

**UNIVERSITY OF EDUCATION, WINNEBA**

**USING ICT TO IMPROVE THE TEACHING AND LEARNING OF ENGLISH  
GRAMMAR IN NINGO SENIOR HIGH TECHNICAL SCHOOL**

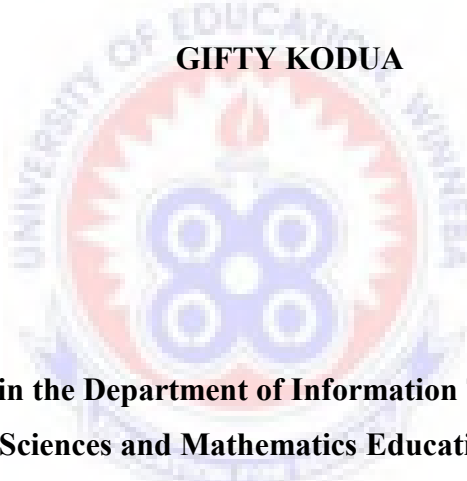


**MASTER OF SCIENCE DISSERTATION**

**UNIVERSITY OF EDUCATION, WINNEBA**

**USING ICT TO IMPROVE THE TEACHING AND LEARNING OF ENGLISH  
GRAMMAR IN NINGO SENIOR HIGH TECHNICAL SCHOOL**

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**A dissertation in the Department of Information Technology Education,  
Faculty of Applied Sciences and Mathematics Education, submitted to the School  
of Graduate Studies in partial fulfilment  
of the requirements for the award of the degree of  
Master of Science  
(Information Technology Education)  
in the University of Education, Winneba**

**MAY, 2021**

## DECLARATION

### STUDENTS' DECLARATION

I, **KODUA GIFTY**, declare that this dissertation, with the exception of quotations and references contained in the published works, which have all been identified and duly acknowledged, is entirely my own original work, and has not been submitted, either in part or whole for another degree elsewhere.

SIGNATURE: .....

DATE: .....

### SUPERVISOR'S DECLARATION

I hereby declare that the preparation and presentation of this work was supervised in accordance with the guidelines for supervision of dissertation as laid down by the University of Education, Winneba.

**DR. EBENEZER BONYAH**

SIGNATURE: .....

DATE: .....

## **DEDICATION**

This work is dedicated to the entire Kodua family and all friends.



## ACKNOWLEDGEMENTS

I wish to express my sincere gratitude to my supervisor, Dr. Ebenezer Bonyah who in spite of his numerous schedules and engagement in both academic and social tasks, read through this research and made valuable comments and suggestions which have led to the successful completion of this work.

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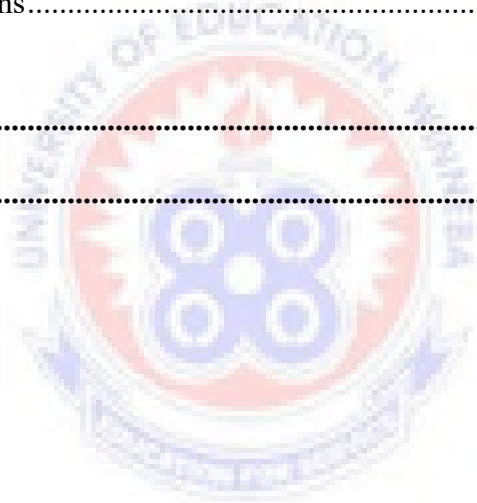
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## LIST OF ABBREVIATIONS

ICT	-	Information and Communications Technology
ICTs	-	Information Communication Technologies
CALL	-	Computer-Assisted Language Learning
CAL	-	Computer-Assisted Learning
CALT	-	Computer-Assisted Language Teaching
WASSCE	-	West African Senior School Certificate Examination
ICT4AD	-	ICT for Accelerated Development
UNESCO	-	United Nations Educational, Scientific and Cultural Organization
EFL	-	English as a Foreign Language
ELESP	-	English Language Education Study Program
MLC	-	Multimedia Language Courseware
E-Learning	-	Electronic Learning
M-Learning	-	Mobile-Learning
E-mail	-	Electronic Mail
www/w3	-	World Wide Web
PDA	-	Personal Digital Assistant
WBT	-	Web-Based Training
PC	-	Personal Computer
CD-ROM	-	Compact Disc Read-Only Memory
MALL	-	Mobile-Assisted Language Learning
MP3	-	Moving Picture Experts Group Audio Layer 3
MP4	-	Moving Picture Experts Group Layer 4
TV	-	Television
SHS	-	Senior High School

- SPSS - Statistical Package for Social Science
- LCD - Liquid Crystal Display
- DVD - Digital Versatile Disc



## ABSTRACT

The major problem in English Language which has contributed to the poor performance of students is how to cope with challenges of grammar, in general, and concord, in particular (Mireku-Gyimah, 2008). In contemporary society, however, learning has been rendered less stressful; thanks to the Internet and its numerous applications (Pradeep , S, & Bhupathi , 2016). This study sought to find out the effect of Computer-Assisted Language Learning (CALL) on students' performance in English grammar, specifically subject-verb agreement. The study employed quasi-experimental design to compare two groups of learners (experimental and controlled groups) in the second-year level of Ningo Senior High Technical School. Cluster sampling technique was used to select sixty (60) students from the second-year classes for this study. Each group; the experimental and the controlled groups, was made up of thirty (30) participants. Aptitude test and questionnaire were the main instruments used to obtain the research data. Statistical Package for Social Science (SPSS) was the main tool used to collate the data and perform the analysis. The results of the experimental group show higher level of achievement than the controlled group. Also, the experimental group's attitude towards CALL-an online video tutorial, was positive since their interest was aroused throughout the teaching and learning process. The study recommends that curriculum planners integrate into the various academic disciplines the use of ICT tools to supplement the traditional classroom teaching and learning. Again, future researchers of this field should consider how ICT can be used to ease the teaching and learning of other aspects of English Grammar as well as other subjects of study in senior high schools in Ghana.

## CHAPTER ONE

### INTRODUCTION

This chapter presents the background of the study which describes the circumstances leading to the problem, statement of the problem, purpose of the study, study objectives, research questions, significance of the study, delimitation of the study, limitation of the study and organization of the study.

#### 1.1 Background of the Study

In this 21st century English language teachers need to create a conducive environment to make the teaching and learning of grammar meaningful. English language is an effective means for international communication across the world hence the need for teachers to transform teaching and learning from old method of a teacher-centred to a student-centred especially the grammar aspect which is the essential skills through which writing and speaking skills is expressed (Muhammad, Munir & Mushtaq, 2017). English grammar has so far become one of the problems faced by language learners (Ni Ketut & Ingatan , 2016) but the advancement of technology has made room for teachers to enrich the teaching of English grammar in secondary schools to enhance students better understanding (Arumugam & Abdul , 2013).

The 2018 Chief Examiners' Report of the West African Senior School Certificate Examination (WASSCE) for Languages stated that, “poor grammar and spelling errors manifest in candidates’ responses to questions” (p. 12). One of the suggested remedies given was “Emphasis should be placed on spelling drills and teaching of grammar to equip candidates with enough knowledge to tackle questions well” (p. 12). It is thus obvious that even when candidates are not able to perform well in other subjects such

as Social Studies, Integrated Science and Mathematics, it will still be partly related to students' poor performance in English grammar. This is because almost all other subjects are taught in English and instructions to questions are written in English. Hence proper understanding and usage of the language is mandatory for academic progress.

There has been a considerable amount of research that agree that Information and Communications Technology (ICT) plays a critical role in the teaching of English as a second language (Çakici, 2016). In reference to the core ICT syllabus for senior high schools in Ghana, one of its general aims was to “use ICT as a tool for learning in other subjects”. Mohammad , Ali, Ghulam and Shahzad-ul-Hassan (2018) concluded that students view grammar as a boring subject in learning because of its numerous rules, but now ICT presents these types of activities interesting in traditional classrooms as well as outside the class. Drawing teachers' attention to this is likely to bring a tasting solution to the age-old problem.

In the trend of learning English language (grammar, speaking and pronunciation, writing), Computer-Assisted Language Learning (CALL) can be used to enhance better understanding (Ali , Danial , & Mahboubbeh, 2015). Computer-Assisted Language Learning in teaching and learning of English as a second language helps both teachers and students to use computer and its associated resources such as the Internet, websites, computer software, Microsoft PowerPoint Presentation, audio and videos (Mohammad , Ali, Ghulam , & Shahzad-ul-Hassan , 2018) including CD-ROMs containing interactive multimedia and other language exercises, electronic reference materials such as online dictionaries and grammar checkers to improve grammar skills (Chapelle, 2010).

In Ghana, a lot of research has been done on using ICT to teach various subjects in senior high schools. For instance, Agyemang and Mereku (2015), Buabeng-Andoha and Issifub (2015) and Boni (2018) conducted a study to investigate into ICT integration in SHS in Ghana. In studying literature, little is done addressing mistakes students make in English grammar through the use of CALL. This research believes that the integration of Computer-Assisted Language Learning in the teaching of English Grammar, specifically subject-verb agreement at Ningo Senior High Technical School could enhance learners' understanding as well as accepted usage of the English language in official settings such as business and any other public platforms.

### **1.2 Statement of the Problem**

“In English, as in many other languages, one of the grammar rules is that subjects and the verbs must agree both in number and in person” (Chele, 2015, p. 33). Students speaking and writing without obeying the rules cut across many countries who use English as a second language at the various educational levels ( Tafida & Okunade, 2016).

One major problem in English Language which has contributed to the poor performance of students is their level of grammar in general and in agreement between subjects and verbs (Bayiri, 2018). English Language and Social Studies teachers in Ningo Senior High Technical School usually complain of students' sentence structure and poor spellings when responding to essay questions. This had been confirmed by the researcher through verbal interaction with students.



The appropriateness of teaching methods and tools would enable students feel at ease in learning English grammar ( Akowuah, Kyei, & Patnaik, 2018). This study seeks to find out the effect of Computer-Assisted Language Learning (CALL) on students' performance in English grammar, specifically subject-verb agreement.

### **1.3 Purpose of the Study**

The purpose of this study is to bring into light the significance of ICT in the teaching and learning of English grammar. This research seeks to find out the effect of Computer-Assisted Language Learning (CALL) on students' performance in English grammar, specifically subject-verb agreement.

### **1.4 Specific Objectives of the Study**

The research will be guided by the following objectives.

1. To equip students with the skills of using Computer-Assisted Language Learning (CALL) to improve their performance in subject-verb agreement an aspect of English grammar.
2. To find out the attitude of students towards the use of Computer-Assisted Language Learning (CALL) to improve their grammar skills, specifically subject-verb agreement.

### **1.5 Research Questions**

1. How can students be equipped with the skills of using Computer-Assisted Language Learning (CALL) to improve their performance in subject-verb agreement an aspect of English grammar?

2. What is students' attitude towards the use of Computer-Assisted Language Learning (CALL) to improve their grammar skills, specifically subject-verb agreement?

### **1.6 Significance of the Study**

This research exposed students of Ningo Senior High Technical School to the numerous resources available on the Internet which resulted in helping them to improve on their performance in academic output and spoken English through the proper use of subject-verb agreement. Teachers would be reminded of the constructivism approach of learning where students are placed at the centre of teaching and learning process through the use of ICT. Again, this study would be helpful to curricular designers to enable them integrate ICT as a learning tool into the English language syllabus. Furthermore, the study would encourage future researchers to investigate how ICT can be used to teach other aspects of English Language as well as other subjects of study at the senior high school level.

### **1.7 Delimitation of the Study**

This study was conducted using second year students to represent the whole students' population in Ningo Senior High Technical School. Moreover, the researcher focused on how Computer-Assisted Language Learning (CALL) can be used to enhance effective teaching and learning of subject-verb agreement as an aspect in English Grammar due to time constraints. Again, there are other grammatical units and language aspects that are equally crying for attention but the researcher investigated only subject-verb agreement.

### **1.8 Limitation of the Study**

The research should have covered students and English teachers in all senior high schools in Ghana but due to time, proximity and other resource constraints the researcher concentrated on second year students in Ningo Senior High Technical schools as the target population for the study.

### **1.9 Organization of the Study**

This study is presented in five chapters. Below are the details.

**Chapter One:** This consists of background of the study, statement of the problem, purpose of the study, objectives of the study, research questions, significance, limitations, delimitations and organization of the study.

**Chapter Two:** This chapter presents the literature review in three headings: theoretical framework, conceptual framework and empirical study to justify the objectives of the study.

**Chapter Three:** This chapter deals with the research methodology which provides information on participant, sampling technique, research design, data collection and analysis tools.

**Chapter four:** This presents the analysis and discussions of the findings.

**Chapter five:** This last chapter consists of summary of findings, conclusions and recommendations.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter reviews the literature related to the study. It analyses and discusses the relevant literature on the effectiveness of ICT on the teaching and learning of English grammar, specifically subject-verb agreement. The literature was reviewed from the theoretical, conceptual and empirical perspectives.

#### **2.2 Theoretical Framework**

This section described the theory that supports the structure of the study. Theory is a structure of fundamental concepts and principles around which knowledge in a field is organized (Abdul , Shadiullah , Allah , & Qamar , 2010). A learning theory provides the framework that helps us to understand how people learn (Picciano, 2017). Though a number of different theoretical positions can contribute to the understanding of English Grammar (subject-verb agreement aspect), this study was done based on constructivism and E- learning theories.

##### **2.2.1 Constructivism Theory**

“And if we believe, as Piaget and Papert do, that knowledge is actively constructed by the child in interaction with her world, then we are tempted to offer opportunities for kids to engage in hands-on explorations that fuel the constructive process” (Ackermann, 2001, p. 2). The approach of constructivists to teaching and learning explains that learners acquire knowledge if they are given ample opportunity to interact and construct meaning for themselves from their environment. The teacher acts as a facilitator and encourages students’ curiosity to discover principles for themselves (Wornyo, 2016). Cognitive constructivism and social constructivism are the two representative types of

constructivism theory. Cognitive constructivists believe learners construct knowledge individually based on their prior experience and new information. Based on cognitive constructivism, pedagogical design must support and satisfy the needs and learning intentions of individual learners. Social constructivists argue that knowledge is the outcome of collaborative construction in a socio-cultural context through interactive processes of information sharing, negotiation, and discussion. Based on social constructivist learning theories, social design of an online learning environment must provide a safe and comfortable space to enable learners share information. Also, the learning environment must offer certain tools so that the students can easily communicate and collaborate with others (Wang, 2008). According to Sjøberg (2010), analysis made by Taber (2006) based on core ideas of constructivist-learning theorists are:

1. Learners actively construct knowledge on their own and not passively received from the outside. Learning is done by the learner and not imposed on him.
2. Learners come to the learning situation with existing ideas about many phenomena.
3. Teachers have to take the learner's existing ideas seriously if they want to change or challenge these.

#### *Piaget's Constructivism and Papert's Constructionism*

“Piaget suggests that children have very good reasons not to abandon their worldviews just because someone else, be it an expert, tells them they're wrong. Papert is interested in how learners engage in a conversation with their own or other people's artifacts, and how these conversations boost self-directed learning, and ultimately facilitate the construction of new knowledge. He stresses the importance of tools, media, and context in human development” (Ackermann, 2001, p. 1). Papert concluded that powerful

means of gaining understanding into a situation is diving deeper rather than looking at it from a distance, that is “connectedness rather than separation” (Ackermann, 2001, p. 8). Piaget and Papert who are both constructivists view learners as the builders of their own cognitive tools, as well as of their external realities. To them, knowledge and the world are both constructed and constantly reconstructed through individual experience.

### **2.2.2 E-Learning Theory**

E-learning theory consists of cognitive science principles that describe how electronic educational technology can be designed and used to promote effective learning (Mayer, Moreno, & Swella, 2015). This theory focuses on minimizing extraneous cognitive load and introducing germane and intrinsic loads at the appropriate level of a learner. Germane cognitive load describes the effort involved in understanding a task and storing it in long-term memory (for example, gaining an understanding in grammatical rules). Intrinsic cognitive load refers to effort involved in performing the task itself (constructing sentences considering the grammatical rules). Extraneous cognitive load refers to the mental effort imposed by the way that task is delivered which may or may not be efficient (identifying correct sentence structure among a lot). According to Wikipedia, one of the empirically principles established under E-learning theory is Multimedia principle/Effect. This place emphasis on using both visual and auditory channels for information processing. The three common elements in multimedia presentations are relevant graphics, audio narration, and explanatory text.

## **2.3 Conceptual Framework of the Study**

Conceptual framework explains the basic concepts of a study considering the literature of previous studies.

### **2.3.1 Meaning of Grammar of a Language**

In English language, grammar rules are very important and have to be mastered by all learners who use English as a second language. According to Cambridge Grammar of English (2002), grammar of a language describes the principles or rules governing the form and meaning of words, phrases, clauses and sentences. It is divided into two components, syntax and morphology. Syntax is concerned with the way words combine to form phrases, clauses, and sentences, while morphology deals with the formation of words. Wilcox (2004) explained grammar as the underlying system of rules for making meaning with language through the formation of words and sentences; the process involves individual phonemes (sounds) which combine to form morphemes (the smallest linguistic units with meaning), which may stand alone as complete words or combine with other morphemes to form complete words. Grammar is a description of the structure of a language and the way in which linguistic units such as words and phrases are combined to produce sentences in the language. As an important element of language and as the essential part of linguistic competence, grammar has a central role in improving learner's language skills and their communicative competence (Meenadevi, 2017). According to Nordquist (2020), the grammar of a language involves basic axioms such as verb tenses, articles and adjectives (in their proper order), how questions are phrased, and much more. "A language without grammar is like a pile of bricks without mortar to hold them together" (p. 1), Nordquist observed.

### **2.3.2 Subject-Verb Agreement (Person and number)**

Agreement is a basic rule of grammar. Subjects and verbs must agree in person and number. In the topic Subject-Verb Agreement, the subject must agree with the verb. Thus, if the subject is singular, the verb used in that sentence should be singular to agree with it; for plural subjects the plural verbs are generally used considering the number of the subject (Al Harun & Abu, 2018).

Subject-Verb Agreement is the backbone of sentence structure in English and refers to the rules of grammar where the subject must agree or match with the verb used in a sentence. This aspect of grammar is a problem area for many learners, most language teachers including the experienced ones find it difficult to teach this aspect of grammar effectively (Ping, 2012). It is obvious that learners make mistakes in both general and sub-general rules of subject-verb agreement in their writing and speaking (Alahmadi, 2019). Learners at all levels of the educational ladder have difficulty writing essays or scripts with minimal or no grammatical errors. Students need to be taken through practical exercises and open discussions on the subject-verb agreement rules to help them internalize the rules for them to be able to perform well in their grammar and usage exercises in order to write essays with minimal grammatical errors (Wornyo, 2016). According to Grissilla and Harwati (2020), language learners always view that plural subject written in phrases are confusing, thus to use the closest subject to the verb to determine whether the verb should be written in singular or plural.



### **2.3.2.1 Basic Subject-Verb Agreement Rules**

In English grammar, subjects and verbs must agree in **number** (singular or plural) and **person** (first, second, or third). Singular subjects take singular verbs and plural subjects take plural verbs. In the present tense, the third person, uses verbs ending in –s with singular subjects. Below are some few rules: (Fowler & Aaron, 2010)

#### ***A verb must agree with its subject in number***

“Singular subjects indicate one and require a singular verb. Plural subjects indicate more than one and require a plural verb” (Glencoe, 2000, p.215). This source illustrated the claim with the following.

#### **Examples**

1. The applicant has experience. (The singular subject ***applicant*** agrees with the singular verb ***has***.)
2. The students have listened intently. (The plural verb ***have*** agree with the plural subject ***students***)

#### ***Subjects and Verbs Separated by Words or Phrases***

The number of a verb does not change when one or more phrases come between a verb and its subject (Fowler & Aaron, 2010).

#### **Examples**

1. The dog in that class is well behaved. (The singular verb “***is***” agrees with the singular subject “***the dog***”, not the phrase ***in that class***).
2. The houses on Apple Street were built two years ago. (The plural verb ***were*** agree with the plural subject ***the houses***, not the phrase ***on Apple Street***).

### ***Compound Subjects Joined by And***

- a. Compound subjects that are joined by **and** are usually treated as plural; therefore, they use plural verbs (Fowler & Aaron, 2010).

**Example:** Jones and Jerry are moving to Accra this afternoon. (The plural subject **Jones and Jerry** agree with the plural verb **are**.)

- b. A compound subject joined by **and** but represents a single idea or person is treated as a unit and a singular verb is used (Glencoe, 2000).

**Example:** Toast bread and tea is my favorite breakfast. (The singular verb “**is**” is used because Toast bread and tea refers to a single dish.)

- c. When the word **each** or **every** precede a compound subject joined by **and**, a singular verb is used (Senn & Skinner, 2001).

**Example:** Every student and teacher has to wear a nose mask. (The singular verb **has** agree with **every**, not *student and teacher*.)

### ***Compound Subjects Joined by Or***

When compound subjects are joined by **either . . . or** or **neither . . . nor**, it may take singular or plural verbs (Fowler & Aaron, 2010).

- a. When both subjects are singular, a singular verb is used; if both subjects are plural, a plural verb is used.

#### **Examples**

1. Either Mensah or Joyce has exam today. (Both **Mensah and Joyce** are singular and agrees with the singular verb **has**.)
  2. Neither titles nor honours are everlasting. (**titles and honors** are plural and agree with the plural verb **are**.)
- b. When one subject is singular and the other is plural, the verb agrees with the subject that is closest to it.

### Examples

1. Neither the books or the pen is closer to the table. (The singular subject *pen* is closest to the verb so the singular verb “*is*” is used.)
2. Either the teacher or the students **are** bringing the books. (The plural subject “*students*” is closest to the verb so the plural verb “*are*” is used.)

### *Indefinite Pronouns as Subjects*

A verb must agree in number with an **indefinite pronoun**. That is pronouns that do not refer to a particular person, thing, or group (Fowler & Aaron, 2010).

- a. Indefinite pronouns that are singular take singular verbs. *anybody, anyone, anything, each, either, everybody, everyone, everything, neither, no one, nobody, nothing, one, somebody, someone, and something.*

**Example:** Everyone in the chapel is invited to the charity benefit. (*Everyone* is always singular and agrees with the singular verb *is*.)

- b. Indefinite pronouns that are plural take plural verbs. *both, few, fewer, many, other/others, and several.*

**Example:** Several students are attending English lesson. (*Several* is always plural and agrees with the plural verb *are*.)

### *Collective Nouns as Subject*

- a. A collective noun which refers to a group as a whole, requires a singular verb. When a collective noun refers to individuals or items that make up the group, a plural verb is used (Glencoe, 2000).

#### **Example 1**

The committee is meeting on Thursday. (*The committee* refers to a single group so the singular verb “*is*” is used.)

The choir sings beautifully. (*The choir* refers to a single group hence a singular verb “*was*” needs to be used.)

### **Example 2**

The committee have met the requirements set by the board of governance. (*The committee* refers to each individual member of the committee so the plural verb *have* is used.)

The team have received their promotion letters (*The team* here refers to each individual in the team so a plural verb *have* is used.)

#### ***2.3.2.2 Factors that Hinders Students from Mastering Subject-Verb Agreement***

In the views of Normazidah, Koo and Hazita (2012), students presume English to be a difficult subject to learn. The situation is blamed on the environment of the students where the use of the mother tongue is so pervasive and impedes progress in assimilating the subject-verb agreement rules in English Language. Also, Quagie (2014), opines that the subject-verb agreement menace has been an age-old problem and it cuts across all the levels of our educational structure due to poor pedagogical approach. He further bemoans the fact that some teachers of English Language do not have required qualification for teaching the language.

#### **2.3.3 Meaning of ICT**

ICT stands for Information and Communications Technology. It is used to describe all devices, networking components, applications and systems that is combined to allow people and organizations (i.e., businesses, nonprofit agencies, governments and criminal enterprises) to interact in the digital world. These technologies include computers, the Internet, broadcasting technologies (radio and television) and telephony (Rouse, 2019).

According to Moursund (2005), Information and Communications Technology (ICT) includes the full range of computer hardware and software, telecommunication and cell phones, the Internet and Web, wired and wireless networks, digital still and video cameras, robotics, and so on. Olaore (2014, p. 155) stated that, “ICT is an example of a technology that is a powerful change agent.”

#### **2.3.4 ICT in Education**

The use of Information and Communications Technology (ICT) in education has increasingly become an essential element in our lives as well as education system in this 21st century (Hernandez, 2017). Information and Communications Technology (ICT) in education is the mode of education that uses information and communications technology to support, enhance and optimize the delivery of information. Improving the quality of education is a critical issue, ICTs can enhance the quality of education by increasing learners’ motivation and engagement, facilitating the acquisition of basic skills, and enhancing teacher training. ICTs such as videos, television and multimedia computer software that combine text, sound and color are transformational tools which when used appropriately, can promote a learner-centred environment (Meenakshi, 2013).

Most tertiary institutions during the lockdown period of COVID-19 pandemic adapted to online teaching and learning and this was possible due to the numerous ICT tools available. According to Shenoy, Mahendra and Vijay (2020), during the COVID 19 lockdown “higher educational institutions in Bangalore opted for online classes” (p. 700). ICT tools used during the lockdown for teaching and learning were Zoom, Google Hangouts, Skype, meet up, Google classrooms, LMS, YouTube, etc.

Moursund (2005, p. 7) in his study stated that, “ICT is a powerful change agent in all of these aspects of our formal educational system” which has proven to be a valuable aid to solve problems and accomplish tasks in education and many other human endeavors.

In 2004, Parliament passed into law Ghana’s ICT for Accelerated Development (ICT4AD) policy, which is currently at various stages of implementation. Among other things the policy requires the use of ICT for teaching and learning at all levels of education. As a result of this policy, ICT courses were introduced in all basic and secondary schools or SHS in Ghana in 2007. The inclusion of ICT at senior high school education level was aimed at the acquisition of basic ICT literacy, developing interest and use ICT for learning in other subjects, acquisition of knowledge for application of ICT in education and business, the use of the Internet to communicate effectively and the ability to follow basic ethics in the use of ICT. It is therefore expected that the knowledge and skills gained will help students to use ICT in almost all their courses at school and to access information for further learning (Danso & Kesseh, 2016).

### **2.3.5 ICT in Teaching and Learning Environment**

Several studies have revealed the usage of ICT tools in the teaching and learning process as more beneficial (Alkaromah, Fauziati, & Asib, 2020). ICT has changed the role of teachers from knowledge transmitters to facilitators. It allows teachers to bring the whole world into classroom activities, especially the concept of online programmes which enable teachers and learners to communicate and collaborate without boundaries (Nnaekwe & Ugwu, 2019). According to Chen, Jose and Katherine (2015), Information and Communications Technology (ICT) has been identified as one of the crucial factors that enhance teaching and learning as well as helping students to learn worldwide.

UNESCO, many international organizations, and many government organizations emphasize the importance of ICT and encourage its integration into the teaching process.

Learning using ICT is more than learning through memorization. It allows learners to experience their learning processes, being interactive, enjoyable and fun (Suryani, 2010).

#### ***2.3.5.1 ICT Tools Used for Teaching and Learning***

Ghavifekr, Kunjappan, Ramasamy and Annreetha (2016) in their study described ICT tools as technology-based tools such as computer, laptop, LCD, digital photocopy machine, digital audio and video devices, digital camera, scanner, DVD player and multimedia projector which are used in schools to enhance teaching and learning.

Pradeep and Bhupathi (2016) in their study categorized ICT tools which is commonly used in higher education learning environment as M-learning, E-Learning, Teleconferencing, Interactive multimedia and Web-Based. M-Learning (Mobile-Learning) is the delivery of learning to students who are not keeping a fixed location through the use of mobile or portable technology. The technologies commonly employed in this area are mobile phone, PDA's, digital audio players, digital cameras, voice recorders and pen scanners etc. This is a complementary activity to both e-learning and traditional learning. E-Learning is an approach to learning and development in which learning is taken away from traditional classroom or campus into an online form. Teleconferencing enable students as well as teachers to have conference despite their location. Web-Based Training (WBT) uses web-based technologies for the purpose of training. Several WBTs offer learners the opportunity to interact and

collaborate with peers in chat groups or participate in online seminars. Interactive Multimedia is the learning activities by presenting information in multimedia modalities such as Microsoft PowerPoint, etc. This learning activities enable students to receive materials and training through E-mail, chat-forum, or video conference etc. ICT tools that are used for teaching and learning observed by Nnaekwe and Ugwu (2019) in their study were video conferencing/teleconferencing, World Wide Web (www/w3/ the web) and Web 2.0. Video conferencing/teleconferencing: This is a two-way communication system which involves the use of television, video and sound technology (webcam) between people in different locations. This can be used to give and receive lectures irrespective of the location of teachers or learners.

World Wide Web (www/w3/ the web) is an Internet resource developed to help publish, organize and provide access to information on the Internet. Web 2.0: This describes World Wide Web sites that uses technology beyond the static pages of earlier web sites. It allows users to interact, collaborate and chat with each other both synchronously and asynchronously. Social media, blogs, wikis, video sharing are all based on Web2.0 technology.

Anderson (2010) also gave interactive whiteboards, virtual excursions/virtual field trips/web tours, videoconferencing, mobile / m-learning, as ICT tools for classroom transformation. Interactive whiteboards are electronic boards which allow students in classrooms to see what is running on a connected computer through a projector. Virtual excursions/virtual field trips/web tours on the other hand, are various terms used to describe organized student online learning experiences around visits to different website with the aid of audio conferencing or videoconferencing facilities.



### ***2.3.6 ICT in Teaching and Learning English as a Foreign Language***

In this 21st century, the use of ICT for teaching and learning a foreign language is unavoidable as it is now part of our daily life. Teachers can use computers and the Internet to get access to YouTube video clips, which help learners with native pronunciation and also support teachers who do not have confidence with their own language skills (Asnawi , Yunistrina , & Rena , 2018). In English language teaching context, the existence of ICT enhances the learning environment to be more attractive and meaningful. It also helps to communicate, share and work collaboratively in local and global environment, develop new thinking and learning skills to supports learning (Alkaromah, Fauziati, & Asib, 2020). According to Mishra and Wasnik (2020), teachers spend a lot of time using the conventional methods of teaching which is considered as boring by students. The use of ICT in English Language classrooms makes learning environment more interesting in order to overcome this challenge. Computer-Assisted Language Learning (CALL) is an ICT tool used to enhance language teaching.

### **2.3.7 Computer-Assisted Language Learning (CALL)**

This is an approach to teaching and learning in which the computer and computer-based resources such as the Internet are used to present, reinforce and assess material to enhance language skills. According to Tafazoli, Parra and Abril (2018), the term CALL explains the application of Information and Communications and Technology (ICT) for teaching and learning foreign languages. Previous studies on the topic CALL suggest that usage of computer and its related resources used as a tool in teaching/learning second language has lots of benefits if tailored to students' needs (Querales, 2014). Software, multimedia computing, the Internet, and the World Wide Web have provided

an incredible boost to Computer-Assisted Language Learning in the developed world ( Sanja, Norbert , & Zdravko , 2004). All language centres agree that it is not possible to create highest interactive learning environments without CALL (Koorosh & Afshin , 2012). CALL is meant to supplement face-to-face language instruction and not to replace it. Terms such as technology-enhanced language learning, computer-assisted language instruction or computer-aided language learning can be used in place of CALL.

### ***2.3.7.1 Brief History of CALL***

According to Barzan , Adel , Ali and Shirzad (2016) and Padi (2016), CALL courseware has witnessed transformation throughout its history. The development was put into three categories corresponding to the influence of the behaviorists' theory, the cognitive constructionists' theory and the socio-cultural constructionists' theory. Behavioristic CALL began with the advent of CALL implemented in the 1960s and 70's and declined in the late 1970s; This was based on the behaviorist theory of learning and it is recognized with repetitive language drills. The computer was used as a tutor, presenting drill exercises without feed-back component, i.e., not including interactive components. Communicative CALL began in the late 1970s and declined in the late 1980s. This focused more on using forms than on the forms themselves. These programs provided skill practice in a non-drill format (e.g. language games, reading, and text reconstruction). In this phase the computer was still used as a tutor but gives students choices, control and interaction. Integrative CALL began in the late 1980s. The most recent development in the area of CALL is the integrative CALL. This is based on multimedia computers and the Internet that combine variety of media such as text, sound, pictures, video, and animation in order to convey a stimulating learning

environment. The resources can be accessed from a PC, using CD-ROMS or the Internet. Interactive Multimedia is the learning activities which present information in multimedia modalities such as Microsoft PowerPoint through digital projector with or without the Internet.

### ***2.3.7.2 Technologies Used in CALL Instruction***

#### ***Software***

Software used in CALL environment can be designed specifically for English as a second language learning or adapted for this purpose. Most language textbook publishers offer educational software to support a paper textbook or to stand alone for self-study. Most programmes designed for language learning are tutorials. There are programmes not designed specifically for language learning but can be adapted for this purpose.

- a. **Specific software:** applications designed to develop and facilitate language learning, such as CD-ROMs, web-based interactive language learning exercises/quizzes.
- b. **Generic software:** applications designed for general purposes such as word-processors, presentation software (*PowerPoint*), and spreadsheet (*Excel*) can be used to support language learning.

#### ***Internet-based***

Internet activities vary considerably, from online versions of software such as online dictionaries, online encyclopedias, online concordances, news/magazine sites, e-texts, web-quests, web publishing, blog, wiki, etc. to computer-mediated communication (synchronous- online chat; asynchronous - email, discussion forum, message board) applications (Barzan , Adel , Ali , & Shirzad , 2016).

### ***Mobile-Assisted Language Learning (MALL)***

This involves language learning that is assisted or enhanced through the use of handheld mobile devices. MALL is a subset of both Mobile Learning (m-learning) and Computer-Assisted Language Learning (CALL). MALL support students' language learning with the increased use of mobile technologies such as smart phones, MP3 and MP4 players, PDAs , etc. According to Negin & Saman (2019), there has been a growing interest in using smartphones as a form of Mobile-Assisted Language Learning (MALL) among English as a foreign language (EFL) learners. In this type of learning, learners are not restricted to the traditional classroom alone but learn at ease at everywhere. Rosell-Aguilar (2017), in his study, listed three categories of mobile apps for language learning. Apps designed as language learning tools (*DuoLingo* and *Busuu*, *Rosetta Stone*, *Speakeasy*, *Babbel*), apps not designed for language learning but useful to language learners (communication tools such as email / messaging /telephone / video conferencing, etc.) and dictionaries and translators (dictionary and phrasebook apps, *Google Translate*, *iTranslate*) were identified.

#### ***2.3.7.3 Advantages of CALL***

The use of computer technology in the field of language teaching and learning has been fascinating and positive for language learners since its advent (Pathan, 2012). According to Koorosh and Afshin (2012), research conducted in the area of CALL has documented many positive effects on students' achievement and learning. Below are few advantages.

#### **Motivation**

The use of CALL within or outside the classroom make the class more interesting. One way a programme or activity can promote motivation in students is by personalizing

information. For example, having animated objects on the screen, providing practice activities that incorporate challenges and curiosity. Nur and Melor (2019) in their study concluded that online language games will help teachers to create fun learning environment to arouse learners' interest and motivation as well as to suit their proficiency level and learning styles. CALL motivates students to go beyond initial mastery and practice activity until they become automatic (Ravichandran, 2000).

### **Adapting learning to the student**

Adapting learning means student controls the pace of the learning and make choices in what and how to learn, skipping unnecessary items or doing remedial work on difficult concepts. Such control makes students feel more competent in their learning. Increasing the autonomy of the language learner is another special characteristic of CALL-based writing instruction, that is, learners are not dependent on teachers or other members of the class in selecting the types of materials, the time and place of presentation pace (Barzan , Adel , Ali , & Shirzad , 2016).

### **Authenticity**

Authenticity in language learning means the opportunity to interact in one or more of the four skills (listening, speaking, reading, writing) by using or producing texts meant for an audience in the target language, not the classroom. Students learn faster and better with computer-mediated communication. In networked computer environments, students have a conscious feeling of being members of a real community. It presents material on an individualized basis, allowing students to proceed at their own pace (Eslit, 2017).

### **Critical thinking skills**

The use of CALL in classrooms is generally reported to improve self-concept and mastery of basic skills, more student-centred learning and engagement in the learning

process, more active processing resulting in higher-order thinking skills and better recall, gain confidence in directing their own learning. It equips students with analytical skills and boost their ego in the pursuit of knowledge and wisdom.

### **Feedback**

According to Ali , Danial and Mahboubeh (2015), Computer Assisted Language Learning materials provide feedback which is considered to be a crucial feature in any pedagogical practices based on students' knowledge and their specific needs in language learning. It can judge and evaluate students' performance and reward them with scores and congratulatory messages (Eslit, 2017).

## **2.4 Empirical Study**

This section presents the conclusion previous researchers had drawn on using ICT in teaching and learning of English grammar as well as subject-verb agreement.

### **2.4.1 Errors Made by Students in Subject-Verb Agreement**

Farhan and Abu (2018) conducted a study at the University of Bangladesh on errors on subject-verb agreement using qualitative method. Data were collected from scripts of fifty (50) students at the tertiary level and these three common errors were identified.

1. Errors regarding third person singular number in agreement with verb.

Example: A student always **attend** classes.

2. Errors regarding third person plural number in agreement with verb.

Example: The library works are also available in all universities which **helps** everyone to concentrate.

3. Common errors related to disagreement of verbs with compound subjects.

Example: Bengali drama and Hindi serial **is** a common TV program in our South Asia.

A study on grammatical errors of subject-verb agreement in writing was conducted at Taibah University, Saudi Arabia by Alahmadi (2019) where data were collected throughout the second semester and students (intermediate-upper intermediate level) were asked to write eight different paragraphs on eight different topics taken from the reading and writing books. The study revealed the following grammatical errors related to subject-verb agreement:

1. Subject-Verb Agreement errors with singular subjects.
2. Subject-Verb Agreement errors with plural subjects is compounded with or separated from the subject.
3. Subject-Verb Agreement errors with the main verb or auxiliary verb.

#### **2.4.2 Teaching English Grammar Using CALL**

The computing technology explosion has of late influenced social methods of maneuver and education delivery is not an exception (Laura , Gary , Osama , & Craig , 2017). Every sector of human society is therefore making frantic effort to resort to the use of computer technology to facilitate the production of goods and service. In a study by Mohammad , Ali, Ghulam and Shahzad-ul-Hassan (2018), it was observed that the use of Computer-Assisted Language Teaching (CALT) via the deductive approach created attractive and interesting learning environment and this helped learners to grasp better the concept of subject-verb agreement. The study which was conducted in Al-Majma'ah University in Saudi Arabia involving sixty-nine (69) undergraduate students of level 3 used the quasi-experimental research design.

The process involved splitting the sample respondents into two groups. The obvious aim was to ascertain if the use of the CALT could yield any impact in learning. After the analysis of the two groups, there was a significant improvement in the output of the experimental group as against the controlled group. In addition, the attitude of the

experimental group toward learning English Language improved significantly according to their conclusion.

Akin to the Saudi situation, Ghanaian students struggle to internalize the subject-verb agreement concept (Mireku-Gyimah, 2008). The researcher therefore decided to investigate the situation to see whether really there is a problem to solve and whether computing technology could be deployed to improve the situation in Ningo Senior High Technical School.

Barzan , Adel , Ali and Shirzad (2016) in their study investigated into the impacts of Computer-Assisted Language Learning (CALL) on EFL learners' grammar of writing skill. The experimental group made use of CALL package to improve their grammatical ability while the controlled group were taught by traditional package. The data obtained from the post-test revealed that the experimental group improvement in grammar of writing was as a result of using the CALL based instruction. Harwati , Karmila and Melor (2019) conducted a study at Suburban secondary school, Malaysia which aimed at exploring the effectiveness of online language games in improving ESL learners' grammar. The participants for the study were thirty (30). The research design used was quasi-experimental and aptitude test was used as a data collection instrument. The study concluded that learners are able to obtain better results when they learn grammar using online language games. This is because motivation and fun in playing the game resulted in better understanding of the concept.



### **2.4.3 Equipping Students with the Skills of Using CALL**

Purnawati and Ifan (2019) in their study conducted on designing ICT competences-integrated syllabuses of grammar courses for English Language Education Study Program (ELESP), concluded that students should be trained to use available digital equipment such as smart phones, tablets, etc. to access online exercises appropriate to their individual needs as well as recommended appropriate online materials to them.

Naba'h (2012 ) conducted a study to investigate the impact of Computer-Assisted Grammar teaching on the Jordanian students' grammar performance to find out the impact of a software program on students' performance. The researcher designed an achievement test for both experimental and the controlled groups. Based on the results of the experimental group, he concluded that CALL instruction encourages students to work on their own to devise language activities.

### **2.4.4 Students' Attitude Towards the Use of CALL**

Syam (2017) investigated the effectiveness of mistake buster technique in improving the English grammar mastery. The research utilized a quasi-experimental research design. Thirty-one (31) students in experimental group and thirty-one (31) students in controlled group were used for the study. The research data were obtained through aptitude test and questionnaire. The result of the findings shows that movies are effective in improving the vocabulary achievement of learners. The findings in the questionnaire given to them after the intervention show that students were very interested in the use of mistake buster technique.

Hashemyolia, Ayub and Moharrer (2015) studied the effectiveness of Multimedia Language Courseware (MLC) on secondary students' motivation in five dimensions of intrinsic, extrinsic, self-efficacy, relevance and anxiety in a public school in Iran. The

study employed quasi-experimental method using aptitude test as a data collection instrument involving sixty-two (62) participants in two groups; thirty-one (31) in an experimental group and thirty-one (31) in a controlled group. The analysis of the study from post-test conducted revealed that the majority of the students in the experimental group had a high positive perception towards using the courseware and were highly motivated. A study conducted by Negin and Saman (2019) to investigate the impact of the Mobile-Assisted Language Learning (MALL) applications on the grammatical proficiency among the EFL learners in Iran indicate that learners' interest and competency is enhanced with the intervention of language software. Forty (40) participants were involved. The research design used was quasi-experimental. The findings of the study suggest that MALL applications such as Telegram can be effective for grammar learning in EFL classes. The interview results also confirmed that learners' motivation increases to a large extent when they use MALL applications for learning EFL.

Tafazoli, Parra and Abril (2018) conducted a study to compare the attitude of Iranian and non-Iranian English language students' attitudes towards Computer-Assisted Language Learning (CALL). The findings of the study revealed that both Iranian and non-Iranian English language students hold positive attitudes towards CALL.

## CHAPTER THREE

### METHODOLOGY

#### 3.1 Introduction

This chapter outlines the research methods that were used to explore the research questions. The major components of this chapter are the research design, population, sample and sampling technique, ethical consideration, research site, data collection equipment, data collection procedure and analysis equipment.

#### 3.2 Research Design

In order to ensure the success of the study, an appropriate research design was selected for this study. According to Akhtar (2016), a research design is the conceptual blueprint within which research is conducted. It is considered as the “glue” that holds all the elements in a research project together. In order to answer the stated research questions and objectives, this study employed quasi-experimental design. This involves comparing the outcomes of one group receiving a treatment (experimental) to other group who receive either nothing or an alternative real treatment (controlled) ( Bruce , 2012). Two groups of learners in the second-year class of Ningo Senior High Technical School totaling sixty (60) were used for the study (controlled and experimental). The experimental group was taught using Computer-Assisted Language Learning (CALL)-an Online Video Tutorial on subject-verb agreement rules and the controlled group was taught through whiteboard and textbook method. Both were taught in a traditional classroom.

Both groups were given pre-test and post-test on the topic subject-verb agreement. The intervention (online video tutorial) was implemented on the experimental group after which questionnaire was given to them to find out the effectiveness of the online video tutorial on students' performance.

### **3.3 Population**

A population refers to all the individuals or units of interest for research investigation (Hanlon & Larget, 2011). This study seeks to find out the effect of Computer-Assisted Language Learning (CALL) on students' performance in English grammar, specifically subject-verb agreement. The population was made up of Ningo Senior High Technical School students. It is a three-year public high school in the Ghanaian education system. At the end of the third year, students sit for the West African Secondary School Certificate Examination (WASSCE) organized by The West African Examination Council. Successful candidate could proceed further into tertiary institutions like the universities and colleges. This school was used because the researcher teaches ICT in the school and has unimpeded access to the students. It would have been ideal if all the students were included in the research because the problem of subject-verb agreement affects the entire students' body. However, due to resource constraints, the researcher sampled out the second-year students for this research. The reason for selecting the second-year students was that, the topic of consideration (subject-verb agreement) is in the second-year course outline of the English Language syllabus for SHS, 2010, CRDD.

### **3.4 Sampling and Sampling Technique**

In order for researchers to answer research questions, there is a need to select a sample to represent the entire population. A sample of a study is a group of relatively smaller number of people selected from a population for investigation purpose. This sampling

is meticulously done to ensure fair representative of the population from which it was culled. The members of the sample are called participants (Mohsin , 2016). Cluster sampling technique was used to select sixty (60) students from the second-year classes for this study. Sanjoy (2018) and Saifuddin (2009) explained this type of sampling technique as the division of the entire population into sub-groups called clusters. The clusters in the population are usually selected by simple random sampling and all units (elements) in the selected clusters are investigated (one-stage cluster sample) or the units in the selected clusters are sampled through simple random or systematic sampling (two-stage cluster sample). In this study the researcher used two-stage cluster, thus the second-year classes were grouped based on programme after which systematic sampling was used to select the participants from each cluster. The selected students were again divided into two groups using simple random sampling through “Yes” and “No” written on pieces of paper. Thirty (30) participants each for experimental and controlled groups. Participants in both groups comprise of sample from each programme or cluster.

### **3.5 Ethical Consideration**

In most research studies, human subjects participate in the research process. This is the reason why due consideration must be taken on how to deal and relate with them. It is the responsibility of the researcher to design a study which will not infringe on the rights and safety of respondents ( Akaranga & Makau, 2016). The policy of voluntary participation was strictly adhered to during the data collection phase of this study. The significant ethical issues considered in this research process include participants’ consent, anonymity (keeping secret by not identifying the ethnic or cultural background of respondents as well as refraining from referring to participants by names),

confidentiality and voluntary participation. Participants were made aware of the aim of the study to enable them to participate with clear conscience. For the purpose of confidentiality, participants were asked not to write their name and class on pre-test, post-test and questionnaire scripts.

### **3.6 Research Site**

The study site was Ningo Senior High Technical School located at Old Ningo in the Ningo-Prampram District of Greater Accra Region. The students' population based on the year groups are first year (529), second year (562) and third year (502) totaling (1, 592). General Arts, Home Economics, Technical, Business, Visual Arts, General Science and Agriculture Science are the programmes offered in the school. English Language is one of the core subjects taught in the school which has grammar as a component of it and subject-verb agreement as one of the topics in the second-year grammar syllabus for SHS. With reference to the statement of the problem for this study, English Language and Social Studies teachers in Ningo Senior High Technical School usually complain of students' sentence structure and poor spellings when giving responses to their essay questions. This had been confirmed by the researcher through verbal interaction with students which led to the decision to embark on this study in order to find out the effect of Computer-Assisted Language Learning (CALL) on students' performance in English grammar, specifically subject-verb agreement.

### **3.7 Data Collection Instrument**

Data gathering is crucial in every research. This research employed two (2) instruments, namely, aptitude test and questionnaire for the collection of data.

#### **3.7.1 Aptitude Test**

Aptitude is an important characteristic of an individual which can predict success in a course of study or career. It also reflects current behaviours and tendency of learning (Muhammad & Ahmad , 2011). The measurement of aptitude is necessary because it provides sufficient information about the potentialities of an individual. Aptitude test is used to predict the future success of students' educational and vocational careers which tend to help them improve on certain special traits (Ghaleb , 2015). Both controlled and experimental groups were given pre-test after which the intervention was implemented on the experimental group. Post-test was organized for the two groups (controlled and experimental) after the intervention in order to find out the effectiveness of CALL-an Online Video Tutorial on students' performance with respect to subject-verb agreement. The pre-test and post-test consisted of twenty (20) test items. Three (3) and four (4) items for each rule were specified in the test.

#### **3.7.2 Questionnaire**

A questionnaire is a written or typed document used to obtain information from study subjects. A questionnaire enables quantitative data to be collected in a standardized way so that the data are internally consistent and coherent for analysis. According to Mohammed (2014), Bukhari (2019) and Bidhan (2010), structured, unstructured and semi-structured are the types of questionnaires used for research. A structured questionnaire has a fixed alternative and gives no room for respondents to express themselves beyond what the researcher has specified. Questions are commonly closed ended and scalable. Most of the quantitative data collection operations use structured

questionnaires. Unstructured questionnaire made use of open-ended questions and the respondents are not restricted to a fixed choice. The respondents answer the questions in their own words. Semi-structured questionnaire is fixed to some extent but there is room for the respondents to give additional answers or explanations for the questions. Questions are closed ended but open-ended questions can be added to accomplish certain goals.

There are two (2) major types of questions in a questionnaire. They are closed-ended questions (structured): Respondents' answers are limited to a fixed set of responses. One or more options from pre-determined set of responses are Yes/No questions, Multiple choice and Scaled questions (Strongly disagree, Disagree, Don't know, Agree, Strongly agree). Open-ended questions (unstructured): The options or redefined categories are not suggested in this type of questions rather, respondents reply in their own words without being constrained by a fixed set of possible responses (Roopa & Rani, 2012). To measure the attitude of the experimental group towards Computer-Assisted Language Learning (CALL), a structured questionnaire was designed that comprised three (3) personal details questions, six (6) questions on students' attitude towards Computer-Assisted Language Learning and four (4) questions on Computer-Assisted Learning. Close ended type of questions consisting of a four (4) scaled type of questions (Strongly Agree, Agree, Disagree and Strongly Disagree) was used.

### **3.8 Data Collection Procedure**

To investigate the answers of the research questions, the researcher used Online Video Tutorial on subject-verb agreement rules on the experimental group while the controlled group was taught through whiteboard and textbook method. The controlled group had their lessons in a traditional classroom and learned from textbook and whiteboard only. The experimental group also was settled in a traditional classroom and watched a



PowerPoint Presentation with downloaded online video tutorial on subject-verb agreement rules as a supplementary tool to enhance teaching and learning. Both groups were taught for four (4) weeks; two (2) periods per week. A total of six (6) rules with their sub-rules were taught to both groups and on the 4<sup>th</sup> week students were taught how to download their own tutorial from the Internet to enhance their learning. One rule was taught during each lesson. During each lesson, the experimental group played the tutorial on a single rule after which they discussed the video among themselves whilst the researcher observed in order to ensure students establish the fact on the rules. The controlled group was taught the same rules in the classroom through face-to-face instruction using whiteboard and textbook method (traditional method).

Finally, post-test was conducted for both groups based on the six (6) taught subject-verb agreement rules. This test was invigilated by two colleague teachers. The test was organized at the same time for both groups in a separate classroom. The test score was recorded in frequency count and was converted into percentages. To measure the attitude of the experimental group towards Computer-Assisted Language Learning-an online video tutorial, a questionnaire was designed to elicit information on the general attitude of students towards ICT based English Grammar learning.

### **3.9 Data Analysis Instrument**

Descriptive analysis which focused mainly on mean, standard deviation and frequency was used to carry out the study. Zikmund (2003) explained descriptive analysis as the transformation of raw data into a form that will make them easy to understand and interpret; rearranging, ordering, and manipulating data to generate descriptive information. Statistical Package for Social Science (SPSS) software, which is used to perform data entry and analysis and to create tables and graphs, was used to analyze the data.

## CHAPTER FOUR

### DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS

#### 4.1 Introduction

This chapter presents the analysis and discussion of the findings of the study. This research seeks to find out the effects of Computer-Assisted Language Learning (CALL) on students' performance in English grammar, specifically subject-verb agreement. The data for this study were drawn from aptitude test (pre-test and post-test) organized for both experimental and controlled groups and questionnaire administered to the experimental group after the intervention. Statistical Package for Social Science (SPSS) was the main tool used to collate the data and perform the analysis.

#### 4.2 Details of Participants Used for the Study

**Table 1: Statistics of Participants**

S/N	Programme	Experimental Group			Controlled Group		
		Number of Students			Number of Students		
		Male	Female	Total	Male	Female	Total
1	General Arts	3	3	6	3	2	5
2	Home Economics	1	4	5	-	5	5
3	Technical	3	1	4	4	1	5
4	Business	2	2	4	3	1	4
5	Visual Art	3	1	4	4	-	4
6	General Science	3	1	4	2	2	4
7	Agriculture Science	2	1	3	2	1	3
<b>Total</b>		<b>17</b>	<b>13</b>	<b>30</b>	<b>18</b>	<b>12</b>	<b>30</b>

Source: Field Survey, (2020)

### 4.3 Pre-intervention Results

This section takes a critical look at the results of the pre-test organized for both the experimental and the controlled groups. Table 2 below displays the pre-test results of both groups.

**Table 2: Pre-test Results**

Test Score		Experimental Group		Controlled Group	
Range of Marks	Percentage (%) Scores	Number of Students	Percentages (%)	Number of Students	Percentages (%)
0-5	0-25	5	16.7%	6	20.0%
6-10	30-50	12	40.0%	10	33.3%
11-15	55-75	7	23.3%	9	30.0%
16-20	80-100	6	20.0%	5	16.7%
<b>Total</b>		<b>30</b>	<b>100%</b>	<b>30</b>	<b>100%</b>

Source: Field Survey, (2020)

#### 4.3.1 Scoring Classification of the Experimental and the Controlled Groups Pre-test

##### *Experimental Group*

From Table 2 above, total marks obtainable was 20. Five (5) students representing 16.7% had marks 5 and below. Twelve (12) students (40.0%) got 6-10 marks. Seven (7) had 11-15 representing 23.3% and six (6) had 16-20 which represent 20.0%.

##### *Controlled Group*

As indicated in Table 2, six (6) students representing 20.0% had marks 5 and below. Ten (10) students (33.3%) got 6-10 marks. Nine (9) had 11-15 representing 30.0% and five (5) had 16-20 which represent 16.7%. The performance of the students in the pre-test organized for both the experimental and the controlled groups can be described as low since more than 50% of the students did not score above half of the total marks. This is an indication that students have challenge with subject-verb agreement.

#### 4.4 Post-intervention Results

This section of the research gives a general idea on students' performance after the intervention design had been implemented.

##### 4.4.1 Post-test Results

A test was organized on subject-verb agreement rules for both the experimental and the controlled groups after the intervention implementation. The experimental group was taught through an online video tutorial while whiteboard and textbook method was used for the controlled group. Table 3 below presents the result of the post-test for both groups.

**Table 3: Post-test Results**

Test Score		Experimental Group		Controlled Group	
Range of Marks	Percentage Scores	Number of Students	Percentages (%)	Number of Students	Percentages (%)
0-5	0-25	-	0%	-	0%
6-10	30-50	-	0%	7	23.3%
11-15	55-75	18	60%	13	43.3%
16-20	80-100	12	40%	10	33.3%
<b>Total</b>		<b>30</b>	<b>100%</b>	<b>30</b>	<b>100%</b>

Source: Field Survey, (2020)

##### *Experimental Group*

In Table 3 above, which displays the post-test result, no student scored marks below 11 which represents zero (0%) of the respondents of 30. It is also evident from the data that eighteen (18) students scored marks ranging from eleven to fifteen (11-15), which accounts for sixty percent (60%) of the students. Twelve (12) students representing forty percent (40%) scored marks ranging from sixteen to twenty (16-20) of the total marks.

***Controlled Group***

From table 3 above, none of the students scored marks below 6 which represents zero to twenty (0-25%) of the total marks of twenty. Seven (7) students scored marks ranging from six to ten (6-10), which accounts for 23.3% of the respondents. Thirteen (13) students representing 43.3% of the 30 students scored marks ranging from eleven to fifteen (11-15) of the total marks; while ten (10) representing 33.3% of the students scored marks ranging from 16-20 which represents 80-100%.

Comparing the performance of both groups after the intervention, it is clear that the performance of the experimental group exceeded that of the controlled group. It can therefore be assumed that, the use of the online video tutorial made students to understand the subject-verb agreement rules better.

***4.4.2 Comparison of Pre-test and Post-test Results of the Controlled Group***

Table 4 below presents the difference in controlled group performance before and after the intervention. The controlled group was not treated as an experimental group but in another way (whiteboard and textbook method). Comparing the pre-test result of students to the post-test, the performance of students in the post-test increased a little.

**Table 4: Pre-test and Post-test Results of the Controlled Group**

Test Score		Pre-Test		Post-Test	
Range of Marks	Percentage (%) Scores	Number of Students	Percentages (%)	Number of Students	Percentages (%)
0-5	0-25	6	20.0%	-	0%
6-10	30-50	10	33.3%	7	23.3%
11-15	55-75	9	30.0%	13	43.3%
16-20	80-100	5	16.7%	10	33.3%
<b>Total</b>		<b>30</b>	<b>100%</b>	<b>30</b>	<b>100%</b>

**Source:** Field Survey, (2020)

#### 4.4.3 Comparison of Pre-test and Post-test Results of the Experimental Group

Table 5 below presents the difference in the experimental group performance before and after treatment. The experimental group was taught through the use of online video tutorial on subject-verb agreement rules.

Comparing the performance of students in the pre-test and post-test, it is clear that the performance of the experimental group in the post-test had far exceeded that of pre-test even though the difficulty level of the test item of the post-test was raised a little bit. All the students had more than half of the total marks of twenty (20).

It can be concluded that there has been transformation in the understanding behavior and performance of students. This change can be said to have been brought about as a result of the use of Computer-Assisted Language Learning (CALL), specifically online video tutorial on subject-verb agreement rules.

**Table 5: Pre-test and Post-test Results of Experimental Group**

Test Score		Pre-Test		Post-Test	
Range of Marks	Percentage (%) Scores	Number of Students	Percentages (%)	Number of Students	Percentages (%)
0-5	0-25	5	16.7%	-	0%
6-10	30-50	12	40.0%	-	0%
11-15	55-75	7	23.3%	18	60%
16-20	80-100	6	20.0%	12	40%
<b>Total</b>		<b>30</b>	<b>100</b>	<b>30</b>	<b>100</b>

**Source:** Field Survey, (2020)

#### 4.4.4 Attitude Questionnaire Result of the Experimental Group

An attitude questionnaire was administered to the experimental group after the implementation of the intervention. The purpose of this was to find out the attitude of the experimental group learners towards Computer-Assisted Language Learning

(CALL) and Computer-Assisted Learning (CAL) in general. The questionnaire was in three sections. There were three (3) questions on personal details, six (6) items on Computer-Assisted Language Learning (CALL) in teaching English grammar and four (4) items on Computer-Assisted Learning (CAL). In all, there was a total of thirteen. Thirty (30) participants responded to the questionnaire and the result have been shown in the tables below.

#### 4.4.4.1 Age Range and Programme Distribution of Respondents

This looks at the age range and the percentage of respondents with respect to programme of study.

**Table 6: Age Range of Respondents**

Sex of Respondents	Age range				Total
	10-15	16-20	21-25	26 and above	
Male	0	12	4	1	17
Female	1	12	0	0	13
<b>Total</b>	<b>1</b>	<b>24</b>	<b>4</b>	<b>1</b>	<b>30</b>
<b>Percentages</b>	<b>3.3%</b>	<b>80.0%</b>	<b>13.3%</b>	<b>3.3%</b>	<b>100%</b>

Source: Field Survey, (2020)

From Table 6 above, the total number of students who responded to the questionnaire were 30. Out of these, 24 (80.0%) of the respondents fell within the ages of 16 and 20. 4(13.3%) were within the ages of 21 and 25. 1 (3.3%) was within the ages of 10 and 15 and lastly 1 (3.3%) was within the ages of 26 and above. It is clear that majority of the students fell within the ages of 16 and 20.

**Table 7: Programme Distribution of Respondents**

Course Pursued by Respondents	Sex of respondents		Total	Percentages (%)
	Male	Female		
	General Arts	3		
Home Economics	1	4	5	16.7%
Technical	3	1	4	13.3%
Business	2	2	4	13.3%
Visual Art	3	1	4	13.3%
General Science	3	1	4	13.3%
Agriculture	2	1	3	10.0%
<b>Total</b>	<b>17</b>	<b>13</b>	<b>30</b>	<b>100.0%</b>

**Source:** Field Survey, (2020)

Table 7 above, summarizes programme distribution of respondents. 6 (20%) of the respondents were drawn from General Arts, 5 (16.7%) were Home Economics students. 4 (13.3%) were offering Technical, Business, Visual Arts and General Science respectively. Lastly, 3(10%) were offering Agriculture giving a total of 30 (100%).

Since the problem of subject-verb agreement affects the entire students' body in the school and the nation as a whole, the researcher deem it ideal to sample students from all programme areas. The percentage of respondents selected from each department was based on the class size to ensure a fair representation of the sample size.



#### 4.4.4.2 Students' Attitude Towards Computer-Assisted Language Learning

This section delves into respondents' attitude towards Computer-Assisted Language Learning.

**Table 8: Respondents' Understanding on the Rules of Subject-Verb Agreement through Online Video Tutorial**

Sex of Respondents	Scale				Total
	Strongly Agree	Agree	Disagree	Strongly Disagree	
Male	11	6	0	0	17
Female	10	3	0	0	13
<b>Total</b>	<b>21</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>30</b>
<b>Percentages</b>	<b>70.0%</b>	<b>30.0%</b>	<b>0%</b>	<b>0%</b>	<b>100%</b>

Source: Field Survey, (2020)

Table 8 above represents students' responses on the understanding of subject-verb agreement rules. Thirty (30) respondents answered the questionnaire. The majority, 21(70.0%) of the respondents said they strongly agreed that, the Online Video Tutorial had made them to understand the rules of subject-verb agreement. 9 respondents (30%) said they agreed and none of them said they disagreed or strongly disagreed. It is clear that the Online Video Tutorial had helped students to understand the rules of subject-verb agreement.

**Table 9: Respondents' Interest on the Use of Online Video Tutorial**

Sex of Respondents	Scale				Total
	Strongly Agree	Agree	Disagree	Strongly Disagree	
Male	15	2	0	0	17
Female	12	1	0	0	13
<b>Total</b>	<b>27</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>30</b>
<b>Percentages</b>	<b>90.0%</b>	<b>10.0%</b>	<b>0%</b>	<b>0%</b>	<b>100%</b>

Source: Field Survey, (2020)

Table 9 above depicts respondents' interest on the use of Online Video Tutorial on subject-verb agreement rules. Thirty (30) respondents answered the questionnaire. Out of these, 27 of them (90.0%) strongly agreed that their interest was aroused throughout the teaching and learning process. 3(10.0%) said they agreed and none of them disagreed or strongly disagreed. This is an indication that students interest aroused when Online Video Tutorial was used in teaching subject-verb agreement.

**Table 10: Improvement on Respondents' Spoken English Grammar**

Sex of Respondents	Scale				Total
	Strongly Agree	Agree	Disagree	Strongly Disagree	
Male	14	3	0	0	17
Female	7	6	0	0	13
<b>Total</b>	<b>21</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>30</b>
<b>Percentages</b>	<b>70.0%</b>	<b>30.0%</b>	<b>0%</b>	<b>0%</b>	<b>100%</b>

**Source:** Field Survey, (2020)

Table 10 in the previous page looked at how the Online Video Tutorial on subject-verb agreement helped respondents to improve on their spoken English Grammar. Thirty (30) students responded to the questionnaire. Twenty-one (21) representing (70.0%) strongly agreed that the online video tutorial had helped them to improve on their spoken English Grammar. 9 (30.0%) said they agreed and none of them chose disagree or strongly disagree. The result from the respondents indicated that the use of Online Video Tutorial in teaching subject-verb agreement had helped them to improve on their spoken English Grammar.

**Table 11: Improving English Grammar Skills of Students through Computer-Assisted Language Learning**

Sex of Respondents	Scale				Total
	Strongly Agree	Agree	Disagree	Strongly Disagree	
Male	10	7	0	0	17
Female	13	0	0	0	13
<b>Total</b>	<b>23</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>30</b>
<b>Percentages</b>	<b>76.7%</b>	<b>23.3</b>	<b>0%</b>	<b>0%</b>	<b>100%</b>

Source: Field Survey, (2020)

Table 11 above presents respondents' responses to the improvement on students' English Grammar skills through the use of Computer-Assisted Language Learning (CALL). Thirty (30) respondents answered the questionnaire. The majority (76.7%) said they strongly agreed that CALL would help improve students' English Grammar skills. 7 (23.3) agreed and none of the respondents disagreed or strongly disagreed. From the responses it is clear that CALL would help to improve students' English Grammar skills.

**Table 12: Arousing the Interest of Students through Computer-Assisted Language Learning**

Sex of Respondents	Scale				Total
	Strongly Agree	Agree	Disagree	Strongly Disagree	
Male	13	4	0	0	17
Female	13	0	0	0	13
<b>Total</b>	<b>26</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>30</b>
<b>Percentages</b>	<b>86.7%</b>	<b>13.3%</b>	<b>0%</b>	<b>0%</b>	<b>100%</b>

Source: Field Survey, (2020)

Table 12 above, presents respondents’ responses on the use of Computer-Assisted Language Learning to arouse the interest of students. Thirty (30) students responded to the questionnaire. Out of these, 26 (86.7%) said they strongly agreed that the use of CALL in the teaching and learning process arouses the interest of students. 4(13.3) said they agreed and none of them said they disagreed or strongly disagreed. From the responses of students, it can be concluded that the use of CALL in the teaching and learning process would arouse the interest of students.

**Table 13: Enhancing the Understanding of Students through the Use of CALL by all Teachers**

Sex of Respondents	Scale				Total
	Strongly Agree	Agree	Disagree	Strongly Disagree	
Male	11	6	0	0	17
Female	9	4	0	0	13
<b>Total</b>	<b>20</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>30</b>
<b>Percentages</b>	<b>66.7%</b>	<b>33.3</b>	<b>0%</b>	<b>0%</b>	<b>100%</b>

**Source:** Field Survey, (2020)

Table 13 above depicts respondents’ responses to all teachers using CALL to supplement the traditional classroom teaching and learning. Thirty (30) respondents answered the questionnaire. Twenty (20) respondents representing 66.7% said they strongly agreed. 10 (33.3) agreed and none of them disagreed or strongly disagreed. The responses of the respondents indicated that students would understand content better if all teachers use CALL to supplement the traditional classroom teaching and learning.

## 4.4.4.3 Computer-Assisted Learning (CAL)

**Table 14: Students Understand Content (topic of study) better through Computer-Assisted Learning (CAL)**

Sex of Respondents	Scale				Total
	Strongly Agree	Agree	Disagree	Strongly Disagree	
Male	11	6	0	0	17
Female	7	6	0	0	13
<b>Total</b>	<b>18</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>30</b>
<b>Percentages</b>	<b>60.0%</b>	<b>40.0%</b>	<b>0%</b>	<b>0%</b>	<b>100%</b>

Source: Field Survey, (2020)

Table 13 above presents responses on students understanding of contents through CAL. Thirty (30) respondents answered the questionnaire. 18(60.0%) said they strongly agreed. 12 (40.0%) of respondents said they agree and none of them responded to disagree and strongly disagree. From the responses of the respondents, it can be concluded, that students would understand content better through Computer-Assisted Learning (CAL).

**Table 15: Downloading Video Tutorials on English Grammar Rules to Improve on Grammar Skills**

Sex of Respondents	Scale				Total
	Strongly Agree	Agree	Disagree	Strongly Disagree	
Male	11	5	1	0	17
Female	9	4	0	0	13
<b>Total</b>	<b>20</b>	<b>9</b>	<b>1</b>	<b>0</b>	<b>30</b>
<b>Percentages</b>	<b>66.7%</b>	<b>30.0%</b>	<b>3.3%</b>	<b>0%</b>	<b>100%</b>

Source: Field Survey, (2020)

Table 15 above presents students’ responses on using smartphone to download video tutorials on English Grammar rules when they are at home to improve on their grammar skills. Thirty (30) respondents answered the questionnaire. 20 (66.7%) said they strongly agreed to use their smartphone to download video tutorials on English Grammar rules when they are at home to improve on their grammar skills. The scale point, “Agree” recorded the second highest represented by 9 (30.0%), next was disagree which recorded 1(3.3%). Lastly, none of the respondent chose strongly disagreed. The responses indicated that respondents would download online video tutorial when they are at home to improve on their English Grammar skills.

**Table 16: Downloading Video Tutorials on other Subjects of Study to Enhance Learning**

Sex of Respondents	Scale				Total
	Strongly Agree	Agree	Disagree	Strongly Disagree	
Male	13	4	0	0	17
Female	11	2	0	0	13
<b>Total</b>	<b>24</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>30</b>
<b>Percentages</b>	<b>80.0%</b>	<b>20.0%</b>	<b>0%</b>	<b>0%</b>	<b>100%</b>

**Source:** Field Survey, (2020)

Table 16 depicts students’ responses to the use of their smartphones to download video tutorial on other subjects of study to enhance their learning. Thirty (30) respondents answered the questionnaire. Out of these, 24 respondents representing 80.0% said they strongly agreed. 6 (20.0%) agreed and none of them said they disagreed or strongly disagreed. The responses indicated that students had realized that online video tutorial would help them to understand the content of all their subjects of study.

**Table 17: The Use of Materials Available on the Internet by Senior High School Students to Supplement the Traditional Classroom Learning**

Sex of Respondents	Scale				Total
	Strongly Agree	Agree	Disagree	Strongly Disagree	
Male	10	6	0	1	17
Female	12	1	0	0	13
<b>Total</b>	<b>22</b>	<b>7</b>	<b>0</b>	<b>1</b>	<b>30</b>
<b>Percentages</b>	<b>73.3%</b>	<b>23.3%</b>	<b>0%</b>	<b>33.3%</b>	<b>100%</b>

**Source:** Field Survey, (2020)

Table 17 above presents responses of students on the use of materials available on the Internet by Senior High School Students to supplement the traditional classroom learning. Thirty (30) respondents answered the questionnaire. 22 (73.3%) said they strongly agreed, 7(23.3%) agreed, 1(3.3) strongly disagreed to this and none of them chose agreed. The responses indicated that it would be appropriate if senior high school students are taught how to use the materials available on the Internet to supplement the traditional classroom learning.

#### 4.5 Discussion of Findings

The aim of this study was to find out the effects of Computer-Assisted Language Learning (CALL) on students' performance in English grammar, specifically subject-verb agreement.

The researcher made an effort to identify and explain some possible errors students made with respect to subject-verb agreement. Again, the experimental group was taught through online video tutorial while the traditional textbook and whiteboard method was used for the controlled group. Below are the findings considering the pre-intervention and post-intervention results of participants.

#### **4.5.1 Equipping Students with Knowledge and Skills in Grammar Using**

##### **Computer-Assisted Language Learning (CALL)**

A pre-test based on subject-verb agreement rules was organized for both controlled and experimental groups to ascertain sufficient information about the potentialities of students before the intervention. After the pre-test, a post-test was organized for both groups to find out the effectiveness of the intervention. The test was marked out of a total of 20 marks.

The pre-test results of both the experimental and the controlled groups in the Table 4.2 shows that 56.7% and 53.3% respectively of the students did not scored marks above half of the total marks. This is an indication that students had problem with subject-verb agreement.

Comparing the post-test result of both the experimental and the controlled groups as shown in table 4.3, 100% and 76.6% respectively of the students had above half of the total marks of the test items representing marks from 11-20. The percentage of the experimental group (100%) indicate a significant difference in the learners' performance and this might have happened as a result of the use of CALL-an online video tutorial.

Again, comparing the pre-test and the post-test results of the controlled group in table 4.4 aforementioned, 46.7% of the students got more than half of the total marks in the pre-test while in the post-test 76.6% scored more than half that is 11-20 marks. It can be said therefore that there has been little improvement in the performance of students as compared with those of the experimental group that indicate a significant change.



From Table 4.5 which compares the pre-test and the post-test result of the experimental group, 43.3% of the students scored more than half of the marks in the pre-test and 100% scored more than half of the marks in the post-test. It can be concluded that the use of CALL-an online video tutorial brought about this marked difference in performance among the experimental group.

#### **4.5.2 The Attitude of Students Towards the Use of Computer-Assisted Language Learning (CALL)**

A questionnaire was administered to the experimental group after the intervention to find out the attitude of students toward Computer-Assisted Language Learning (CALL) and Computer-Assisted Learning (CAL) as a whole. Below are the findings from the responses.

1. From Table 8, 70% of the respondents strongly agreed and 30% agreed that they understood the rules of subject-verb agreement through the online video tutorial.
2. From Table 9, 90% of the respondents strongly agreed and 10% agreed that their interest was aroused throughout the teaching and learning process.
3. In reference to Table 10, 70% of the respondents strongly agreed and 30% agreed that the use of the online video tutorial had helped them to improve upon their spoken English Grammar.
4. From Table 11, using CALL to help students improve on English Grammar skills, 76.7% of the respondents strongly agreed and 23.3% agreed that Computer-Assisted Language Learning would help students to improve on their English grammar skills.

5. From Table 12, using CALL to arouse the interest of students, 86.7% of the respondents strongly agreed and 13.5% agreed that Computer-Assisted Language Learning arouses the interest of students.
6. The use of CALL by all English teachers to supplements the traditional classroom teaching and learning, from Table 13, 66.7% strongly agreed and 33.3% agreed to this.
7. From Table 14, 60% of the respondents strongly agreed and 40% agreed that CAL helps students to understand content better.
8. From Table 15, 66.7% of the respondent strongly agreed and 30.0% also agreed to use their smartphones when they are at home to download video tutorials on English Grammar rules to improve on their grammar skills.
9. Again, from Table 16, 80% of the respondents strongly agreed and 20% agreed that they would use their smartphones to download video tutorials on other subjects of study to enhance their studies.
10. In reference to Table 17, 73.3% of the respondents strongly agreed and 23.3% agreed that all senior high school students should be taught how to use the materials available on the Internet to supplement traditional classroom learning.

The questionnaire result proves that the experimental group's attitude towards CALL-an online video tutorial in teaching English grammar was positive. On the basis of the post-test and the questionnaire results of the experimental group, it is deduced that the use of Computer-Assisted Language Learning-an online video tutorial has enhanced the performance of Ningo Senior High School students in English grammar specifically, subject-verb agreement.

This buttresses the studies of Mohammad , Ali, Ghulam and Shahzad-ul-Hassan (2018), Barzan , Adel , Ali and Shirzad (2016) and Harwati , Karmila and Melor (2019) that learners are able to obtain better results when they learn grammar through CALL. This is because it creates attractive and interesting teaching environment which helps learners to understand concept better resulting in greater achievement of target.

Again, it affirms the study of Purnawati and Ifan (2019) that students should be trained to use the available digital equipment such as smart phones, tablets etc. to access online exercises appropriate to their individual needs. Based on the finding of the experimental group of a study conducted by Naba'h (2012 ), he concluded that CALL instruction encourages students to work on their own to devise language activities.

Lastly, it corroborates the studies of Syam (2017), Hashemyolia, Ayub and Moharrer (2015), Negin and Saman (2019) and Tafazoli, Parra and Abril (2018) that English language learners' hold positive attitudes towards CALL as well as their motivation increases to a large extent.

The above discussions clearly demonstrate that English grammar knowledge, skills and usage can be greatly enhanced among high school students if curriculum developers could incorporate the use of computer technology in the teaching and learning models.

## CHAPTER FIVE

### SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

#### 5.1 Introduction

Based on the foregoing chapters on literature review and data analysis, it is obvious that, deployment of Computer-Assisted Language Learning (CALL) has the propensity to improve learners understanding and usage of subject-verb agreement. This chapter looks at the summary of findings, their conclusion and recommendations.

#### 5.2 Summary of Findings

In English language grammar, there are agreed rules that govern the verb form and its preceding subject. A singular subject takes a singular verb and a plural subject takes a plural verb. The research results indicated that students find it a herculean task in matching subjects and verbs appropriately. However, facilities abound in the Information and Communications Technology field that bridges the gap and provide the needed help of which students can take advantage. The research effort was to ascertain the veracity of this claim and to provide the necessary intervention to lessen the challenges posed.

There were two groups of learners for this study; controlled and experimental groups. A pre-test and a post-test were organized for both groups and comparing the post-test results of both groups, the performance of the experimental group showed a significant improvement of the understanding and usage of subject-verb agreement over that of their counterpart group. It was obvious, then, that the use of CALL (Computer-Assisted Language Learning)-an online video tutorial, brought about this marked difference in performance.

Again, the research intended to find out students' attitude towards CALL. Responses from the questionnaire administered to the experimental group showed that students' attitude toward CALL was positive. With the intervention, students became curious in the search of online information to enhance their understanding and hence application of the concept.

This was even evident throughout the teaching and learning process because students were enthused by way of questions and responses. One cannot but conclude that the intervention has sparked in learners the zeal and curiosity to seek information from online sources to supplement class activities.

Lastly, it was realized that most students have smartphones at home but have little if any knowledge on how to use them to enhance their studies. Since the world is now a global village and computer technology is the way to go, there is the dire need that senior high school students need to be taught how to use video tutorials to improve their studies skills.

### **5.3 Conclusion**

The results of the experimental group who was taught through an online video tutorial shows significant higher level of achievement than the controlled group who was taught by the traditional textbook and whiteboard method. Based on the findings of this study, it can be concluded that the use of CALL, a component of ICT in teaching English Grammar has the potential to enhance academic performance of students. In addition, the experimental group's attitude towards the online video tutorial on subject-verb agreement indicated that using CALL to supplement the traditional classroom teaching can motivate students and arouse their interest which would go a long way to improve their written and spoken language.

#### **5.4 Recommendations**

Having studied the findings from the interventions implemented and conclusions drawn, the researcher recommends the following for consideration:

1. English teachers should try their best to equip themselves with basic ICT skills to enable them integrate them in their lessons to enhance students' understanding and usage of the language.
2. Teachers are encouraged to download online video tutorials from YouTube and other relevant sites to make teaching and learning interesting which would improve learners' performance.
3. Teachers should encourage learners, especially high school students to use the Internet resources and recommend relevant sites when teaching.
4. Parents should buy electronic gadgets for their wards to use in learning at home to enable them improve on their competence and technological skills.
5. Curriculum planners should integrate into the various subjects of study the use of ICT tools to enhance the traditional classroom teaching and learning.
6. The government should make provision for teachers to attend seminars, workshops and conferences on regular basis to acquire more knowledge and skills on how to integrate ICT into the teaching and learning process. This would enable them to be competent enough to be able to cope with the challenges in order to bring innovation into the teaching and learning enterprise. Also, senior high schools should be provided with computers and Internet connectivity to enable teachers and students make use of the resources on the Internet to enhance teaching and learning.

Lastly, the researcher suggests that future researchers in this field consider how ICT can be used to enhance teaching and learning of other aspects of English Grammar as well as other subjects of study in the senior high school.



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**APPENDIX A**  
**PRE-TEST QUESTIONS**

**Answer all questions**

*Please do not write your name nor your class on the question paper*

*Underline the correct verbs in the sentences below.*

1. The book **is/are** on the table.
2. My books **is/are** on the table.
3. Mr. Mensah **works/work** as a counsellor in the school.
4. The box of grapes from Saratoga Farms **was/were** delivered today.
5. The houses on the apple street **was/were** built some years ago.
6. The weather in mountainous regions **is/are** serious during the winter.
7. Neither of the houses **is/are** worth much.
8. Everyone **is/are** bringing his own car.
9. Many of the people in the group **works/work** consistently.
10. The committee **was/were** out an hour only.
11. The team **has/have** received their letters.
12. The government **was/were** responsible for the rise in fuel price increment.
13. My mother and father **is/are** old.
14. Each mother and father **was/were** recognized at the meeting.
15. A car and a bike **is/are** my means of transportation
16. Fufu and Light soup **is/are** my favorite food.
17. Either rain or snow **is/are** falling all over the state.
18. Neither titles nor honors **are/is** everlasting.
19. My aunt or my uncle **is/are** arriving by train today.
20. Either the apples or the large orange **are/is** for Jack.

## APPENDIX B

### POST-TEST QUESTIONS

#### Answer all question

*Please do not write your name nor your class on the question paper*

*Underline the correct verbs in the sentences below.*

1. That monkey **eats/eat** banana.
2. This car **goes/go** fast.
3. I **reads/read** newspaper regularly.
4. The colours of the rainbow **is/are** beautiful.
5. The books in the bedroom **is/are** mine.
6. The dog who is chewing on my jeans, **is /are** usually very good.
7. The doctor and the nurse **is/are** off this week
8. Spaghetti and meatballs **is /are** a delicious dish.
9. Neither Sam nor his Sisters **likes/like** to cook.
10. Either John or the three junior managers **needs/need** to be let go.
11. Either Mensah or Joyce **has/have** Exams today.
12. Winning and losing **is /are** a mindset.
13. One of the most beautiful places in Jamaica **is/are** Dunn's River Falls.
14. Both of the games **was/were** postponed.
15. Several of the students **has/have** volunteered.
16. All of the vegetable garden **has/have** been planted.
17. None of the machines **was/were** damaged.
18. The team **is/are** on the field.
19. The class **has/have** met its substitute teacher.
20. The number of students offering computer courses **has/have** increased.

## APPENDIX C

### QUESTIONNAIRE FOR EXPERIMENTAL GROUP

#### Purpose of the Study

**This research seeks to find out the effect of Computer-Assisted Language Learning (CALL) on students' performance in English grammar, specifically subject-verb agreement.**

#### INSTRUCTION:

- 1. Please do not write your name nor your class on the script.*
- 2. Please indicate your response to the following questions by checking in the appropriate bracket.*

#### SECTION (A): Personal Details

1. Age Range

10-15 [ ]

16-20 [ ]

21-25 [ ]

26 and above [ ]

2. Gender

Male [ ]

Female [ ]

3. Programme

General Arts [ ]

Home Economics [ ]

Technical [ ]

Business [ ]

Visual Art [ ]

General Science [ ]

Agriculture Science [ ]

**SECTION (B): Students' Attitude Towards Computer-Assisted Language Learning**

1. I have understood the rules of Subject-Verb Agreement when it was explained with downloaded Online Video Tutorial through PowerPoint presentation.

Strongly Agree [ ]

Agree [ ]

Disagree [ ]

Strongly disagree [ ]

2. My interest was aroused throughout the teaching and learning process.

Strongly Agree [ ]

Agree [ ]

Disagree [ ]

Strongly disagree [ ]

3. The Video Tutorial Presentation had helped me to improve on spoken English Grammar.

Strongly Agree [ ]

Agree [ ]

Disagree [ ]

Strongly disagree [ ]

4. Computer-Assisted Language Learning can improve English Grammar skills of students.

Strongly Agree [ ]

Agree [ ]

Disagree [ ]

Strongly disagree [ ]

5. Computer-Assisted Language Learning arouse the interest of students in the learning process.

Strongly Agree [ ]

Agree [ ]

Disagree [ ]

Strongly disagree [ ]

6. The use of Computer-Assisted Language Learning by all teachers to supplement the traditional classroom teaching will enhance better understanding of students.

Strongly Agree [ ]

Agree [ ]

Disagree [ ]

Strongly disagree [ ]

**SECTION (C): Computer-Assisted Learning by Students**

1. Students understand content (topic of study) better through Computer-Assisted Learning (CAL).

Strongly Agree [ ]

Agree [ ]

Disagree [ ]

Strongly disagree [ ]

2. When I am at home, I will use my smartphone to download Video Tutorials on English Grammar rules in order to improve on my grammar skills.

Strongly Agree [ ]

Agree [ ]

Disagree [ ]

Strongly disagree [ ]

3. I will use my smartphone when at home to download online video tutorial on other subjects of study to enhance my learning.

Strongly Agree [ ]

Agree [ ]

Disagree [ ]

Strongly disagree [ ]

4. I suggest all Senior High School Students should be taught how to use the materials available on the Internet to supplement the traditional classroom learning.

Strongly Agree [ ]

Agree [ ]

Disagree [ ]

Strongly disagree [ ]

**Thank you for participating in this study.**