and professional contexts (Adams & Keen, 2000). Learning English in Kenya is compulsory for all school going children and it is the medium of instruction in schools (Orina & Wesonga, 2012; Barasa & Mutiti, 2013). Due to its place in Kenya, English is given more number of teaching hours on school time table compared to other subjects. This demonstrates how much English as a language is valued in Kenya.

2.3 English Language Pronunciation

English for Foreign Learners (EFL) gets input from their environment and the most influential environment for EFL learners are the schools (Yani, 2013). As a common practice, most ESL learners listen to and use English words, in class during the English lessons. More specifically, learners listen to the sounds of English from their English teachers' talks.

Perhaps when students lack proficiency in pronunciation, they may have copied their teacher, who may also have learned incorrectly as students (Yani, 2013). Although this is debatable, to some extent, this seems to be acceptable assumption. To test this presupposition, it is assumed that perhaps changing the source of information from humans to computer might yield better input, hence, the quest to explore CALL. CALL is a program/software containing authentic English input by the native speakers. Praats program, a software which allows learners to record their own utterances and compare them against those of the native speakers, was used in this study.

Perhaps another source of learners' incorrect pronunciation could be learners' wrong generalization on the correct pronunciation of words (Yani, 2013). Such wrong generalisation may owe to the influence of their first language, and when it persists without correction, fossilization of linguistic structures may result (Selinker, 1992). In addition and especially for foreign learners who rely on reading, there is the absence of a one-one correspondence between letters and pronunciation (Harmer, 2007). In this study, it is conceptualized that a similar situation is the case with the Ekegusii speakers who are learning English as a second language.

2.3.1 Teaching of Pronunciation in Kenyan Secondary Schools

The teaching of pronunciation in secondary school is done under the topic 'Listening and Speaking'. The specific objectives include acquiring ability to: pronounce words correctly, use a required range of vocabulary correctly, express oneself confidently and intelligibly in English, correct mistakes in English including those due to other language influences, and demonstrate acceptable communication habits (K.I.E, 1987). The course content that aids students to achieve these objectives include learning the sound system of the English language. Alongside this, emphasis is placed on teaching the correct English stress and intonations patterns in words and sentences but this study did not explore these suprasegmental features.

In Kenya, both teachers and learners are drawn from different ethnic groups speaking a variety of either related or non-related languages. Some of these languages do not have similar sounds to those found in English. As a result, a great deal of confusion occurs in the process of learning those English sounds that are absent from the learners' repertoire. For example, the Ekegusii Language does not have the following sounds: /p/, /d/, //, /v/, /z/, /h/, /dʒ/, /ʃ/, /ð/, /θ/ for example, /p/ is confused with /b/, /f/ with /v/ (Cammenge, 1990). Learning these sounds constitute a huge challenge to most L2 learners of Ekegusii origin. These few examples show how careful a teacher of English needs to be about their pronunciation before exposing them to the learners. Mich (2006) argues that it is particularly important for children to start off with correct examples of pronunciation to avoid those incorrect forms which become fossilized later on. CALL will therefore be a strategy which L2 learners may use to overcome the teacher-related weaknesses already mentioned.

2.3.2 Evaluation of Pronunciation among L2 Learners of English Language

The differences in English phonemes and the Ekegusii have been pointed out. For example, a problem might arise because the Ekegusii language lacks certain sounds, whereby /th/ becomes /t/; thus 'that' is pronounced as 'tat'. A teacher notes the English phonemes that a learner misses and the one he/she produces in error and this becomes an area to be corrected. During this process, the teacher reads one or more utterances and then checks to find out if the learners have distinguished the problematic sound or the contrasting meaning brought out by the two sounds, for example 'chop/shop'. The voice of the teacher, which provides the stimulus containing the problem to be corrected, can be presented live or directly by the teacher.

In the ordinary classroom situation, tests and quizzes on oral skills (often done in writing) are the most practical and satisfactory ways to present the stimulus. Other techniques include the use of dictation, reading which helps the teacher to test sound production, distinction of sounds, stress and intonation in words and sentences which are the other essential elements of pronunciation (KIE, 1987). This study used computer as an alternative strategy for teaching problematic English sounds among L2 English learners. This is because the CALL programme used contained recorded voices of the native speakers of English and using it, the learners and the teachers could easily identify their gross errors and mistakes in pronunciation and since the software can be replayed, it can easily reinforce the new English input.

2.4 The Role of First Language on Second Language Acquisition

First language (L₁) has a small but important role to play in communicating meaning and content (Selinker, 1992). The first language has a negative transfer as well as a positive one on the SLA (second language acquisition). Transfer is a general term describing the carryover of the previous performance or knowledge to the subsequent learning. Positive transfer occurs when a native form is used in the production of an L₂ (second language) utterance, and it is also a part of the L₂ norm. When this happens, the role of transfer is facilitative. Negative transfer occurs when the L₁ form is used in L₂ production and it is not a part of the L₂ norm, and the resultant utterance is erroneous. Negative transfer is inhibitive. The transfer can be at the levels of phonology, lexicology and syntax. The L₁ negative transfer also can be regarded as a kind of communicative strategy to solve the problems learners come across in communication. Krashen (1987) suggests that learners can use the L₁ to initiate utterances when they do not have sufficient knowledge of the target language for the purpose. In this sense, he considers L₁ negative transfer as a strategy of communication.

This phenomenon could explain why learners mispronounce some English words. Thus, the use of CALL may act as a strategy to aid acquisition of the correct knowledge of English pronunciation among L₂ learners of Ekegusii background whose phonetic system lacks some sounds which are present in English. .

2.5 Phonological Differences between Ekegusii and English Language

Phonology is the study of the patterned interaction of speech sounds. Different languages have different sets of possible sounds that can be used to create words. Al-Shuaibi (2009) focused on the phonology of phonotactics in his study. He found out that learners have difficulty in pronouncing English initial consonant clusters having three members and final consonant clusters of three and four members. He showed some processes involved in the pronunciation of these cluster, namely: reduction substitution and deletion. Muhiburrahman (2013) investigated the problems that Arab student of English encounter at the initial stages and showed four major areas of difficulty. First, they found that certain pairs of consonant sounds are confused by Arab learners. Second, learners insert a short vowel to break down the long consonant cluster. Third, certain diphthongs are replaced by other sounds due to L₁ interference. Last, Arab learners are generally confused with the distinction between pairs of vowels. Similarly, Cammenga (1990) and Moochi (2012) observed that Ekegusii first

language speakers find some English consonants difficult to produce and as a result, they invent their own communication strategies which might result in unintelligible words. This study therefore investigated whether CALL as a mode of instruction could assist learners in improving the production of the identified problematic English consonants sounds.

Mbaabu (1997) and Cammenge (1990), observe that there are phonemes which are absent in Ekegusii and Kiswahili but are present in English and that this aspect is partly responsible for the pronunciation problem affecting the Ekegusii speakers of English as second language. Ekegusii language does not have the following sounds: / p /, / d /, / v /, / θ /, / ð /, / z /, / h /, / j /, / dʒ /, / ʃ /. These sounds can only be found in Ekegusii speakers who can speak Kiswahili or English language proficiently. For instance, due to lack of the sound / h /, instead of saying hurt/hat/heart, the Ekegusii speaker would say urt, eart or at (Moochi, 2012).

Most phonemic interchange emanating from L₁ transfer will result into an error in L₂ thereby creating error in meaning and severe miscommunication. In summary, phonemic interchange results either in altering the contextual meaning of the word or deforming the English word hence affecting their pronunciation. Cammenga (1990) and Moochi, (2012) observed that the non-existence of this phonetic representation sometimes makes learners not only to misspell words but also to mispronounce them. Ekegusii language does not have voiceless bilabial stop instead voiced bilabial stop is used. For instance, /p/ and /b/ are interchanged for the same reason.

Selinker (1992) avers that one of the five principles that operate in the interlanguage theory is transfer of training. That a second language learner may acquire the second language as a result of instruction. This means that learner's inability to master the pronunciation of some English words may be occasioned by poor teaching of an item. The same has been echoed by Tomlinson and Ellis, (1990). Consequently, this study aimed to determine whether computer usage in language instruction could improve instruction and enhance the acquisition of 'correct' English pronunciation.

2.6 Pronunciation Teaching

Although the role of pronunciation is so significant in speaking, many teachers do not focus on this important part (Motallebi & Pourgharib, 2013). Morley (1991) stated that it is essential to teach English pronunciation in ESL/ EFL classroom, nevertheless, this important part of English language is ignored in many English classrooms and universities around the

world. Gilbert (2008) observes that teaching pronunciation include different challenges. Some teachers consider that they do not have enough time in their classes to focus on pronunciation while others argue that there is little relationship between teaching pronunciation in the classroom and achieving proficiency in pronunciation. This formed the basis of this study which investigated whether CALL improves proficiency in pronunciation.

Gilakjani (2012) avers that pronunciation can be one of the most difficult areas of language for EFL learners to master and one of the least favourite subjects for teachers to do in EFL classroom. Morley (1991) noted that intelligible pronunciation is an important section of communication competence. Consequently, teachers teach pronunciation in their classroom and expect students to do well in them. Without perfect pronunciation skills, the learners' ability to communicate is so limited.

Pronunciation instruction is an important element in foreign language teaching and foreign language teachers must pay attention to teaching pronunciation in class. However, most FL Teachers try to teach the necessary grammar, vocabulary, culture and four skills practice into their classes without noticing integrating pronunciation teaching as well is important (Hismanoglu, 2011).

Language teaching methods have a deep root in the history (Motabelli & Pourgharib, 2013). Therefore the debate on teaching pronunciation of Second Language is still continuing. The changes in language teaching methodology also affect pronunciation teaching methods. Some methods are direct, audio- lingual, and, drilling among others. The audio lingual method focuses on the traditional notions of pronunciation, minimal pairs, drill and short conversations (Murcia & Goodwin 1999). With the advent of communication approach, pronunciation has been considered within the frame of natural communication. This approach suggests that overall communication is the elementary use of language and therefore should be central to the style of instruction (Hismanoglu, 2006) Ahmad and Muhiburrahman (2013) conducted a study to find out the teachers' opinion regarding the errors Saudi EFL learners encountered when they pronounced English consonant sounds. The participants in the study were teachers who were currently teaching in the preparatory year programme, Najran University, Najran KSA. The results show that lack of programme, lack of proper attention towards teaching pronunciation and lack of motivation among EFL learners towards learning pronunciation leads them into such pronunciation errors. According to the data collected from

the teachers, the student generally encounter errors while pronouncing consonant sounds like /p/, /d/, /r/, /y/,/3/ and /J/. The current study investigated whether CALL as a strategy could improve proficiency in the pronunciation of consonant sounds and stir up learners' motivation to learn English pronunciation.

A study was carried out to investigate the effectiveness of the audio-stories (listening) on fostering students' pronunciation. A group of 40 students were randomly selected from Norvin Institute in Gorgan city, Golestan Province Iran, 20 students were in the experimental group and 20 students in the control group). The study was conducted to test the effectiveness of utilizing audio- stories as a strategy to improve pronunciation. The students of the experimental group received training through the listening to the audio-stories for eight sessions while the students in the control group did not receive training. Pronunciation test was the effectiveness of the programme in developing the experimental group students' pronunciation proficiency by listening to stories. T-test was used to determine the mean in the pre-test and post-test pronunciation performance of element three level students. The obtained results showed that there was a statistically significant difference between the means in the overall pronunciation proficiency (Motalallebi & Pourgharib, 2013).

The study findings established that using audio stories as a tool was effective in fostering the experimental group students' pronunciation in Iranian students. There were statistically significant differences between the mean scores of the experimental group on pronunciation pre-test and post-test in pronunciation proficiency test scores. Motalallebi and Pourgharib, (2013) also investigated whether audio-stories enhance learners' motivation to learn pronunciation. The findings indicated that the learners' motivations was enhanced. This is because the stories provided a relaxed atmosphere for the learners. The output of learners was increased. It was concluded that the program designed based on audio stories (listening) seemed to be effective in improving students overall pronunciation proficiency (Bouacher, 2010).

2.7 An Overview of the Computer Assisted Language Learning and Pronunciation

Modern technologies, in particular computers, are a familiar sight in classrooms in the twenty-first century in a wide variety of academic and non-academic contexts, as technology has been used to streamline many educational tasks (Ortega, 1997 & Sadeghi, 2013). Hutchby (2001) points out that integrating new technologies, such as computers, can enhance language learning proficiency by stirring up learners' motivation. He also argues that

learners' concentration for learning the course contents including pronunciation, reading comprehension and new exercises would be significantly increased.

CALL is an acronym for Computer Assisted Language Learning. The programme includes the use of CD-ROMS, DVDs. Levy (1997) defines CALL more broadly as the search for and study of applications of the computer in language teaching and learning. CALL is often perceived as an approach to language teaching and learning in which the computer is used as an aid to the presentation, reinforcement, and assessment of material to be learnt, including substantial interactive element. CALL's origin can be traced back to 1960s. Up until the late 1970s, CALL projects were confined mainly to universities, where computer programmes were developed on large main frame computers (Marty, 1981). Early CALL drew heavily on practices associated with programmed instruction. This was reflected in terms of Computer Assisted Instruction (CAI) which originated in USA and was in common use until early 1980s when CALL became a dominant term (Higgins & Johns, 1984). With CALL, colour can be used to highlight grammatical features, discrete error analysis and feedback are a common features of CALL. A more sophisticated CALL programme would attempt to analyse the learner's response, pinpoint errors and branch to help and give remedial activities. Therefore, there should be deliberate effort and strategies such as experiments in order to promote integration of the computer into instruction and curriculum in general (Salomon, 1991). Being part of the global community, Kenyan schools should not lag behind in this endeavour.

2.8 Introduction of Computers in Kenyan Schools

Beginning late 1980s, an increasing number of secondary schools in Kenya began to acquire computers for use in their institutions. Some computers installed in these schools came in the way of donations (Kavagi, 2001). As a complementary gesture, MOE through KIE, now KICD prepared a computer studies syllabus in 1996 to be used for the teaching of computer studies which was first examined in 1998. In order to tap into the benefits of ICT integration in improving educational delivery, the Ministry of Education developed a Kenya Education Sector Support Programme (Republic of Kenya, 2005) that featured ICT as one of the priority areas with the aim of mainstreaming ICT into the teaching and learning process. The National ICT Policy embedded this intent as a national priority and provided the impetus for the ministry to develop its sector policy on ICT in Education. In June 2006, the National ICT Strategy for Education and Training was introduced (National ICT Policy, 2006). Despite all

these efforts, most schools and teachers in Kenya lag behind in the implementation of this important innovation (Kiptalam & Rodrigues, 2010). Most governments in developing countries in Africa emphasize gradual introduction of computers into their pedagogy (Mwei, 2011). These efforts are based on the successes in the developed countries. The computer is becoming inevitable in the society and more especially in schools.

Computer-Assisted Language Learning (CALL) is a variant of Computer-Assisted Pronunciation (CAP). As the name suggests, it is the use of computer technology to provide instruction in the language classroom. The Computer-Assisted Instructional programs are taken to be electronic tutors capable of providing individualized learning, keeping accurate account of learners' interests, knowledge, attitudes and skills (Kiboss, 1997). This suggests a pedagogical rationale for introduction of computers into the school curriculum.

In addition, the increasing demand for international communication and collaboration makes attaining proficiency in a second or foreign language more prominent and this proficiency should cover not merely vocabulary and grammar, but good pronunciation as well (Lord, 2008). Salomon (1991) argues that educational technologies can be used to enrich a classroom environment, support problem-solving, discovery, critical thinking and collaboration. Being a means to facilitate classroom teaching and learning, computers have not been accorded equal attention in all schools and across all educational systems in Kenya; yet most governments in developing countries in Africa have emphasized gradual introduction of computers into pedagogy of school curriculum (Mwei, 2011).

Lee (2008) investigated how the characteristics of two computer Assisted Language Learning (CALL) programmes assisted Taiwanese students learning English pronunciation effectively and how teachers may effectively integrate such computer software into their teaching. The research sought to explore ways to develop and improve English pronunciation learning in Taiwan by using another tool in addition to teacher-directed learning. In all, one teacher and 153 college students across four classes took part in the research. The research methodology was action research, and it used open-ended questionnaires and participant observation for collecting data, as well as content analysis for the interpretation of the data. In addition, the students' wrote learning sheets which aimed to focus their learning. The results indicated that the students preferred the programme with explicit correction feedback and with repetition and other specific functions as well as the facility for self-paced and self-directed learning. When used alongside the traditional classroom teaching, CALL is a tool which has the

potential to address some of the issues English pronunciation teachers' face, such as low student motivation and low English pronunciation proficiency.

Nutta (2001) conducted a study on the effect of a CALL programme on students' writing ability in English by teaching the programme cooperatively and collectively. The findings of the study revealed that there were statistically significant differences between the experimental group, who studied via computer and the control group, who studied in the traditional method. The difference was in favour of the experimental group who studied via computer. In a similar way, Borg and Burn (2008) indicated that by using computers, students can discover grammar structure among the variety of practices with immediate feedback. They also noted that computers allow individuals to construct and develop their own knowledge.

Kilickaya, (2007) carried out a research to explore the effect of CALL on the undergraduate student achievement on the TOEFL exam.. The study was designed as quasi-experimental research. The participants in the study were 34 sophomore students in the Department of Foreign Language Education in Middle East Technical University. The experimental group was taught using Computer Assisted Instruction (CAI) in a language laboratory whilst the other class was taught using a traditional classroom setting. The training lasted for eight weeks and the same instructor met the groups three hours each week. During the first week, a pre-test was given to both groups. Then a post-test was given at the end of the study. The experimental group participants were also interviewed with regard to CALL. Statistically significant differences were found in the reading and listening sections. The results showed that there was no statistically significant difference between the control and the experimental group in overall scores and in the structure section. The interviews showed that the participants in the experimental group valued CALL. This result contradicts the current study which indicated that the achievement was in favour of the Experimental group. However, on motivation, the two studies agree that the learners valued CALL.

Hashemyolia and Ayub (2014) conducted a research to determine the effects of Rosetta stone's English Language Courseware (RSELC) on third grade students' performance in public secondary schools in Iran. More specifically, the study aimed to evaluate students' perception about the usefulness of language courseware. The study utilized a quasi-experimental method using only post-test design which consisted of two groups. Control group was taught using traditional instruction and experimental group was taught using

educational software, namely; RSELC. Both groups consisted of 31 secondary school students. The experimental group filled in the questionnaire to evaluate their perception about the usefulness of the RSELC in English grammar performance. Qualitative analyses revealed that there was significant difference between the groups on the overall performance in favour of experimental group. Based on obtained results, the study concluded that RSELC was an effective tool for teaching and learning English language at the third grade secondary school in Iran.

The effect of CALL on English language learning has been shown by a number of researchers in wide variety of academic settings. Fei-Hsuan (2010) conducted a study, on effect of CALL software on perceptual training of English vowels. The study found out that the application of CALL software enhanced English perceptual training. Kobayashi (2011) conducted a study involving CALL on Japanese first and second year university students. This case- study evaluated a blended learning EFL programme using CALL courseware in light of learners' computer literacy and perceptions of its usefulness. The analysis revealed that the students' perceptions of the programme differed according to the proficiency levels of the students. It also showed that the interface of the courseware affects students' attitudes towards learning so that the instructor's assistance is indispensable.

Dashtestani (2012) conducted a study involving the use of CALL instruction on Iranian EFL. It explored the attitudes of Iranian EFL teachers towards the use of CALL in EFL courses as well as their perceptions of possible barriers to the implementation of CALL. The participants were 212 EFL teachers. Questionnaires, semi-structured interviews, and non-participant observations were applied as the research instruments. At the end, it was found that the Iranian EFL teachers held positive attitudes towards the use of CALL. It also revealed that the participants perceived computers as beneficial tools to be included in EFL courses.

Lambacher (1999), and Kulik and Kulik (1991), studies on the use of Computer-Assisted Instruction versus the traditional methods of teaching, bore very contradicting results. For example, they observed that when methodology is kept consistent, there was no difference in results between Computer-Assisted Language instruction and the traditional teacher-led instruction. On the contrary, it has been noted that CALL leads to improved performance and that it is of interest to language teachers and learners as it provides individualized instruction and immediate feedback on the correctness of a learner's response to tasks (Hardson, 2004).

A review of studies conducted on the effects of computer-based instruction on attitudes concluded that; computer use mostly affects attitude towards school and subject matter and that it appears to have a positive impact on improving students' self-image and self-confidence and learning process (Khatoon & Mahmood, 2011 ; Kiboss,1997). The research showed that students exposed to Computer-based instructional programs develop positive attitudes towards mathematics (Mwei, 2011; Wanjala, 2005).

Anjili (2008) conducted a study in Rift Valley on Effects of Computer-aided Learning on Hearing-impaired Learners' achievement in standard three geometry and perception of their hearing environment showed that the experimental conditions positively influenced learning compared to learners who were not subjected to treatment. Thus, the implication of this study was that the use of CALL approach in teaching/learning process may as well lead to improved English pronunciation proficiency among L2 learners.

Another Kenyan researcher, Nyaema (2008) conducted a study on effects of computer supported cooperative learning (CSCL) on achievement and attitude in chemistry. The study involved 81 form one students from Nakuru North. Nyaema's results showed that learners who were taught through computer-supported learning resulted in lower achievement than those taught through the traditional method. She attributed this trend to lack of enough preparation time on the part of students taught through CSCL (Nyaema, 2008).

Orina and Wesonga (2012) conducted a study in Kisii District on Computer-Based Language Learning Materials and Learner autonomy. The results indicated that Computer-Based Language Materials have a potential of encouraging learner autonomy. It clearly shows that the benefits of computer use in teaching English are not theoretical but practical and fairly enriching to the learners and relieving the teacher of unnecessary work which the students can do on their own.

Murat (2011) on Internet-Based pronunciation teaching, used thirty students whose voices were recorded. The study attempted to find out whether English language pronunciation taught via Internet-based pronunciation materials made students better at articulating problematic English vowels than those taught via printed pronunciation materials by their teachers. The result indicated that /æ/, /ʊ/ and /ɛ/ were three most problematic English vowels for the Turkish EFL (English Foreign Learners) and those learners would solve their articulation problems with the vowels by being exposed to internet-based pronunciation. Hardson (2004) avers that computer technology can help second language learners to learn

prosodic patterns if the computer tasks focused learners' attention on how prosody works within a piece of discourse. As ESL (English as a Second Language) learners become more aware of how these prosodic features function, they can begin to predict where pauses should be stressed and whether intonation should rise and fall at the end of an utterance.

Reviews of other studies on the effects of computers on learner's achievement in pronunciation have also produced divergent opinions. A study conducted on Italian native speakers aged eleven on the effectiveness of Computer-Assisted pronunciation training system showed that children who trained with the computer program were able to make improvements in pronunciation quality that were comparable to those made by the children who received teacher-led instruction (Mich, 2006). However, students who used CALL programme took thirty (30) minutes per session while the teacher-led were taking sixty (60) minutes per session. According to this study, the use of CALL was argued to be convenient as it saved on time. This finding is in agreement with Mwei (2011) on Computer-Assisted instruction in mathematics. In their research, they found out that it took a shorter time to achieve the objectives though their study did not focus on pronunciation.

2.9 CALL and Level of Student's Motivation in Learning Pronunciation

Brophy (1987), avers that motivation to learn is a student's tendency to find academic activities meaningful and worthwhile and to try to derive the intended academic benefits from them. Dornyei (2007) claims that motivation theories in general attempt to explain three interrelated aspects of human behaviour: (i) The choice of a particular action, (ii) persistence with it, and (iii) effort expected on it. Emotions have been acknowledged as essential to learning and teaching in their conceptualization of what constitutes motivation to learn. Hutchby (2001) argues that integrating new technologies including computers can enhance language learning proficiency by stirring up learners' motivation and that learners' concentration for learning the course content is significantly increased.

This issue of motivation and learning is also addressed in Krashen's Affective Filter Theory (Krashen, 1982). Input is the primary causative variable in second language acquisition, affective variables acting to impede or facilitate the delivery of input to the language acquisition device. It argues that acquirers need to be open to the input and that when affective filter is up, the learner may understand what is seen and read, but the input will not reach the LAD (Language Acquisition Device). This occurs when the acquirer is unmotivated, lacking in confidence, or concerned with failure. The filter is down when the

acquirer is not anxious and is intent on becoming a member of the group speaking the target language. The affective filter is the principal source of individual differences in second language acquisition (Krashen, 1982). The introduction of computers in the language class will hopefully transform teaching and learning process from a dull teacher-dominated activity to an exciting learner-centred process which will nurture confidence, initiative and mental skills in the classroom (Osodo, 2010).

Motivation is crucial to students' academic success at any age, because students form self-concepts, values and beliefs about their abilities at a young age, thus the development of early academic motivation has significant implications for later academic careers (Muola, 2010). A great deal of research has shown that students' high academic motivation is more likely to have increased levels of academic achievement (Hancock, 2004). Academic motivation is not important in itself, but rather it is important because motivated students tend to engage in activities that help them to learn and achieve highly in academic settings (Jones, 2009). For example, a motivated student is likely to pay attention during class activities, take time to use effective learning and study strategies and seek help from others when needed (Schunk, Pintrich & Meece, 2008). Since motivation to learn is a competence acquired through experience but immediately encouraged through modelling, statement of expectation and instruction by significant others, then, what is taught and how it is taught exerts tremendous influence on students' motivation to learn (Wambugu & Changeiywo, 2008).

2.9.1 CALL and Gender Performance in Pronunciation Skills

The Special Role Theory is one of the gender role theories that are used to account for gender differences in academic tasks (Eagly, 1987). Claud and Quin (1999), used this theory, to establish how socialization influences gender differences in academic performance. Their study revealed that women performed significantly worse than their male counterparts on mathematics test when participants were led to believe that the test would probably produce gender differences. In contrast, the two genders' performance was at par when they were led to believe that the test would not produce gender differences. These findings indicate that stereotypes can impinge upon performance even when the stereotypes have not been internalized or incorporated. Eagly's Social Role Theory postulates that gender development is based on socialization. Serbin (1986) observes that teachers themselves are generally unaware of their own expectations and behaviours that effectively sustain and reinforce conformity to sex-role stereotypes, and which encourage the development of quite different

academic abilities and behaviours in their male and female students. Daisy (2010) correlated attitude with reading and reading with spelling in gender performance. The study revealed that female students generally performed better than their male counterparts and that their reading attitudes were consistent with their spelling scores. Studies done on speech fluency, spelling and pronunciation have demonstrated that girls develop speech at an earlier age than boys and have been found to be ahead of boys in fluency (Jones, 1989). Females tend to be fluent and more capable verbally than males of their equivalent social group. On spelling, it has been found that girls do better than boys. At times, good pronunciation is prerequisite to correct spelling. Sebranek, Meyer and Kemper (1989) aver that knowing the correct pronunciation of each word is important to remembering its spelling. However, it should be noted that not all words are written as they are pronounced (Mgullun, 1999; Munro & Cullen, 2005). For example, the word `debt` is pronounced as `det` and therefore no one-one relationship between spelling and pronunciation

The other dimension of the speaking skill that has been studied in relation to gender is pronunciation. Again, girls have a measure of superiority over their male counterparts (Jones, 1989). Jones argues that women tend to speak more correctly and strive harder for correct pronunciation than men. It follows then that correct pronunciation at times leads to correct spelling which is a product of hard work. Solveig and Simon (1995) in a computer-based study on effects of text, context, and gender on listening comprehension and motivation, found out that girls demonstrated higher achievement than did boys.

2.9.2 Theoretical Framework

The theoretical framework for this study will be based on: Comprehensible Input theory by Krashen (1982). The input hypothesis is one of the five hypotheses of Krashen's Monitor Model. It uses the variable 'i' to refer to the learner's current level of competence and i+1 to refer to the next level achieved by the learners. To move from stage 'i' to stage i+1, the learner should understand input that contains 'i+1'. In advancing the concept of comprehensible input, the author quotes research findings from both first language and second language acquisition. Clark and Clark (1977) on first language acquisition established that, native speakers modify their speech to first language acquirers in the following ways: Firstly, they use simpler forms of the language to make themselves understood by the child. Secondly, caretaker speech unlike adult- adult speech is roughly tuned to the child's current level of linguistic competence and not finely tuned. This implies that caretaker's speech is not

precisely adjusted to the level of each child as it is impossible to determine such a level with accuracy. Consequently, Krashen (1987) views the classroom as a major source of comprehensible input for second language learners. He reckons that interlocutors in the informal setting are not always ready to supply comprehensible input to the older second language learners.

Three important observations need to be made about this research in relation to Comprehensible input theory. First, the requirement that the teacher roughly tunes his language, pronunciation included, to the learners' linguistic level for the purpose of comprehensibility is plausible. For instance, on several occasions, the teachers who are conducting a lesson may be required to repeat or paraphrase some sentences to enable the learners to understand the meaning expressed or pronunciation when using the target words/language. Furthermore, allowing learners to be relaxed also might make most of them willing to participate in speaking using the target words. This occurs when computers are introduced in the language classroom and the learners given the freedom to use them at their own pace and as many times as they wish to.

A statement of great value for language pedagogy and which constitutes one of the main principles of the input hypothesis is that for successful classroom acquisition, learners require access to message oriented communication that they can understand. In this study, CALL was used to advance the input hypothesis. To supplement the input hypothesis is the Affective filter hypothesis by Krashen (1982). This is one of the many theories explaining how second language learning takes place. The Filter is that part of the internal processing system that subconsciously screens incoming linguistic input based on what psychologists call 'affect': the learner's motives, needs, attitudes and emotional states.

The introduction of computers in the language classroom transforms teaching and learning process from a dull teacher-dominated activity to an exciting learner-centred process which will nurture confidence, initiative and mental skills in the classrooms (Osodo et al, 2010). A motivated learner will be open to input as his/her affective filter will be 'down' hence allowing a lot of input to reach LAD which leads to acquired competence for learning to take place. This study sought to determine whether CALL impedes or fosters learning and motivation in English pronunciation learning among secondary school learners of Gucha sub-county. Below is figure 1 which summarizes the theory.

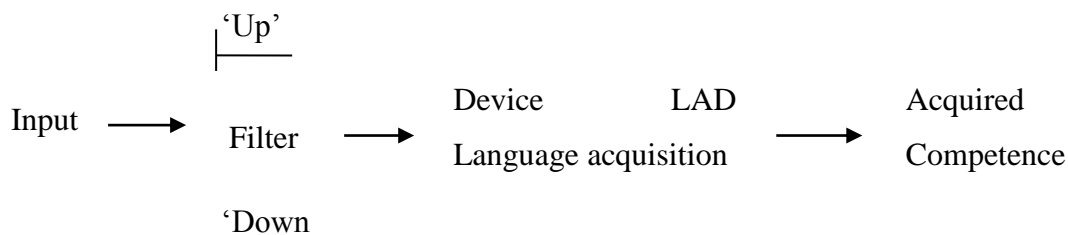


Figure 1: Theoretical Framework: Comprehensible Input Theory

2.9.3 Conceptual Framework of the Study: Relationship between Variables

Figure 2: The Conceptual Framework shows the relationship between independent and dependent variables as relates to the effects of Computer-Assisted Language Learning (CALL) on learners’ achievement and motivation in the learning of English pronunciation. A test was developed to measure students’ achievement and motivation in English pronunciation when Computer Assisted Language Learning instructions are given to the experimental group. English Pronunciation Achievement Test (EPAT) was used to measure achievement in pronunciation task, while English Students’ Motivation Questionnaire was used to measure students’ motivation when CALL is used to give instruction.

The variables of the study have been conceptualized as shown in Figure 2:

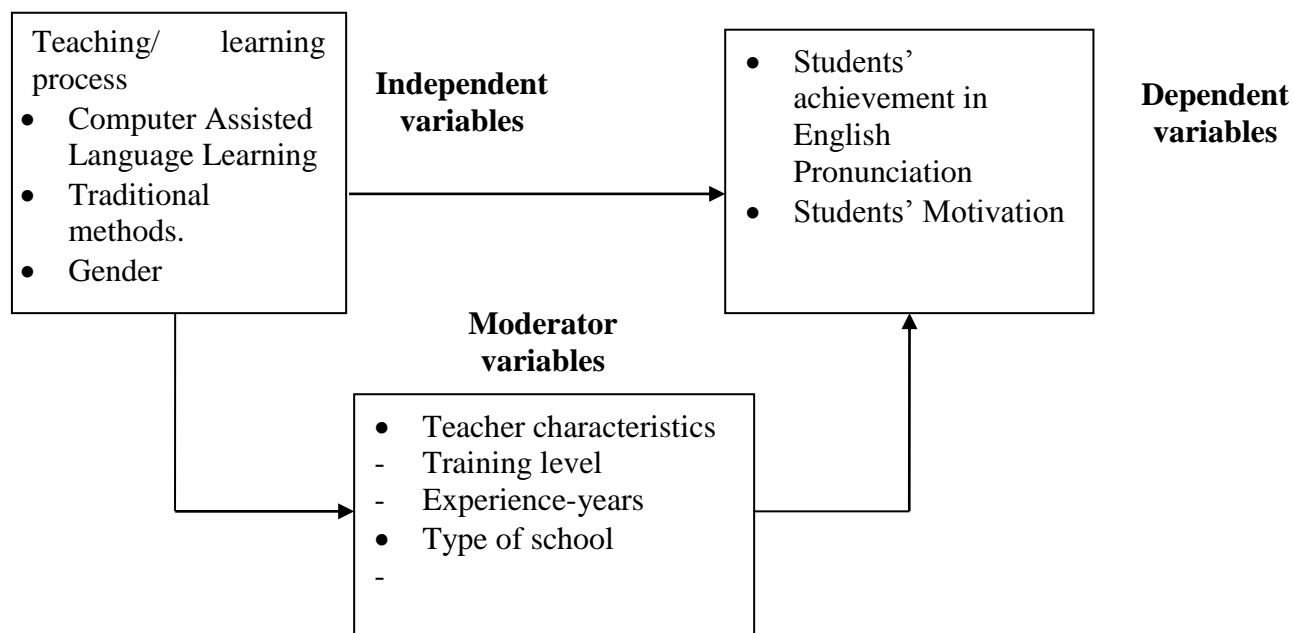


Figure 2: Conceptual Framework of the Study

The conceptual framework is represented diagrammatically in figure 2. It shows the relationship between variables of the study. Under normal conditions, the teaching strategy used would affect the learners' achievement and motivation to learn English pronunciation. However, learning experiences and outcome may also be influenced by other factors such as teacher's training and experience or age and gender of the learner as shown in Figure 2 above. These are the moderating variables which needed to be controlled. On age, the study only involved Form two students who were more or less within the same age bracket. On gender variable, in order to have both girls and boys, mixed schools were purposively used. To control the teacher variables, this study involved trained teachers of English with at least two years of teaching experience. Schools of similar set up in terms of facilities and teachers' experience were used in order to control the extraneous variables of teacher characteristics and the type of school. The instructional strategy (CALL) was then able to influence the learners' achievement in English pronunciation and the motivation.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section gives a description of the methods and procedures that were followed in conducting the research. It includes the research design, the study population and its characteristics, sampling procedures, sample size, the instruments used, validity and reliability of research instruments, data collection and finally data analysis.

3.2 Research Design

The study adopted the quasi-experimental Solomon four non-equivalent Group design. The design has two treatment and two control groups. The design was appropriate because Fraenkel and Wallen (2000) and Wachanga (2002) argue that secondary school classes exist as intact groups as school authorities do not normally allow the classes to be dismantled and reconstituted for research purposes. The selected classes were assigned to the experimental and control groups respectively (Mugenda & Mugenda, 2003; Borg & Gall, 1989; Mutai, 2000). The Solomon four non-equivalent group design is illustrated on Table 1.

Table 1: Solomon Four Non-Equivalent Control Group Design

Group	Pre-test	Treatment	Post-test
E ₁	O ₁	X	O ₂
E ₂	-	X	O ₃
C ₁	O ₄	-	O ₅
C ₂	-	-	O ₆

KEY:

(O) - indicates observations or outcomes

(X) - indicates treatment

(C)-indicates the control groups

(E)-indicates the Experimental groups

Table 1 shows four groups of participants, the Experimental Groups (E_1 & E_2) and the control groups (C_1 & C_2). Both Experimental groups received treatment (x), as the control groups was taught using conventional methods. Group E_1 and C_1 received pre-test (O_1 & O_4). O_2 , O_3 , O_5 and O_6 represented the post-test.

3.3 Location of the Study

This study was conducted in Gucha Sub-county of Kisii County (see Appendix 5). The sub-county has twenty-two secondary schools both public and private. Administratively, Gucha is divided into two divisions- Sengera and Ogembo. The choice of the location was informed by the availability of L_2 learners whose L_1 lacks some sounds which are present in English thus causing pronunciation difficulties.

3.4 Target Population

The target population was all secondary school students in Gucha sub-county. The accessible population were Form Two students who were 1500, from the existing 22 secondary schools. Form two was picked because at their level, they are supposed to have covered adequate content in pronunciation drills. Two schools were used as experimental group and the other two as control group. Gender and performance were also considered in this study when instruction was given through CALL or through the Traditional method. The small number of students was meant to increase the contact hour between the learner and the computer in the experimental group.

3.5 Sampling Procedures and Sample Size

Purposive sampling technique was used to select schools which participated in this study as availability of computers, connection to power grid and gender were factors to consider for the treatment group. The teachers to be use in the control group were also purposively sampled so that only those who had two years and above of teaching experience were engaged in this experiment. The power of purposive sampling lies in selecting information that is rich in cases for in-depth analysis of central issues being studied (Kombo & Thromp, 2006). Simple random sampling technique was employed in selecting the participating schools in cases where there were many schools with similar characteristics such as six mixed schools and, all had computers. Only the simple random sampling technique could give the researcher the four schools that were needed in this study. The same was applied in schools

with more than one stream (Mugenda & Mugenda, 2003). A sample size of 160 Form Two students was used in this study as Kathuri and Pals (1993) recommends 100 subjects as ideal for a research in social sciences. 80 students acted as experimental group and the other 80 as control group. In total, four classes of about 40 students- each drawn from different schools- were involved in this study. Table 2 shows the distribution of the sample population.

Table 2: Description of the Sample Population

	(two mixed schools) Treatment Groups	(two mixed schools) Control Groups	Total
Sample size of learners	40	40	80
No. of learners to be used in analysis	40	40	80
			160

3.6 Instrumentation

English Pronunciation Achievement Test (EPAT) and English Student’s Motivation Questionnaire (ESMQ) were used as instruments for data collection;

(i) English Pronunciation Achievement Test (EPAT)

The English Pronunciation Achievement Test, tested the learners’ proficiency in pronunciation of problematic consonant sounds among learners. Learners read a passage quietly at first for familiarization, then loudly for scoring purposes. As they read, the researchers scored the sampled target words with problematic consonant sounds among L₂ learners of Ekegusii background. Gross pronunciation errors were noted and scored. The English Pronunciation Achievement Test was developed from the KIE-now KICD- course books such as Excelling English Book 2 and modified to make them serve the purpose of this study. The test items were constructed based on the topic ‘Speech work’ and this was used as a pre-test and post-test to allow for comparison between the results. The EPAT consisted of 10 items testing learners’ knowledge of correct pronunciation of English consonant sounds that are absent in Ekegusii but present in English. Praats, a computer software, was used to record learners’ pronunciations/sounds before and after the experiment for comparison and scoring purposes.

(ii) English Students Motivation Questionnaire (ESMQ)

The ESMQ measured students' motivation in learning English pronunciation. Both groups filled in an ESMQ questionnaire as part of their post-test (see Appendix 5). The ESMQ contained items on favourable and unfavourable statements of the students' feelings towards pronunciation learning. The format was adapted from O'Malley and Scanlons' (1989) student Questionnaire and reformatted to fit the objectives of this study.

The English Student Motivation Questionnaire (ESMQ) was used to assess students' motivation to learn pronunciation of the consonant sounds contained in the secondary school English syllabus. The ESMQ consisted of 23 items (close-ended items) based on the degree of agreement or disagreement of the students' motivation to learn pronunciation constructed on a five-point Likert scale. The Likert – type scales are regarded as the most useful in a situation where it is possible to compare the respondent's score with a distribution of scores from some well-defined group (Kothari, 2003).

3.6.1 The Development and Use of Computer-Assisted Language Learning Instructional Material (Module)

Wasike (2003) avers that instructional techniques are important but the use of the instructional materials also influences students' achievement. The instructional materials used in the classroom were developed in line with the revised KIE 2002 English syllabus for secondary schools (see Appendix 2). A guiding manual for teachers was developed and used in the implementation of CALL throughout the treatment period. The teachers were trained on how to use CALL for one day to make them familiar with it. The study used Praats software and a CD for pronunciation developed from Oxford Dictionary. The learner pronounces words containing the problematic consonant sounds and the researcher compares their utterances with those recorded by the native speakers of English-considered to authentic pronunciation input. Here, the study was testing pronunciation of problematic consonant sounds; / p /, / d /, / v /, / θ /, / ð /, / z /, / h /, / j /, / dʒ /, / ʃ /. These sounds can only be found in Ekegusii speakers who can speak English language proficiently because they are absent in some L1 languages such as Ekegusii.

3.6.2 Validity of the Research Instruments

Validity is the degree to which results obtained from analysis of data actually represents the phenomenon under study (Mugenda & Mugenda, 2003). The English Pronunciation Achievement Test (EPAT), English Students' Motivation Questionnaire (ESMQ) and the CALL module were examined for content and face validity by a team of experts in the Faculty of Education and Community studies, Egerton University. The opinions of some secondary school teachers of English, were also sought. The recommendations of the experts were used to improve the instruments before they were used in the actual study.

3.6.3 Reliability of the Research Instruments

Reliability refers to a measure of degree to which a research instrument yields consistent results or data after repeat trials (Mugenda & Mugenda, 2003). The questionnaire- ESMQ and EPAT were piloted for reliability. The reliability of EPAT was estimated using Kuder Richard 21 method while that of ESMQ was estimated using the Cronbach Alpha. The Alpha method is considered suitable when a questionnaire is constructed using close ended items that yield a range of responses whereas KR21 is appropriate in situations where the data is continuous (Borg & Gall, 2003). The reliabilities coefficients of EPAT and ESMQ were 0.76 and 0.73 respectively. The tools were deemed reliable as they were above the 0.7 threshold as recommended by Frankel and Wallen (2000).

3.8 Data Collection Procedures

Upon receiving a letter of approval from Graduate School of Egerton University, the researcher obtained a research permit from the National Commission for Science Technology and Innovation (NACOSTI) before proceeding to gather data for the study. The principals and the teachers of English that were involved in this study were contacted in good time for permission and assistance. The researcher sought the participants' consent on the first day of classes. An informed consent form was presented (see Appendix 1), after participants had signed the form, the teachers were trained on how to use CALL software to teach pronunciation. . A manual showing how the work would be covered was issued to the teachers. The researcher and the instructors administered the pre-test (paper version) to the control and experimental groups in their respective classes and schools. Then, both groups received instruction through different methods for two weeks. Each session lasted for an hour. During the two weeks, for classroom practice, English grammar text books and Cambridge Advanced Learner's Dictionary were used. The CD versions of these materials

were also used by the learners instructed by CALL. In addition, computer software or programmes by native speakers of English were used by the participants. Some of the software materials were converted into paper tests for easy administration. For respondents instructed by traditional instruction, practice tests on the CD were converted to paper tests. The respondents in the experimental group worked on a computer and learnt at their own pace after the formal lesson. They were free to study any section as much as they liked. The instructor made sure that the respondents were working on their computers. The respondents in the control group were meeting the instructor two hours each week during the two weeks. The printed and paper versions of the practice tests were used according to the schedule set by the instructor.

EPAT (English Pronunciation Achievement Test), and ESMQ (English Students' Motivation Questionnaire) were used to collect data in this study. The pre-test was administered to the first Experimental group and control group (E1 and C1) which included recording of students' voices. After two weeks of treatment, and a month after the treatment, a post-test was administered to all groups (E1, E2 & C1, C2) after One month's break to allow the silent period to take place according to Theories of Second Language Acquisition by Krashen (1982). The researcher supervised the teaching, and scored pre-tests and post-tests. The questions were taken from the approved course books and supplementary books by Ministry of Education (MOE). The test also consisted of a passage for reading aloud before the instructor and the researcher for scoring purposes. The same test was used as post-test. Scores for both the pre-test and post-test were defined by looking at the number of correct items.

3.9 Data Analysis

The completed questionnaires and the English Pronunciation Achievement Tests were reviewed for errors and then the data organized before analysis. The Analysis of Variance was used to test the hypotheses with the help of an SPSS computer programme. A T-test, ANOVA and ANACOVA were used to test differences between the pre-test and post-test mean scores due to their ability to detect differences between two groups (Borg & Gall, 1989) and the result helped in determining whether the differences were significant or not.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the results of the study and the discussion of the same. The pre-test analysis is in the first section of the chapter. The subsequent four sections contain the results of the four hypotheses tests. The hypotheses were tested at the 0.05 level of significance using ANOVA and ANCOVA. Each result of the hypothesis is discussed and related to the findings of similar previous studies.

4.2 Pre-test Analysis

Two groups E1 and C1 were pretested on EPAT and ESMQ before the commencement of the treatment. Pre-testing helps a study to identify subjects' characteristics before the treatment commences. The knowledge gathered during the pre-test helps the researcher to come up with valid and objective conclusions about the population after the treatment (Luvanya Kumari, 2013). E1 and C1 were chosen because they were the only groups that were exposed to both the pre-test and post-test. The t-test was used to establish whether the two groups were similar on EPAT and ESMQ at the point of entry or not.

Table 3: Comparison of the Students' Pre-test Mean Scores on EPAT and ESMQ between E1 and C1

Scale	Group	N	Mean	SD	Df	t-value	p-value
EPAT	E1	40	18.88	2.98	78	0.543	0.589
	C1	40	19.25	3.19			
ESMQ	E1	40	4.05	0.77	79	1.513	0.134
	C1	40	3.89	0.42			

The results on Table 4 show that the mean score ($M = 19.25$, $SD = 3.19$) of C1 on EPAT were higher than that ($M = 18.88$, $SD = 2.98$) of E1. However, the difference between the two means were not statistically significant at the 0.05 level, $t(78) = 0.543$, $p > 0.05$. This

means that the two groups C1 and E1 were similar at the point of entry as measured by EPAT. The results on the Table also show that E1 mean score ((M = 4.05, SD = 0.77) on ESMQ was higher but not significantly different from that (M = 3.89, SD = 0.42) of C1, $t(79) = 1.513$, $p > 0.05$. This is an indicator that the two groups were similar with respect to ESMQ before the commencement of the treatment. On the basis of the results in Table 4, E1 and C1 were considered suitable for the study as they were drawn from a stable population with comparable characteristics on the two measures EPAT and ESMQ.

The gender differences on EPAT and ESMQ of the groups C1 and E1 that were pre-tested was also examined. The test of differences by gender was determined using the t-test (Table 5).

Table 4: Comparison by Gender of the Students' Pre-test Mean Scores on EPAT and ESMQ

Scale	Group	N	Mean	SD	Df	t-value	p-value
EPAT	Male	44	18.84	3.02	78	0.710	0.408
	Female	36	19.33	3.16			
ESMQ	Male	44	4.06	0.44	78	0.316	0.708
	Female	36	4.02	0.47			

The results on Table 5 reveal that the differences between males (M= 18.84, SD = 3.02) and females (M = 19.33, SD = 3.16) mean scores on EPAT were not statistically significant at the 0.05 level, $t(78) = 0.710$, $p > 0.05$. The results further reveal that the differences between males (M= 4.06, SD = 0.44) and females (M = 4.02, SD = 0.47) mean scores on ESMQ were not statistically significant at the 0.05 level, $t(78) = 0.316$, $p > 0.05$. On the basis of these results, the two groups were similar with respect to gender on the two measures EPAT and ESMQ at the point of entry.

4.3 Comparison of Students' Post-test Mean Scores on EPAT by Learning Method

The first hypothesis of the study was to establish whether there was a statistically significant difference in achievement between students taught using CALL and those taught using

traditional methods. The EPAT post-test mean scores was used to determine the differences among the groups; E1, C1, E2 and C2 that took part in the study. The mean scores and the standard deviations of the four groups are summarised on Table 6. The scores were out of a maximum of 24.

Table 5: EPAT Post-test Mean Scores and their Standard Deviations

Group	N	Mean	Std. Deviation
E1	40	22.58	2.31
E2	41	22.42	2.32
C1	40	20.35	1.92
C2	39	20.25	2.90

The results on Table 6 show that the mean scores of the experimental groups E1 (M = 22.58, SD = 2.31) and E2 (M = 22.42) were higher than those of the control groups C1 (M = 20.35) and C2 (M = 20.25). The results suggest that CALL enhanced achievement of learners. The results on the Table 6 do not reveal whether the differences among the groups were statistically significant. It was therefore necessary to conduct the ANOVA test to check whether the differences among the 4 groups were statistically significant or not. The results of the ANOVA test were as shown on Table 7.

Table 6: Comparison of EPAT Post-test mean scores by learning method

Scale	Sum of Squares	Df	Mean Square	F-ratio	p-value
Between Groups	193.121	3	64.374	11.354	0.000*
Within Groups	884.484	156	5.670		
Total	1077.605	159			

*Significantly different at 0.05 level

The output of the ANOVA test on Table 7 shows that the difference among the mean scores of E1, C1, E2 and C2 were statistically significant at the 0.05 level in favour of the experimental groups, $F(3,156) = 11.354$, , $p < 0.05$. The results of the test however did not reveal where the differences were, given that 4 groups were involved. There was need for the Post Hoc (multiple comparisons) test as it reveals where the differences lie between paired

groups. The Least Significant Difference Post Hoc was selected because it is recommended in cases where the number of groups to be compared is small (Field, 2005).

Table 7: Multiple Comparisons of EPAT Post-test Mean cores by Learning Method

Paired Group	Mean Difference	p-value
E1 versus E2	0.15	.994
E1 versus C1	2.22	.000*
E1 versus C2	2.32	.000*
E2 versus C1	2.07	.001*
E2 versus C2	2.17	.000*
C1 versus C2	0.10	.998

* Significantly different at 0.05 level

The results on Table 8 show significant differences between paired groups; E1- C1 ($p < 0.05$), E1 - C2 ($p < 0.05$), E2 - C1 ($p < 0.05$) and E2 – C2 ($p < 0.05$), the difference between E1- E2 ($p > 0.05$) and C1 – C2 ($p > 0.05$) were however not statistically significant. An examination of the Post Hoc results revealed that the experimental groups E1 and E2 were similar. The test results further reveal that the control groups C1 and C2 were also similar.

The ANOVA test did not take into account differences among E1, C1, E2 and C2 before the commencement of the study. This means the differences among the groups observed during the ANOVA test could be due to differences among the groups at the point of entry. The ANCOVA test was conducted in order to address the weakness of ANOVA. Field (2010) posits that ANCOVA uses a covariate to level out the initial differences in the mean scores of sub-groups before difference tests. The KCPE mean scores were used as the covariate during the ANCOVA test. The adjusted EPAT post-test means are summarised on Table 9:

Table 8: Adjusted EPAT Post-test mean scores with KCPE as the covariate

Group	Mean	Std. Error
E1	22.86	0.374
E2	22.43	0.360
C1	20.36	0.365
C2	20.08	0.374

The result on Table 9 reveal that the experimental groups E1 (M = 22.86) and E2 (M = 22.43) outperformed their control counterparts C1 (M = 20.36) and C2 (M=20.08). The ANCOVA was used to determine whether the difference among the groups were statistically significant at the 0.05 level as indicated on Table 10.

Table 9: ANCOVA Test on EPAT Post-test mean scores by Learning Method

Scale	Sum of Squares	Df	Mean Square	F-ratio	p-value
Contrast	229.308	3	76.436	14.357	0.000*
Error	819.889	154	5.324		

* Significant at 0.05 level

The results on Table 10 reveal that the differences among E1, C1, E2 and C2 groups were statistically significant at the 0.05 level, $F(3, 154) = 14.357, p < 0.05$. The ANOVA Post Hoc was used to reveal where the difference between the paired groups lay. The Post Hoc results are contained on Table 11.

Table 10: ANCOVA Post-Hoc

Paired Groups	Mean Difference	p-value
E1 versus E2	0.43	0.407
E1 versus C1	2.50	0.000*
E1 versus C2	2.77	0.000*
E2 versus C1	2.06	0.000*
E2 versus C2	2.34	0.000*
C1 versus C2	0.28	0.597

The ANCOVA Post Hoc results on Table 11 reveal that there were statistically significant differences between paired groups; E1- C1 ($p < 0.05$), E1 - C2 ($p < 0.05$), E2 - C1($p < 0.05$) and E2 – C2 ($p < 0.05$), The difference between E1- E2 ($p > 0.05$) and C1 – C2 ($p > 0.05$) were however not significant. An examination of the Post Hoc results reveals that the experimental groups E1 and E2 were similar. The Post Hoc test results also reveal that the control groups C1 and C2 were similar. Given that the groups were similar at the point of entry, it can therefore be said that the treatment enhanced students' performance.

4.4 Comparison of Students Mean Gain on EPAT by Learning Method

Gain analysis examined two groups E1 and C1 before and after the treatment and tried to explain improvements in learning outcomes. Gains made by learners are the difference between the pre-test and post-test mean scores. The magnitude of gain (referred to as paired difference) gives an indication of the relative effects of the treatments on the groups.

The pre-test analysis (section 4.2) revealed that groups E1 and C1 were similar on EPAT at the point of entry. After the course, the post-test mean scores and gains of the groups were established as shown on Table 10.

Table 11: Students' EPAT Pre-test and Post-test Mean Scores, Standard Deviations and Mean Gains by Learning Approach

Stage	Scale	Group	
		E1 N = 40	C1 N = 40
Pre-test	Mean	18.88	19.25
	Standard Deviation	2.98	3.19
Post –test	Mean	22.58	20.35
	Standard Deviation	2.31	1.92
	Mean Gain	3.70	1.10

The results on Table 12 show that the mean of E1 ($M = 18.88$, $SD = 2.98$) and C1 ($M = 19.25$, $SD = 3.19$) were similar at the point of entry. However, after the treatment the post-test mean scores of E1 ($M = 22.58$, $SD = 2.31$) was higher than that ($M = 20.35$, $SD = 1.92$) of C1. The mean gain of E1 ($M = 3.70$) was also higher than that ($M=1.10$) of C1. The remarkable improvement in learning outcomes exhibited by E1 was attributed to the treatment. Further test were done to establish whether the mean gain of E1 was significantly different from that of C1. The t-test results of the comparison are in table 13.

Table 12: Differences in Mean Gain on EPAT between E1 and C1

Group	N	Mean Gain	SD	Df	t-value	p-value
E1	40	3.70	2.06	78	4.867	0.000*
C1	40	1.10	2.67			

* Significantly different at 0.05

The results on Table 13 reveal that the mean gain ($M = 3.70$, $SD = 2.06$) of the E1 was greater than that ($M = 1.10$, $SD = 2.67$) of C1. The two gains were significantly different at the 0.05 level, $t(78) = 4.867$, $p < 0.05$. Given that the two groups were similar at the point of entry, the significant gain in EPAT of the experiment group E1 was attributed to the effects of CALL.

The results of ANOVA, ANCOVA and gain analysis show that the difference in the mean score between the experimental groups and control groups were statistically significant in favour of the experimental groups. This implies CALL positively affected students' achievement in English pronunciation. On the basis of these results, the first hypothesis which stated that there is no statistically significant difference in achievement in English language pronunciation between secondary school students in Gucha Sub-County taught using CALL and those taught using the traditional method was rejected.

The results of the study showed that CALL positively affected students' achievement in English pronunciation. These findings are consistent with findings of Hashemyolia and Ayub (2014) who indicated that multimedia courseware play an important role in enhancing students' achievement. The study was done to determine the effects of Rosetta stone's English Language Courseware (RSELC) on third grade students' performance in public secondary schools in Iran and it aimed to evaluate students' perception about the usefulness of language courseware. The study utilized a quasi-experimental method using only post-test design which consists of two groups. Control group was taught using traditional instruction and experimental group was taught using educational software, namely; RSELC. The results indicated that there was significant difference between the groups on the overall performance in favour of experimental group.

Nutta (2001) also showed experimentally that computer-based instruction was an effective method of teaching English as second language. The researcher investigated the effect of a CALL programme on students' writing ability in English by implementing the programme cooperatively and collectively. The findings of the study showed that there was a statistically significant difference between the experimental group, who studied via the computer and the control group, who studied through the traditional method. The difference was in favour of the experimental group who studied via the computer. In a similar way, Mwei, Too and Wando (2011) noted that students achievement in mathematics improved significantly when exposed to computer aided instruction (CAI). They posited that a possible explanation for the effectiveness of CAI is students' active involvement in the learning process through frequent student-machine interactions.

Lee (2008) investigated how the characteristics of two computer Assisted Language Learning (CALL) programmes assisted Taiwanese students learning English pronunciation effectively and how teachers may effectively integrate such computer software into their teaching. When used alongside the traditional classroom teaching, CALL is a tool which has the potential to address some of the issues English pronunciation teachers' face, such as low student motivation and English pronunciation proficiency.

A study conducted in Nigeria by Ifeoma (2010) revealed that CALL enhanced students' mastery of English. Hegelheimer & Fisher (2006) noted that computer programs provided effective interaction which helps teaching and learning grammar in much quicker, easier, and more convenient ways in comparison with the traditional teaching methods. Borg and Burn (2008) further agreed that by using computer, students' achievement could be improved because they could practice English pronunciation and be provided with immediate feedback. Consequently, using computers, students can discover grammatical structures among the variety of practices with immediate feedback. They also noted that computer allowed individuals to construct and develop their own knowledge. Similarly, Nabah, Hussaini and Al-Omari (2009) also noted improvement in achievement of students taught English as a second language using CALL

However, not all researchers agree with the ability of CALL to improve students' learning. Kilickaya (2007) found out that there was no statistically significant difference in learners achievement between those exposed to Computer aided instruction and those using conventional methods. The study explored the effect of CALL on the undergraduate student

achievement on the TOEFL exam. It was a quasi-experimental research. The experimental group was taught using Computer Assisted Instruction (CAI) in a language laboratory whilst the other class was taught using a traditional classroom setting. The results showed that there was no statistically significant difference between the control and the experimental group in overall scores and in the structure section. However, the interviews showed that the participants in the experimental group valued CALL. Studies carried out in India by Tiwari (2011) revealed that CAI did not have any effect on learners' achievement in English. Mill's (2001) findings revealed that CAI was found to be effective for fact based learning, but not as effective for topics requiring critical thinking or mathematical problem solving. In addition, the time required by learners exposed to CAI to internalize a concept was higher than is provided for in conventional classroom instruction. Akour, (2006) observed that college students taught using traditional instruction, combined with the use of the computer, performed better than those taught using traditional instructional strategies.

Gonglewski, Meloni and Margaret (2001) argue that the effectiveness of CALL in improving learning outcomes in English is due to the fact that it provides immediate reinforcement for the student as he or she works on the computer. In addition, students have increased opportunities to practice the targeted skills in the stimulating and individualized learning environment provided by the computer (Wanjala, 2005). The positive results of CALL might be explained by the match between the students' academic needs and its features that make learning students centred (Kuang-wu. 2000). Unlike the traditional mode CALL makes the teaching and learning activities enjoyable because they involve students actively in the learning process (Ndirangu, Kiboss & Wekesa, 2004).

4.5 CALL and Students' Motivation to Learn Pronunciation in English Language

The second hypothesis of the study stated that there was no statistically significant difference in motivation to learn English language pronunciation between students taught using CALL and those taught using traditional methods. The data that was used to test the hypothesis of the study was gathered using the ESMQ. A set of 19 Likert scale items were used to capture students' perceptions on their motivation when using CALL. The students responses to the items were summed up and an overall mean for each of the four groups; E1, E2, C1 and C2 computed. The post-test means and standard deviations of the four groups were as indicated on Table 14:

Table 13: ESMQ Post-test Mean Scores and their Standard Deviations

Group	N	Mean	Std. Deviation
E1	38	4.19	0.50
E2	45	4.23	0.49
C1	40	3.90	0.59
C2	41	3.91	0.26

The results on Table 14 shows that the mean scores of E2 (M = 4.23, SD = 0.49) was the highest followed by that (M = 4.19, SD = 0.50) of E1 while the lowest and the second lowest means were those of C1 (M = 3.90, SD = 0.59) and C2 (M = 3.91, SD = 0.26) respectively. The results on the Table reveal that the motivation of students exposed to CALL; E1 and E2 were generally higher than those of the control groups C1 and C2. It was not possible to establish whether the difference among the groups were significant by visual inspection. This was established using the ANOVA test.

Table 14: Comparison of ESMQ Post-test means scores by learning method

Scale	Sum of Squares	Df	Mean Square	F- ratio	P-value.
Between Groups	3.813	3	1.271	5.693	.001*
Within Groups	35.724	160	.223		
Total	39.537	163			

* Statistically significant at 0.05 level

The ANOVA results on Table 15 reveals that the difference in mean scores among the four groups E1, E2, C1 and C2 was statistically significant at the 0.05 level, $F(3, 160) = 5.693$, $p = 0.001$. The results of the test however did not reveal where the differences were. It was therefore necessary to conduct the Post Hoc (multiple comparison) test. The results of the Post Hoc were as on Table 16.

Table 15: The ANOVA Post-Hoc on ESMQ Post-test

Paired Groups	Mean Difference	p-value
E1 versus E2	-0.04	1.000
E1 versus C1	0.29	0.042*
E1 versus C2	0.27	0.072
E2 versus C1	0.33	0.009*
E2 versus C2	0.31	0.016*
C1 versus C2	-0.02	1.000

The results on Table 16 show that there were statistically significant differences between paired groups E1-C1 ($p < 0.05$), E1-C2 ($p < 0.05$) and E2-C2 ($p < 0.05$). However, the difference between paired groups E1-E1 ($p > 0.05$), E1-C2 ($p > 0.05$), and C1-C2 ($p > 0.05$) were not statistically significant at the 0.05 level. The results indicate that the motivation of the experimental groups E1 and E2 was generally higher than that of the control groups C1 and C2. The findings are consistent with those of Ushida (2005) who noted that effective use of CALL enhanced students' motivation to learn a second language.

The ANOVA test results revealed that there were significant differences in motivation to learn English pronunciation in favour of the experimental groups. The observed differences could not be attributed to the treatment (CALL) with certainty since ANOVA does not have features to take care of initial differences (Field, 2012). There was need to ascertain this using ANCOVA as it has features that levels out the initial differences. KCPE grades were used as the covariate during the ANCOVA test. The adjusted post-test ESMQ mean scores for the four groups E1, E2, C1 and C2 are summarised on Table 17.

Table 16: Adjusted ESMQ Post-test mean scores with KCPE as the covariate

Groups	N	Mean
E1	36	4.22
E2	45	4.23
C1	40	3.90
C2	41	3.90

The adjusted mean scores on Table 17 show that the experimental groups E1 (M = 4.22) and E2 (M = 4.23) were higher than those of the control groups C1 (M = 3.90) and C2 (M = 3.90). Further analysis was done using the ANCOVA to establish whether there were significant differences among these adjusted means. The results of the ANCOVA test are on Table 18:

Table 17: Comparison of ESMQ post-test mean scores by learning method using ANCOVA

Scale	Sum of Squares	Df	Mean Square	F-ratio	p-value
Contrast	4.159	3	1.386	6.179	0.001*
Error	35.226	157	.224		

The results on Table 18 show that the differences among the mean scores of E1, E2, C1 and C2 as measured by ESMQ were statistically significant at the 0.05 level in favour of the experimental groups, $F(3, 157) = 6.179$, $p = 0.001$. The ANCOVA Post Hoc procedure was then used to investigate where the differences were. The results of the pairwise comparisons are contained in Table 19:

Table 18: ANCOVA Post-Hoc Test

Paired Group	Mean Difference	p-value
E1 versus E2	0.01	0.923
E1 versus C1	0.32	0.004*
E1 versus C2	0.32	0.005*
E2 versus C1	0.33	0.002*
E2 versus C2	0.33	0.002*
C1 versus C2	0.01	0.984

* Statistically significant at the 0.05 level

The pairwise comparison results on Table 19 show that there were statistically significant differences between paired groups E1-C1 ($p < 0.05$), E1-C2 ($p < 0.05$), E2-C1 ($p < 0.05$) and E2-C2 ($p < 0.05$). However, the difference between paired groups E1-E2 ($p > 0.05$) and C1-C2 ($p > 0.05$) were not statistically significant at the 0.05 level. The results indicate that the motivation of the experimental groups were generally higher than that of the control groups.

4.6 Gain Analysis on ESMQ

Gain analysis was also conducted on ESMQ as a way of examining relative effects of the treatment on the groups and improvements in learning outcomes. It is worth recalling that the pre-test analysis (section 4.2) revealed that groups E1 and C1 were similar on ESMQ at the point of entry. The changes in the learning outcomes of each group after the treatment as measured by their mean scores were as indicated are on Table 20:

Table 19: Students' ESMQ Pre-test and Post-test Mean Scores, Standard Deviations and Mean Gains by Learning Approach

Stage	Scale	Group	
		E1	C1
Pre-test	N	41	40
	Mean	4.05	3.89
	Standard Deviation	0.77	0.42
Post –test	N	38	40
	Mean	4.19	3.90
	Standard Deviation	0.50	0.59
	Mean Gain	0.14	0.01

The data on Table 20 reveals that the pre-test mean score of E1 ($M = 4.05$, $SD = 0.77$) was higher than that ($M = 3.89$, $SD = 0.42$) of C1. The mean score of E1 ($M = 4.19$, $SD = 0.50$) was also higher than that ($M = 3.90$, $SD = 0.59$) of C1 after the treatment. An examination of the mean scores indicate that E1 had a higher gain ($M = 0.14$) than that ($M = 0.0$) of C1. This means that the improvement in motivation of students in group E1 was higher than that in group C1. This implies that CALL has the ability to enhance learners' motivation to learn English language pronunciation. The t-test was conducted to establish whether the difference in gain between the two groups was significant or not. The results of the test were as indicated on Table 21:

Table 20: Differences in Mean Gain on ESMQ between E1 and C1

Group	N	Mean Gain	SD	Df	t-value	ρ-value
E1	38	0.14	0.71	76	0.866	0.389
C1	40	0.01	0.59			

The results on Table 21 reveal that the difference between the mean gains of E1 and C1 was not statistically significant at the 0.05 level, $t(76) = 0.866$, $p = 0.389$. The results of the ANOVA and ANCOVA tests showed that there were statistically significant differences in ESMQ mean scores among the four groups E1, E2, C1 and C2 in favour of the experimental groups. The gain analysis also showed higher improvement in learning outcomes of the experimental groups. On the basis of these results, the second hypothesis which stated that there is no statistically significant difference in motivation to learn English pronunciation between students' taught using CALL and those taught using traditional methods was rejected.

The results in this section showed that there were significant differences in ESMQ mean scores among the four groups E1, E2, C1 and C2 in favour of the experimental groups. This is an indication that CALL enhanced students' motivation to learn English language pronunciation. The findings are in agreement with other empirical studies that have documented significant mean gains of students when digital technologies are incorporated into official curricula (Beatty & Nunan, 2004; McDonough & Sunitham, 2009; Golonka, 2012). The findings are also consistent with those of Ayres (2002 who observed that students appreciated the use of CALL, and believed that it facilitates the learning of the target language. Gökhan and Kuzucu (2009) found that students taught through CALL were more successful, had higher motivation and better retention than those who are learned through the traditional methods of instruction.

These findings show that CALL enhances students' motivation. Ushida (2005) argued that the enhanced motivation is due to the fact that CALL provides students with the opportunity to learn on their own and collaborate outside the classroom. Chenoweth and Murday (2003) were of the view that student' perceptions of the possible benefits of Computer Aided Learning such as a sense of achievement and enhancement of learning opportunities

increased their motivation. Mayer (2005) provides empirical evidence that learning in multimedia environments is facilitated when the information is presented through the verbal and visual channels in a way which does not overload the working memory such as presenting information by accompanying words with pictures instead of using only words. Such an approach enhances students' motivation to learn.

4.7 Gender Differences in Achievement in English Language Pronunciation when

The third hypothesis of the study sought to find out whether there was a difference in achievement in English language pronunciation between boys and girls taught using CALL. The post-test means of E1 and E2 were used during this analysis as they were the only groups exposed to treatment. The test of difference by gender was done first using the t-test then ANCOVA. The results of the t-test are in Table 22:

Table 21: Differences by gender in EPAT Post-test mean scores of students exposed to CALL

Group	N	Mean	SD	Df	t-value	p-value
Male	45	22.30	2.46	79	0.844	0.401
Female	36	22.74	2.09			

The t-test results on Table 22 show that the mean score ($M = 22.74$, $SD = 2.09$) of the female students were higher than that ($M = 22.30$, $SD = 2.46$) of their male counterparts. The difference between the mean score was however not statistically significant at the 0.05 level, $t(79) = 0.844$, $p = 0.401$. The results suggest that gender does not affect the achievement of students taught using CALL.

The ANCOVA analysis was conducted as a way of ascertaining that the non-significant difference observed during the t-test analysis was not due to initial differences. It is important to remember that this study used the Solomon four quasi-experimental research design where only E1 and C1 are pretested. Due to the design, it was not possible to determine the entry behaviours of E2, hence the need for the ANCOVA test. The ANCOVA test using the KCPE grades in English as the covariate. The adjusted EPAT Post-test mean scores with KCPE as the covariate are contained on Table 23:

Table 22: Adjusted EPAT Post-test mean scores with KCPE as the covariate

Gender	N	Mean
Male	44	22.40
Female	36	22.74

The adjusted mean score on Table 23 reveal that the mean of the female students was $M = 22.74$ while that of the males was 22.40. The results of the ANCOVA comparing the two adjusted means of the two groups are on Table 24:

Table 23: Comparison by gender of EPAT post-test mean scores of students exposed to CALL using ANCOVA

Scale	Sum of Squares	Df	Mean Square	F-ratio	p-value
Contrast	2.286	1	2.286	0.466	0.497
Error	378.027	77	4.909		

The result of the ANCOVA test on Table 24 show that the difference between the mean score of the male students was not statistically significantly different from that of their female counterparts at the 0.05 level, $F(1, 77) = 0.466$, $p = 0.497$. Both the t-test and ANCOVA analysis showed no statistically significant gender differences between boys and girls. This means that gender does not have any effect on students exposed to CALL treatment. The third hypothesis which stated that there is no difference in achievement in English language pronunciation between boys and girls taught using CALL was accepted.

The t-test and ANOVA analysis showed that the gender of students exposed to CALL does not affect their achievement in English language pronunciation. The findings support those of Spencer (2004) who found no significant influence of gender on the achievement of college students in mathematics exposed to computerized mathematics courseware. The findings are also consistent with those of Yusufu and Afolabi (2010) who conducted a study on the influence of gender on the academic performance of students in biology with a CAI package. The result of the study showed no significant gender difference. These findings on gender agree with those of Tiwari (2011), Bello (1990) and the conclusions of Kirkpatrick and

Cuban (1998). Thus, it can be deduced that the use of computer assisted instruction enhanced the performance of both male and female students equally.

4.8 Difference in Motivation to Learn Pronunciation in English Language between Boys and Girls Taught Using CALL

The fourth hypothesis of the study sought to determine whether there was a statistically significant difference in motivation to learn pronunciation in English language by gender of students taught using CALL. The ESMQ post-test mean scores of the students from groups E1 and E2 were used to determine the gender difference. The t-test was used to establish the difference; the output of the test is on Table 25:

Table 24: Differences by gender in ESMQ Post-test Mean Scores of Students Exposed to CALL

Group	N	Mean	SD	Df	t-value	ρ-value
Male	44	4.22	0.45	80	0.105	0.916
Female	38	4.21	0.54			

The results of the t-test on Table 25 reveal that the mean score ($M = 4.21$, $SD = 0.54$) of the female students was comparable to that ($M = 4.22$, $SD = 0.45$) of their male counterparts. The test results further reveal that the two mean scores are not statistically significantly different at the 0.05 level, $t(79) = 0.105$, $p = 0.916$. The results suggest that gender does not affect the motivation of students taught using CALL.

Further analysis was done using ESMQ post-test using the ANCOVA. The test using the KCPE grades in English as the covariate. The adjusted ESMQ Post-test mean scores with KCPE as the covariate are contained on Table 26:

Table 25: Adjusted ESMQ Post-test mean scores with KCPE as the covariate

Gender	N	Mean
Male	43	4.22
Female	38	4.21

The results on Table 26 show that the adjusted mean scores of the male ($M = 4.22$) and female ($M = 4.21$) students on ESMQ are similar. This was confirmed by the results of the ANCOVA test as shown on Table 27:

Table 26: Comparison by gender of ESMQ post-test mean scores of students exposed to CALL using ANCOVA

Scale	Sum of Squares	Df	Mean Square	F-ratio	p-value
Contrast	0.001	1	0.001	0.005	0.944
Error	18.397	78	0.236		

The results of the ANCOVA test on Table 27 show that the adjusted means scores of the female and male students were comparable as the difference between them was not statistically significant at the 0.05 level, $F(1, 78) = 0.005$, $p = 0.944$. This means that gender does not affect the motivation to learn English pronunciation of students exposed to CALL.

The results of both the t-test and ANCOVA showed that the difference between the mean scores of the male and female students on ESMQ was not statistically significant. This is an indication that gender does not affect the motivation to learn English pronunciation of students exposed to CALL. The fourth hypothesis which stated that there is no statistically significant difference in motivation to learn pronunciation in English language between boys and girls taught using CALL was accepted.

The results of both the t-test and ANCOVA tests revealed that the motivation of the male and female students as measured by ESMQ were similar. This is an indication that gender has no effect on the motivation to learn pronunciation in English language of students exposed to CALL. These findings are in line with those of Spradline (2009) who found out that gender did not influence students motivation to learn when computer based instruction (CBI) was used. Spradline (2009) posits that CBI by nature is student-centred and accommodates differences in what students need to learn, how they learn, the pace at which they learn, and the support they need in the learning process. Student-centred approaches have been associated with greater mastery of concepts and motivation to learn (Teal, 2008). Equally, the findings of a study conducted by Sadeghi and Soltanian (2010) on effects of computer mediated reading showed no statistically significant gender difference in the students' motivation to read.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This Chapter summarizes the findings of the study on Effects of Computer Assisted Language Learning on secondary school students' achievement and motivation in English pronunciation in Gucha sub-county of Kisii county, Kenya and uses them to draw conclusions, recommendations and suggestions for further research. The study was guided by the following hypotheses:

- H0₁:** There is no statistically significant difference in achievement in English language pronunciation between secondary school students in Gucha Sub-County taught using CALL and those taught using the traditional method.
- H0₂:** There is no statistically significant difference in students' motivation in learning pronunciation in English language between students taught using CALL and those taught using traditional method.
- H0₃:** There is no statistically significant gender difference in achievement in English language pronunciation when they are taught using CALL.
- H0₄:** There is no statistically significant gender difference in motivation to learn pronunciation in English language when they are taught using CALL.

5.2 Summary of Major Findings

The findings on the first hypothesis showed that the mean gain of the E1 ($M = 3.70$, $SD = 2.06$) was greater than that of C1 ($M = 1.10$, $SD = 2.67$). The mean gains were statistically significantly different at the 0.05 level, $t(78) = 4.867$, $p < 0.05$ in favour of experimental groups. Given that the two groups were similar at the point of entry, the significant gain in English Pronunciation Achievement Test (EPAT) of the experiment group E1 was attributed to the effects of CALL. The results of ANOVA, ANCOVA and gain analysis showed that the difference in the mean score between the experimental groups and control groups were statistically significant in favour of the experimental groups indicating the superiority of CALL over traditional methods on teaching pronunciation.

The findings on the second hypothesis on motivation, the result showed that those students taught through CALL had a high motivation mean gain than those taught using traditional methods. This indicated that a difference between the mean gains of E1 and C1 was statistically significant at the 0.05 level, $t(76) = 0.866$, $p = 0.389$. The results of the ANOVA and ANCOVA tests showed that there was a statistically significant difference in English Students' Motivation Questionnaire (ESMQ) mean scores among the four groups E1, E2, C1 and C2 in favour of the experimental groups. The gain analysis also showed a higher improvement in learning outcomes of the experimental groups. These findings showed the effectiveness of CALL on enhancing the learners' motivation to learn the English pronunciation over the traditional methods of teaching the same.

On the third hypothesis, the findings on Pronunciation achievement showed that the mean score ($M = 22.74$, $SD = 2.09$) of the female students was higher than that of their male counterparts ($M = 22.30$, $SD = 2.46$). The difference between the mean scores was however not statistically significant at the 0.05 level, $t(79) = 0.844$, $p = 0.401$. The results suggest that gender does not have any effect on the achievement of female students taught using CALL. Additionally, the result of the ANCOVA test show that the difference between the mean score of the male students was not statistically significantly different from that of their female counterparts at the 0.05 level, $F(1, 77) = 0.466$, $p = 0.497$. Both the t-test and ANCOVA analysis showed no statistically significant gender differences between boys and girls. This means that gender does not negatively affect female students exposed to CALL treatment as observed in traditional methods.

The findings on the fourth hypothesis showed that the difference between the mean scores of the male and female students on English Student Motivation Questionnaire (ESMQ) was not statistically significant at 0.05 level. This is an indication that gender does not affect the motivation to learn English pronunciation of students exposed to CALL. The results of the t-test on Table 25 revealed that the mean score of the female students ($M = 4.21$, $SD = 0.54$) was comparable to that of their male counterparts ($M = 4.22$, $SD = 0.45$). The test results further revealed that the two mean score are not statistically significantly different at the 0.05 level, $t(79) = 0.105$, $p = 0.916$. The results suggest that gender does not affect the motivation of students taught using CAL5.3 Conclusions.

Based on these findings, the following conclusions were drawn from the findings of the study:

- (i) Based on the first hypothesis, it can be concluded that the two groups E1 and C1 were similar on EPAT at the point of entry and so were Groups E1 and C1 on ESMQ which indicated that CALL outperformed the traditional method. This implies CALL produces superior results to the traditional methods on students' achievement in English language pronunciation.
- (ii) On the second hypothesis, the results indicated that CALL positively affects students' motivation to learn English pronunciation. The results on Table 21 revealed that the difference between the mean gains of E1 and C1 was not statistically significant at the 0.05 level, $t(76) = 0.866$, $p = 0.389$. The results of the ANOVA and ANCOVA tests showed that there were statistically significant differences in ESMQ mean scores among the four groups E1, E2, C1 and C2 in favour of the experimental groups. The gain analysis also showed a higher improvement in learning outcomes of the experimental groups. On the basis of these results, the second hypothesis which stated that there is no statistically significant difference in motivation to learn English pronunciation between students' taught using CALL and those taught using traditional methods was rejected. This is an indication that CALL enhanced students' motivation to learn English pronunciation.
- (iii) On the third hypotheses, students taught using CALL achieved similarly by Gender. The t-test results on Table 22 showed that the mean score of the female students ($M = 22.74$, $SD = 2.09$) were higher than that of their male counterparts ($M = 22.30$, $SD = 2.46$). The difference between the mean score was however not statistically significant at the 0.05 level, $t(79) = 0.844$, $p = 0.401$. The results suggest that gender does not affect the achievement of students taught using CALL. This implies that CALL was superior to traditional ones which tended to discriminate against girls.
- (iv) On the fourth hypotheses, the findings indicated that gender does not negatively affect female students' motivation when exposed to CALL. The results of the t-test on Table 25 revealed that the mean score of the female students ($M = 4.21$, $SD = 0.54$) was comparable to that of their male counterparts ($M = 4.22$, $SD = 0.45$). The test results

further reveal that the two mean scores are not statistically significantly different at the 0.05 level, $t(79) = 0.105$, $p = 0.916$. The results imply that gender does not affect the motivation of students taught using CALL. CALL did not disadvantage any student based on gender because both boys and girls had similar scores on this item, showing further the superiority of CALL in promoting high learning motivation among students.

5.3 Recommendations

In view of the fact that CALL seems to be superior in achievement and motivation and does not discriminate any gender, the government should provide more resources such as computers so that this method can be applied in schools for teaching language and other subjects. Based on the findings and conclusions of this study, the study may be suggested to teachers of English, policy makers, the Kenya Institute of Curriculum Development (KICD) on ways in which curriculum can be reorganized and the teaching methods. The following are specific recommendations for each study hypothesis.

Hypothesis One:

- (i) The learners should be given a basic knowledge of sound system of English phonetics, phonology and IPA symbols. If learners have phonetic and phonological awareness of English, they will be able to guide themselves towards correct pronunciation of a particular sound or word. Consequently equipped with such knowledge, learners will be better placed to use CALL to enhance their English pronunciation.
- (ii) The teacher should conduct students' need analysis test regarding pronunciation. According to the needs of the learners, the teacher should develop some appropriate model or some electronic devices appropriate to reduce on the learners' problems
- (iii) Scholars should research further on the effectiveness of CALL as a teaching method.

Hypothesis Two:

- (i) Teachers can also integrate such computer software into their teaching, in addition to teacher-directed learning. The results indicated that the students preferred the programme with repetition and other specific functions as well as the facility for self-paced and self-directed learning. The results also revealed CALL could address some of the issues English pronunciation teachers face such as low students'

motivation and low English pronunciation proficiency and based on this, it is recommended for enhancing motivation to learn English pronunciation.

Hypothesis Four

- (i) They should also find out if CALL approach can have a positive influence on learners' achievement and motivation if another topic in English is identified since this study concentrated on pronunciation alone.

5.4 Suggestions for Further Studies

In view of the findings of this study, the following aspects are recommended for further research:

- (i) Research is needed to explore the effectiveness of using CALL as a pedagogical tool at secondary school level in teaching other subjects apart from English pronunciations. Should these findings be in favour of CALL, this would provide evidence in its roll-out in secondary schools in Kenya.
- (ii) Research is needed to explore the performance of schools using CALL in all subjects and those using traditional methods.
- (iii) Research is needed to explore Challenges of implementing CALL method in language teaching in primary and secondary schools.

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APPENDIX 1

INFORMED CONSENT

Dear student,

This is to request your participation in a research study to explore teaching methods to language learning. Your participation in this study is voluntary. You are requested to sign and return the informed consent form before the study begins. The information you provide will be kept confidential. Only the researcher will see the complete forms. Your name will not be used in any reports of this study. One benefit from participating in this study is that you will contribute to the improvement of future language learning courses. There are no risks but participating will require some of your time. The tests will be coded with a number that will correspond to numbers on your examination form. Please sign and keep a copy of this form as an explanation of the study. If you have any questions, please contact the researcher at the following address:

Isaac Orina .N.
Faculty of Education and Community Development,
Department of Curriculum and Instruction,
Egerton University,
Box 536, Njoro
Mobile No: 0725540988
Email: isaacorina@yahoo.com

We will be glad to share the result of the study, if you write to us at the above address. Thank you again for your assistance in this project.

Yours sincerely,
Isaac Orina N. (Researcher)

I agree to participate in this study under the conditions outlined above.

Name.....Signature..... Date.....

APPENDIX 2

TEACHERS' GUIDE TO PLANNING AND IMPLEMENTING COMPUTER-ASSISTED LANGUAGE LEARNING PROGRAMME

This guide is meant to assist the teachers of English to plan and implement a teaching/learning programme based on Computer-Assisted Language Learning (CALL). Computer-Assisted Language Learning is the use of Computer programme to teach pronunciation. Instruction objective for each unit (sound) will be developed and tested at the end to determine the achievement level before moving to the next unit / sound.

The guide is organized into the following parts

- 1.0 The basics of effective teaching.
- 2.0 Instructional Objectives.
- 3.0 CALL-Based Teaching / Learning.
- 4.0 English pronunciation and CALL Syllabus
- 5.0 Pronunciation and objectives.
- 6.0 Reading.
- 7.0 Lesson plan.

The Basics of Effective Teaching

For effective teaching to take place, the instructor must plan the content, method to be used and the teaching-learning activities to be involved so as to achieve the desired result.

1.0 Instructional Objective

They refer to the desired outcome of the teaching-learning experiences. In other words, they are pointer to what a student can do after learning has taken place.

2.0 Computer-Based Learning/teaching

This is the teaching/learning that take place with the aid of the computer. Here, computer is used as electronic tutors or integrated into teaching as a resource/aid.

3.0 English Pronunciation and Syllabus

The KCSE English syllabus indicates the topics to be covered and the instructional objectives. A scheme of work was developed and integrated CALL-based teaching approach. The learners were briefed on how the subject matter would be handled.

4.0 Pronunciation Objectives

By the end of the topic, the learner should be able:

- a) To articulate the consonant sounds in words correctly.
- b) Speak fluently and confidently in a variety of topics/situations.

5.0 Lesson Plan

WEEK ONE

Lesson 1 & 2: 120 minutes

Lesson topic: Sounds - / p /, / d /, / v /, / θ /, / h /

WEEK TWO

Lesson 3 & 4: 120 minutes

Lesson topic: Sounds - / z /, / j /, / dʒ /, / ʃ /

: Reading passage

Reading a Passage (Learners read the passage and the researcher scores the target words)

A lot of artists limit themselves to business as usual. I am not sure I have a regular style. I am often told that my work incorporates a lot of decoration – if so, that is not conscious, as I always like to start from zero with my painting, to create something completely different. But I do have to work within certain limits, and the most important of those is that we live in the age of reproduction. All sorts of people know my art from magazines, catalogues or televisions. That is all right with me because I do not want them to go to a gallery. But one of the consequences is that I want to create works that have nearly as strong an impact in a photograph or a video as in real life. You see, I want my work to have street credibility, to speak directly to people, so that it does not need help of the white boxes – the museum or galleries – to be appreciated.

APPENDIX 3

ENGLISH PRONUNCIATION ACHIEVEMENT TEST (EPAT)

School: _____

Gender: _____

KCPE mean scores: _____

Instructions

Answer all Questions according to instructions given.

Read the following words aloud

Push, dog, fetch, thigh, help, zeal, volleyball, judge, shirt, bride, impeccable, embezzlement, magnificent, irregularity, measure. (15mks)

(2 marks for each word whose consonant sound is pronounced correctly according to the Received Pronunciation)

Sounds - / p /, / d /, / f /, / θ /, / h / / z /, / v /, / dʒ /, / ʃ /, / b /

Reading this passage twice. The first time read silently, second time read aloud (10mks)

Reading a passage (Learners read the passage and the researcher scores)

A lot of artists limit themselves to business as usual. I am not sure I have a regular style. I am often told that my work incorporates a lot at decoration – if so, that is not conscious, as I always like to start from zero with my painting, to create something completely different. But I do have to work within certain limits, and the most important of those is that we live in the age of reproduction. All sorts of people know my art from magazines, catalogues or televisions. That is all right with me because I do not want them to go to a gallery. But one of the consequences is that I want to create works that have nearly as strong an impact in a photograph or a video as in real life. You see, I want my work to have street credibility, to speak directly to people, so that it does not need help of the white boxes – the museum or galleries – to be appreciated.

APPENDIX 4

STUDENT MOTIVATION QUESTIONNAIRE (ESMQ)

School: _____

Gender: _____

KCPE mean scores: _____

INSTRUCTIONS

Read the items carefully and try to understand before choosing what truly agrees with your thought.

Circle the letter that corresponds to your feelings towards English Pronunciation Instruction.

KEY

SA = Strongly Agree

A = Agree

U = Undecided

D = Disagree

SD = Strongly Disagree

NB. There is no wrong or correct answer in this test.

1. Learning English pronunciation has:

- | | | | | | |
|--|----|---|---|---|----|
| a) Made me love English | SD | D | U | A | SA |
| b) Made learning pronunciation frustrating | SD | D | U | A | SA |
| c) Been dull and boring | SD | D | U | A | SA |
| d) Made pronunciation difficult | SD | D | U | A | SA |
| e) Highly motivated me to work hard in pronunciation | SD | D | U | A | SA |
| f) Helped me to pronounce words correctly | SD | D | U | A | SA |

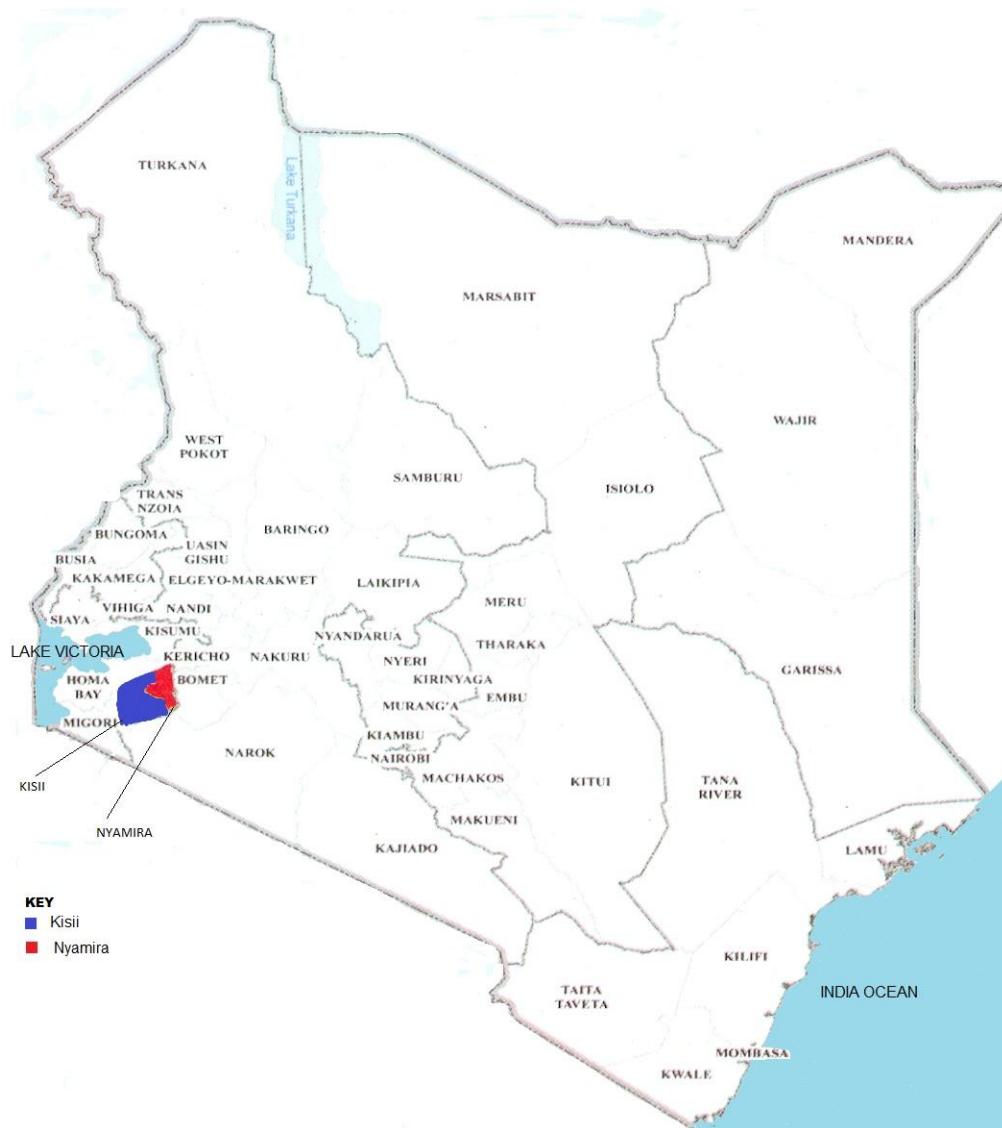
2. After learning English pronunciation:

1.	I find it difficult to pronounce words correctly	SD	D	U	A	SA
2.	I do not expect to be successful in pronunciation task given by English teachers in the class room.	SD	D	U	A	SA
3.	Am now acquiring further knowledge on Pronunciation	SD	D	U	A	SA
4.	I can now speak fluently in English	SD	D	U	A	SA
5.	I expect to perform well in other subjects	SD	D	U	A	SA
6.	Am able to work independently	SD	D	U	A	SA
7.	I expect to apply pronunciation skills in other situations in life.	SD	D	U	A	SA
8.	I find learning pronunciation is in itself rewarding	SD	D	U	A	SA
9.	I am now satisfied with the way I learn pronunciation	SD	D	U	A	SA
10.	I no longer feel uneasy during English pronunciation lessons.	SD	D	U	A	SA
11.	I was satisfied with the way pronunciation was taught in classroom.	SD	D	U	A	SA
12.	I am not satisfied with my performance in pronunciation assignments and tests.	SD	D	U	A	SA
13.	I found learning motivating and time saving	SD	D	U	A	SA
14.	I would like to have more such classes	SD	D	U	A	SA
15.	I now feel confident and competent in using computer to learn language in the classroom	SD	D	U	A	SA
16.	I do not feel confident when speaking in English.	SD	D	U	A	SA
17.	I still have difficulties in pronunciation	SD	D	U	A	SA
18.	I no longer enjoy speaking in English	SD	D	U	A	SA
19.	I would not like to have such classes again	SD	D	U	A	SA

APPENDIX 5

A MAP OF KENYA SHOWING THE EXACT LOCATION OF STUDY

Figure 3: A Map Showing the Location of Study



Source: Adapted Akama J.S, 2014: 18; adapted from Kenyan Government, 2013