

Effectiveness of Multimedia Assisted Package on Achievement in English Grammar in Relation to Interest in Learning among Class IX Students

*A Dissertation Submitted in Partial Fulfilment of the
Requirements for the Award of the Degree of*

Master of Philosophy
in
Education

by

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APPROVAL OF DISSERTATION

Dissertation entitled “Effectiveness of Multimedia Assisted Package on Achievement in English Grammar in Relation to Interest in Learning among Class IX Students” by David Raju Matta is approved for the award of the degree of Master of Philosophy in Education.

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DECLARATION

I David Raju Matta, hereby declare that the Dissertation entitled “Effectiveness of Multimedia Assisted Package on Achievement in English Grammar in Relation to Interest in Learning among Class IX Students” in relation to their Interest in learning is a record of original research work undertaken by me for the award of the degree of Master of Philosophy in Education. I have completed this study under the supervision of Dr Sumitha Rao, Assistant Professor, school of education, Christ University.

I also declare that this Dissertation has not been submitted for the award of any degree, diploma, associate ship, fellowship or other title. It has not been sent for any publication or presentation purpose. I hereby confirm the originality of the work and that there is no plagiarism in any part of the dissertation.

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CERTIFICATE

This is to certify that the Dissertation submitted by David Raju Matta, Reg. No 1336001 titled “Effectiveness of Multimedia Assisted Package on Achievement in English Grammar in Relation to Interest in Learning among Class IX Students” is a record of research work done by him during the academic year 2013 – 2016 under my supervision in partial fulfillment for the award of Master of Philosophy in Education.

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ABSTRACT

The aim of the present study was to find out and compare “Effectiveness of Multimedia Assisted Package on Achievement in English Grammar in Relation to Interest in Learning among Class IX Students”, it is restricted to selected topics of English grammar. This two group pre-test and post-test design was found to be the most appropriate after review of literature of experimental design. The experimental study was conducted with 60 students of class IX. Two groups were formulated as control group and experimental group on the basis of interest inventory scores, SES and gender with lottery. The researcher administered the Interest Inventory by Dr Linda Karges -Bone, and Socio Economic Status (SES) scale by Dr. M R Lakshiminarayana to segregate the groups. In order to teach experimental group through multimedia tool “a Simple and Easy App: Learn English Grammar (SEALEG) Writing, Spelling and vocabulary – WAGmob was adapted and the other tools developed by the researcher, namely Pre-test and Parallel Post-test two modules in English grammar for the purpose of the study.

In the first step, Pre-test was conducted to check whether the groups were different before the manipulation starts. The intervention was administered to the students of experimental group over a period of two months with ten sessions in the week. In the course of entire study, the traditional methods of teaching were used control group.

Finally, Post-test is conducted for the measurement of effects. Since there is often a measurement effect, a control group, which is the group not receiving the same manipulation is a need to see how big this effect is. The experimental group showed much difference in learning English grammar through multimedia package (SEALEG).

The findings reveal that the students of Control Group and the students of experimental group did not significantly differ in the pre-test scores with respect to their effectiveness and interest in learning English grammar but the students of experiential group have shown a significant difference between an effectiveness and interest scores of pre-test and post-test in learning English grammar after using the intervention. On the basis of the findings of this study required recommendations were made for further research.

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CHAPTER 1

INTRODUCTION

1.1 Prelude

Education in the largest sense is an experience of the mind, character or physical ability of an individual. Education in the traditional sense means controlling or disciplining the behavior of an individual. According to the ancient Indian teachings, education was to provide good training to young men and women in the performance of their social, economic and religious duties. An ancient Greek philosopher Aristotle (384 BC) describes '*it is the mark of an educated mind to be able to entertain a thought without accepting it*'.

Education brings enlightenment in mankind. Traditional teaching method '*chalk and talk*' and different verbal forms of communications in the classroom are a one-way flow of information whereas; the use of multimedia technology is an interactive learning process with the presentation of text, pictures, different forms of illustrations, videos and animations. The multimedia technology in the education can bring the quality in teaching and facilitate the learners to participate and learn actively. Over the years, technology has enormous growth in order to uplift the quality of education. The use of technology in education influences directly both teacher and students in education.

The multimedia has a great role in education and in the process of language learning especially grammar. Multimedia is the best way to achieve the learning objectives in any language learning. Text and graphics with proper instruction will make the learners to learn the language effectively. It is impotent to know that very language has grammar and it is the system and the structure of language. There are many sets of rules include morphology, syntax, phonetics and pragmatics in grammar. Through the use of multimedia and visual presentation grammar can be taught effectively and it creates interest in learning the language.

1.2 Language

There are several ways of teaching languages. Some have fallen into relative obscurity

and some are widely used; still others have a little following, however provide helpful insights. Language education might occur as a general school subject, in a very specialized language school, or out of school with an expensive choice of proprietary way son-line and in communication teaching.

There are four principal views:

- 1.2.1 The useful observation shows language as a vehicle to accomplish or categorical and exact practicality, like requesting one thing.
- 1.2.2 The observation of transmission technique spoken the particular implementation within the language classroom; “stratagem, or contrivance, a specific trick, used to accomplish a direct objective.
- 1.2.3 The structural observation treats language as a system of structurally connected parts to code meaning (e.g. grammar).

The interactive observation sees language as a vehicle for that specialize in patterns of moves, acts, the creation and maintenance of social relations, negotiation and interaction found in chatty exchanges.

1.3 Importance of Grammar in Language

The study of Language is worthy subject, because it uses always exists in a setting involving people and situations. The study of English language includes usage of correct grammar, confident communication skills and it is knowledge of the language expressed in literature. In linguistics, Grammar is the systematic study and description of a language. It has a set of structural rules governing the composition of phrases, clauses, and words in any given natural language. English grammar is the set of principles or rules dealing with the word structures (morphology) and sentence structures (syntax) of the English language. Grammar is the structural foundation of any language. The one who is aware of how grammar functions, the more one can monitor the meaning and effectiveness of the way others use the language. Without grammar, it is generally possible to communicate orally, notably a casual dialogue, but in the Written communication and any other form of indirect communication thus depend on correct use of grammar or syntax, as well as of vocabulary and spelling, in order to ensure that messages are immediately comprehensible to the reader, and not meaningless or ambiguous.

1.4 English as a Global Language

English is alleged to be the world's most significant language having the worth of communication, education and language of governance. It's typically been referred as 'global language' and therefore the most frequently educated as a second language around the world. English is additionally referred to as the inter language of the fashionable era and a wide oral communication nowadays.

According to David Crystal (2003) *"Statistics suggest that approximately 1/4 of the world's population is already fluent or content in English"*. It's as a result of English language incorporates a big selection of the lexical units that were taken from Latin, German, French, and alternative European countries. An outsized part of the word borrowing and mixed vocabulary takes as the prominent supply from the French language and the other languages.

The beginning of the twenty first century could be a time of worldwide transition. English is spoken as a linguistic communication by around 377 million individuals and as a second language by around 375 million speakers in the world. The long run of English as a worldwide language can rely terribly for the most part on the demographic, economic, political, and cultural trends in the world. Consistent with some specialists, quicker economic process goes hand in hand with the growing use of English language.

1.5 English in India

English is a political language and incorporates a standing of assistant language, and most vital language for a developing country like India with great lingual diversity. English is incredibly vital in some systems like, academic, business legal, money – in India. As India could be a country with various languages, English is the person among Indians who speak totally different language. With revolution of the Information Technology and most software system and operative systems being developed in the English language, a brand new utility for written and verbal communication in the English language has emerged. English is the most ordinarily oral communication in India after Hindi. Probably, English is the most spoken, read and written communication in India. English symbolizes in Indians minds, higher education, higher culture and better intellect. Indians who recognize English typically mingle it with everybody.

English in India is used not just for act with the outside world, however additionally utilized in systems legal, academic and economic. It's additionally usual among Indians to

suddenly move to talk fluent English in the middle of their conversations. English acts as an imperative 'link' language because of its ethnic and linguistic diversity found.

1.6 The Karnataka Official Language Act, 1963

According to the academic policies of Karnataka, there was a haul of teaching English language within the primary schools. Associate Act clearly states "to offer for the adoption of Kannada as the language to be used official functions of the State and for continuance of the employment of English for dealing of business of the State legislative assembly. Whereas it's expedient to supply for the adoption of Kannada as the language to be used for official functions of the State of state and for continuance of the employment of English for dealing of business of the State legislative assembly when the expiration of the period of fifteen years from the commencement of the Constitution.

English to be continued to be used for official functions till the Government. otherwise directs. Notwithstanding something in section two and while not prejudice to the provisions of Articles 346 and 347 of the Constitution, the English shall be used for all the official functions of the State that it absolutely was getting used before the commencement of this Act till the authorities, by notification underneath section four, otherwise directs in respect of any official purpose specified in such notification." In reality there are more than 2, 50,000 school going children study in English medium schools, more than 2800 English medium schools in Karnataka.

1.7 Basic Functions of Language

Language has three basic functions, such as:

1.7.1 Informative Language Function

The informative language function explains reasons concerning it. The informative function denies or affirms propositions, as in any scientific studies. These sentences have a truth value; thence, they're vital for logic. It is primarily, the communication of data.

1.7.2 Expressive Language Function:

One of the simplest examples for Expressive language function is Poetry, however lot of, standard language discourse is that the expression of feelings, attitudes and emotions, It reports feelings or attitudes of the author or of the topic, or evokes feelings within the reader.

Two important aspects of Expressive language function:

1. to stimulate bound feelings and
2. to express feelings.

1.7.3 Directive Language Function:

This directive function of language refers to the usage of language for happening or stopping overt deeds. It is frequently used for making commands and requests.

1.8 Multimedia and English Teaching

Multimedia refers to the integration of multiple varieties of media. Media refers to different forms of audio, video, data, animation, text, graphics, etc. Multimedia is taken into account to be loosely involved with the creation, composition, presentation, recording, written material and, in general, manipulation, of artifacts from numerous media. Multimedia includes a free kind of usage, permits the employment of form of techniques. This is often mirrored within the wealth of media manipulation, composition and transformational capabilities packaged in transmission authoring tools.

The multimedia assisted teaching is a design that applies and selects teaching through media reasonably, according to the characteristics of teaching aim and target, organically combining with traditional method of teaching (i.e., chalk and talk) to participate the entire teaching process, simultaneously, forming reasonable teaching process and structure to achieve the optimized teaching. The wide application of multimedia technology and its rapid development makes great influence on the teaching and learning English language. Utilizing the multimedia network to increase the active involvement of the students, improve class efficiency and cultivate their ability of using English comprehensively technology for language training through exploring, cooperation, interaction.

Multimedia realizes interaction, openness and autonomy of English grammar learning between teaching and learning. The modernized teaching reflects the themes of our era, with its abundant information and teaching material. Multimedia assisted English teaching display content intuitively and actively to communicate the Students a perceptual knowledge from vivid and large information, generating from pictures and inspiring their thinking so that to deepen their understanding of learning content within a short time.

A major benefit Multimedia Instructional Package provides to the learners is Individualized Instruction, which further enables them to

1. The job is done from their own pace, and it continues when they are fully ready. Multimedia package control students' learning process and they can review whenever they want.
2. The Experience of a patient tutor who reduces intimidation and frustration caused during inability to learn.
3. Experience a teaching that can adapt their abilities and background and present information in different ways.
4. Become actively involved in learning and receive immediate feedback.
5. Become objectively evaluated (tests are based on specific criteria) and have privacy (No embarrassment from making a mistake)

Practical benefit that the students can receive includes:

1. Increased reasoning and retention (research reports increases up to 50 % commonly)
2. Increased success rates and decreased learning time (saves 40 to 50 % learning time)
3. Students will be more attracted towards multimedia and spend more time on work
4. Ensures student participation which is not possible in traditional instructional setting
5. Students who are unsuccessful with the currently available methods have an alternate method to learn skills.
6. Facilitates greater interaction through questioning, expression of thoughts, group learning, discussions, sharing experiences, summarization etc.
7. Promotes joy of learning and minimal peer competition
8. Develops higher motivation and positive attitudes towards learning which are very important for effective learning.

Benefits of Multimedia to the Instructor

Benefits of Multimedia assisted teachers, Supervisors and administrators can receive include

1. Replacing learning activities with simulations, animations and games when traditional teaching does not work.
2. Time saving through reduced teaching, marking and preparation time.
3. Multimedia Instructional Package can be used to teach mundane or routine topics
4. Helps in the learning of new set of skills which energize and refresh instructors.

Benefits of Multimedia to the Educational Administrators

The major benefit of Multimedia assisted teaching is cost saving. The time when instructors are away from job, this can be fruitfully employed to induce learning. Other benefits include

1. Preserving expertise: This can be important when certain experts do not remain as employees
2. Making expertise available: This can be a factor if the instructor or expert has limited time available to promote training.
3. Making instruction consistent: this can be important when reliable high quality instruction cannot be guaranteed.
4. 'Training internal multimedia experts: These skills can be used for future projects.

Hence, looking it to the beneficial factors, the researcher has felt an urge to develop Multimedia Package for developing Critical Thinking Skills.

There are number of methods of teaching English language to students who are learning the language in the school classroom or language learning Centre, each with their own unique pros and cons. There are many difficulties and depending on the teaching situation, setting, and resources available. Any one of these English teaching methods could be right for teaching and learning students.

1.9 Role of Multimedia in creating interest in learning English grammar

There are good number of English language learners increasing day by day in the world. Many of the students who are learning English language, the grammar is one of the difficult parts that they have to learn. In grammar there are so many set of rules and regulations, it has to be learned correctly with out any mistakes. There are many difficulties in learning the grammar, most of the time it will be a boring part of the classroom activity and students tend to lose their interest in the subject very easily. Therefore, Multimedia has a major role in creating interest in learning English grammar and it is an important task of the teacher to make students active and to create 'interest' in the grammar classroom by the use of new multimedia technology.

Teachers have to use different instructional strategies for the benefit of learning language, to create classroom activity interesting and stimulating in order to make the students learn English grammar more effectively. There are New technology based

instructional packages, incorporating number of the computer based learning software programmes such as MEXUS, EDUCOMP are very popular in multimedia teaching learning materials in India; especially multimedia is widely recognized to hold great potential for improving the way that people learn.

As a result, most of the educational institutions are now introducing more and various forms of software based classroom programmes and multimedia presentation driven media into their learning activities. Acha (2009) describes '*These creative presentation systems produce a great deal of excitement and attract students' attention during English-language learning*'.

1.10 Need for the Study

Around the globe, Educational system is under increased pressure to utilize the new Information and multimedia Technologies to teach students the knowledge and skills they need in the 21st century. The simplicity and power of multimedia enriches teacher's creativity and leads to multi-sensory students learning. The use of multimedia especially in teaching English grammar has created novel modes of learning and greatly contributed to the restructuring of instructional environment in schools. Multimedia assisted teaching can prove as a big breather as it is capable of sustaining the interest of the learners, through visuals and audio inputs. It also brings in the elements of the outer world into the classroom. It can help learners in understanding the complex concepts in a very simple way. Today more emphasis is laid upon the experience rather than rote learning

One of the techniques to improve the students' academic needs and to develop English language spoken and grammatically writing skills is by integrating multimedia content in the teaching and learning process. Simple and Easy App for Learning English Grammar (SEALEG) provides the student a chances for interacting with diverse content to make learning easier. There has been steady increase in learning English language as a foreign language among students in different levels. Therefore, the most important need of the study is "to unlock our creativity in order to be creative."

1.11 Statement of the Problem

"Effectiveness of Multimedia Assisted Package on Achievement in English Grammar in Relation to Interest in Learning among Class IX Students".

1.12 Scope of the Study

The scope of the Present study is restricted to selected topics of English grammar to class IX students. The Experiment conducted with 60 students of class IX, divided into two groups i.e., Experimental group and control group by the adaptation of a licensed and approved tool developed by apple.inc namely; Learn English Grammar, Writing, Spelling and Vocabulary – A simpleNeasy package. Tools used in the study were interest inventory of students by the researcher to measure the interest of the class IX students in learning English. The achievement score. The researcher also conducted a pre-test and post-test to know the interest levels of students and effectiveness of learning English grammar by using Multimedia assistance in the classroom.

1.13 Objectives of the Study

1. To identify a suitable multimedia package (a Simple and Easy App for Learning English Grammar - SEALEG) to develop interest in learning English grammar among class IX Students.
2. To compare the effectiveness of SEALEG and conventional method of teaching to know the interest in English grammar learning among class IX students.
3. To study the level of interest in English among class IX students of pre-test control group and pre-test experimental group.
4. To find out the level of interest in English among class IX students of control and experimental group with respect to gender.
5. To find out the level of interest in English among class IX students of control and experimental group with respect to Socio-economic status (SES).
6. To find out the interest level of class IX students of control group in both pre-test and post-test
7. To evaluate the Simple and Easy App for Learning English Grammar (SEALEG) on class IX students of experimental group with respect to gender.
8. To evaluate the Simple and Easy App for Learning English Grammar (SEALEG) on class IX students of experimental group with respect to SES.
9. To compare the levels of interest in English grammar learning experimental group and control group students of class IX with respect to gender.

10. To compare the levels of interest in English grammar learning experimental group and control group students of class IX with respect to SES.
11. To compare experimental group and control group of class IX students with respect to their interest in learning English grammar.
12. To investigate whether class IX students of experimental group retained the interest made English grammar through a Simple and Easy App for Learning English Grammar (SEALEG).

1.14 The Limitations of the Study

1. The study is limited to selected topics of English class IX students and of class IX
2. The study is confined to English grammar teaching based on SEALEG model: a Simple and Easy App for Learn English Grammar, Writing, Spelling and vocabulary – WAGmob module and SEALEG is followed in the present study.
3. The study is confined to experimental group students of class IX of a particular school in Bangalore.
4. In the process of conducting the experiment, the research bias was not controlled.
5. Researcher has not verified whether the application satisfies the cognitive theory of multimedia Learning (CTML) by Richard Mayer.
6. Perform a true experiment with larger population.
7. Train independent teachers to run the true experiment.
8. Run experiment for the multiple schools and multiple types of schools.

1.15 Resume to Succeeding Chapters

The present chapter deals with the introduction of the study. It includes the method of the study, scope of the study, the need for the study, statement of the problem, the objectives of the study and limitation of the study. The second chapter is the review of the literature. The third chapter describes the methodology of the study. The fourth chapter is an analysis and interpretation of data and the fifth chapter deals with summary, recommendations, limitations and the conclusion of the future research. The bibliography and appendices have been included at the end.

CHAPTER 2

REVIEW OF RELATED LITERATURE

2.1 Introduction

The present chapter deals with the review of related literature whereas the previous chapter introduction, method of study, need for the study, scope of study and statement of the problem, limitations, objectives of the study and over view of the chapters are also discussed. In this chapter signifies headings of various studies. With a read to develop an insight into the problem the researcher had to check the literature offered in the field of the problem.

The review of the literature is posted under headings of different studies. With a view to develop an insight into the problem the researcher had to study the available literature in the field of the selected problem for the research. The researcher studies different approaches, treatments, methods, measures, teaching aids and various experimental designs employed by previous researchers in their studies. The use of multimedia in the classroom creates interest in the students and the effectiveness of learning English language. Literature review helps in understanding the correct the design of the research, it involves the systematic identifications, location and analysis of documents containing information related to the research problem.

An intensive review of related literature was done to find out what had been written about the topic they are interested in investigating. These reviews have thrown light on the past research studies carried out in the fields of interest in English grammar learning and technology mediated English teaching.

The literature review is undertaken by the researcher to arrive at the following findings:

1. How to develop interest among students towards learning English grammar.
2. To find out the Multimedia enhanced teaching has rich potential in developing interest among students towards learning English grammar.

The following gaps were identified the review:

1. SEALEG has not been used by any researcher for teaching English grammar
2. Interest in English grammar has not been selected as an independent variable by any researcher to test the tool SEALEG.

2.2 Importance of Review of Related literature:

Gay (1990) describes *'The review of related literature is an important as any other component of the research process'*. In the words of best and Kahn (1989) *"the review of related literature is a valuable guide to define the problems recognizing its significance, suggesting, processing data gathering devices, appropriate study design and source of data."*

Donald Ary (1972) states *'the important functions of related literature in the research project'*. There are Knowledge of related researches which enables the researcher to find out the research problem of the required area. An understanding place his question in perceptive enables the researcher place his question in perceptive. By studying the literature, researcher learns the various types of procedures what previous researchers have done and unintentional duplication can also be avoided. This is knowing of study related review keeps the researcher in a better position to get better results in the research.

2.3 Studies Related Use of Multimedia in Education

Scheibe Cyndy and Rogow Faith (2012) conducted A study on "The Teacher's guide to media literacy; critical thinking in multimedia world." The study focuses on the utilization of media language in instruction, instead of the way to teach media education. A media literacy professional show lecturers the way to integrate media literacy across the programme in the slightest degree levels and teach students to be the critical thinkers of present day society.

The approach shows lecturers the way to determine places wherever media literacy ways might improve instruction, student engagement or student performance and develop custom lessons for those requirements.

Mohammad Khatib, Kamran Mehrgan, (2012) conducted a study on "Achieving Critical Thinking Skills through Reading Short stories." This study aims at paving the ways to create students achieves critical thinking skills through reading short stories.

The main purpose of selecting literary short stories is to determine critical thinking skills in students with the assistance of literature during which literature has been checked out as an object of study and this field was very little treated as an applied field in the alternative aspects of acquisition, particularly critical thinking. The study illustrates that critical thinking

skills will be learned at any age, reckoning on the psychological feature development of the people. The result shows that reading literary short stories will establish critical thinking in students and literature is a useful tool in instructional settings generally and acquisition specifically.

Myrna Elyse Diamond (2011), has conducted descriptive case study which investigates “The Role of Narrative in multimedia Learning”, University of Nevada. The study discovered how lecturers applied their understanding of narrative and new constructivist technologies, to design multimedia presentations for instruction. The study looked specifically at the cognitive strategies, visual narrative ideas, and techniques of illustration³lecturers used in the course of learning the way to design a multimedia instructional presentation. The findings of this study recommend the worth of using visual narrative ideas and techniques of illustration to support lecturers in their approach to the design of a multimedia instructional presentation.

The implications of the study have for each the fields of multimedia learning analysis and teacher education in terms of learning how to design multimedia instructional presentations effectively. Skilled development in learning how to design with computer graphics and new constructivist technologies is recommended.

Ostenson Jonathan William (2010), Navigating the digital narrows: Teaching students to read critically on the Internet. This study examines the challenge to students as they need to exercise necessary skills of analysis and significant thinking whereas reading so as to create sound judgments concerning the credibility of sources they notice on the Internet. The study explores 2 approaches to teaching these skills to high school students. One approach targeted on using the standard list to show students criteria of appraising judgments; the opposite approach targeted on methods of sourcing and corroborating as well as using internet tools to assist students build these judgments.

The results showed that each instructional approach was effective in boosting students' accuracy in creating judgments. Those in the 1st instructional approach showed redoubled talents to explain their choices using ancient criteria of credibility, recommend that a concrete tool sort of a checklist could facilitate all students to learn these skills in effectively. Each team additionally showed significant increase in their ability to see at supply information as a way of creating judgments.

Meenu Pandey (2010) has conducted study on “the Use of the Multimedia in the Teaching and Learning of English Language.” This study tries to research the requirement of multimedia technology to language teaching and additionally brings out the issues faced by using these multimedia. There are newest technologies in teaching and learning of English language like Computers, the Internet, Electronic Dictionary, Email, Blogs and mobile phones plays an awfully effective role. Computer technology and Internet are new devices used in education methodology. Next to its industrial importance, it's seen as the pedagogical tool for the freelance analysis, and academics. The last 20 years have witnessed a revolutionary modification attributable to the onset of technology; the way teaching and learning is completed. This rapid growth of multimedia technologies has offered an improved pattern to explore the new teaching model. The paper explores the appliance of network technology into English people instruction. Using multimedia to make a context to show English has its exclusive advantages. It additionally aims to create English lecturers responsive to the methods to use it in a good manner. So as to use this new teaching mode to serve English Language teaching more effectively, we should always observe use of the benefits and avoid the disadvantages to attain higher results. The author points out that the network English teaching can encourage the learners' interest and produce an improved English communicative atmosphere for college students and increase the teaching potency of the language teacher.

Susikaran (2010) has conducted analysis on “The Use of Multimedia in English Language Teaching.” Teaching through Multimedia method has practiced in school English teaching wider and wider. It's contributed lots to higher teaching quality. Chalk and talk pedagogy is an outdated mode of teaching English language. The researcher envisages that the teachers should always modify our teaching ideas and acknowledge its impersonal attribute united to pedagogy. Some utilize trendy education technology moderately to satisfy the target of school English teaching. short, multimedia pedagogic application has the potential to the levels of interest as it will replace traditional teaching strategies and that we can apply many strategies along in one category.

Van Den Berg, Ellen, Jansen, Leanne and Blijleven Peter (2004) undertook a study Learning with Multimedia Cases: An analysis Study, that investigates a case-based interactive system, delivered through multimedia case to be used in pre service teacher education. The study of Multimedia technology will remove the gap between theory and practice in teacher

education. This research shows that it absolutely was troublesome for the participants to mix bits of information located inside completely different parts of the multimedia case. Case-based learning stimulates reflective and demanding thinking amongst pre service teachers as the particularities of the case has general ideas.

Claudet Joseph (2002), conducted a study on “Integrating School Leadership Knowledge and Practice Using Multimedia Technology: Linking National Standards, Assessment, and Professional Development.” This study discovers an outline perspective on the potential edges of applying multimedia technology to revamp and invigorate the career-long performance assessment and skilled learning of college leaders. The study has centered on using available multimedia technologies to develop school leadership assessment and structure learning case simulation resources for school principals and other school leaders. The result shows that the multimedia technology enhances the reflective thinking, leading and learning for all school leaders.

Rebecca John McGraw, Kathleen Lynch, Yusuf Koc, Ayfer Budak, Catherine A. Brown, (2007) conducted a study on “The multimedia case as a tool for skilled development: An analysis of on-line and face-to-face interaction among arithmetic pre-service teachers, in-service teachers, mathematicians, and arithmetic teacher educators.” This study considers the potential of multimedia cases as tools for teacher skilled development that examines on-line study that occurred teachers’ academics, mathematicians, and arithmetic teacher educators. The study focuses on the difficulty of session room is realized in the study of the multimedia. The Analysis of results to study across cluster the member kind unconcealed variations that recommend that the range of backgrounds and experiences of cluster members will mix in ways in which support wealthy and demanding discussions of arithmetic, teaching, and learning.

Wu-Yuin Hwang, (2007) conducted an experiment “Multiple Representation Skills and Creative Effects on Mathematical Problem Solving using a Multimedia Whiteboard System.” The study explores student multiple illustration skills and creative thinking in resolution mathematical issues once supported by a multimedia system whiteboard system. The subjects were primary school students that were tested and elect as wonderful students in arithmetic. Twenty-one numerical and pure mathematics issues got to the scholars in the experiment. The educational activities together with certain solution such as peer reviewing and response is expedited by the designed multimedia whiteboard system.

2.4 Studies Related to Multimedia Assisted Teaching

Jason D Ellis (2010) conducted a study on “student’s interest using modern technology in the classroom uses the methods of Observation, Questionnaires.” The study comes with the key findings of using multimedia technology in the class room influences and stimulates students’ interest and learning.

Damodaran and Renga Rajan (2010) researched on ‘Innovative Methods of Teaching’. Researchers Evaluation relies on ancient methods of teaching similarly as multimedia teaching to form a shot in imparting knowledge in students.

Ishita Badiyani (2008) conducted a groundwork on ‘Comparison and development of the effectiveness of computer assisted English Language Learning Package and Computer Aided English Language Learning Package.’ The essential objectives of the study were to teach action verbs in English grammar and to create a computer Aided English Language Learning Package and to know its effectiveness of the computer Aided English Language.

Chaudhary and Hemchandrachayra (2007) conducted study “A Comparative Study of Programmed Learning and Computer Assisted Learning on ‘Direct-Indirect Speech’ for the pupils of Standard - IX in English.” Major finding of the study: a result for the test conducted on English grammar on “direct-indirect speech” for class IX students. The final test result declare that computer assisted Learning was more practical than the programmed learning for the subject of ‘direct- indirect speech’ of class IX students.

Harshad Mehta (2007) researched on “the Development and Effectiveness of computer assisted Instruction Programme for Teaching of Adjective in English Language.” The study focuses on developing a computer based Instruction package to show the Adjectives of English grammar. The effectiveness of the computer assisted Instruction Package in terms of the action of scores obtained by the pupils on the action test created by the teacher. To check the pupil’s reactions towards the educational the educational through computer assisted Instruction Package. The experiment was conducted by two equal teams solely by post-design. The Findings of the selected package by the researcher are: computer assisted instruction package developed to show Adjectives in English grammar to the pupils of class X was effective with reference to the pupils’ tutorial action. Pupils’ response was very favorable towards learning through the computer assisted tutorial package.

Sakhiya (2006) had conducted a study “the Effectiveness work card and programmed learning with reference to the self-learning techniques to teach English grammar.” The main

focus of the study was to Prepare the work card material and programmed learning material on the three main units of English grammar. The tool to analyse test prepared by the teacher is to study the effectiveness of work card material and also the programmed learning material on action level and sex of the pupils as a procedure of the study of the pupils of Gujarati medium of IX standard of the schools. The boys having low level action in English the programmed learning method and also the lecture method were equally found effective. Results observed identically for the girls who have high level action and low level action, in keeping with.

Badiyani (2005) researched on “Development and Try-out Multimedia Assisted English Teaching Package for Teaching of Action Verbs in English Language.” The target of the research was an optimistic multimedia paradigm towards a lot of realistic paradigm to realize the effectiveness of multimedia for instruction in the class of VII students. The aim of the study relies on the subsequent objectives so as to develop a Multimedia assisted English Teaching Package (MAET) to show it was an effective package. This analysis was of experimental kind. Throughout the experiment three teams of class VII with twenty-nine students in each group. The sample selected was to faculties from Rajkot city of that one of these two faculties were selected for experiment and also the different for replication. an educator created an accomplishment test prepared and administered a post test on all the three teams after the section of treatment.

Acharya (2005) conducted study on “Effectiveness of games, work-card and self-instructional material on English language learning.” The study comes with the key approach that using multimedia technology in the session room stimulates and influences the educational interest of pupils. To check the varied opinions of pupils’ interest in multimedia content on overall learning experience by using ELT, the most objective and purpose of the study is to match the effectiveness of multimedia content to ELT in terms of the accomplishment in learning English grammar among the pupils. Important findings of the study are: there was no vital variation of accomplishment of the pupils among the three teams who studied through games. This result favour the replication of the experiment in terms of the experimenter’s coaching.

Zyoud (1999) conducted a research on “Development of Computer-Assisted English Language Teaching for VIII Standard Students.” The main focus of the study is to conduct and create a computer assisted English teaching programme for standard VIII and to test the

effectiveness of the computer assisted English language teaching programme on the pupils' accomplishment in the terms of the English grammar. The Procedure of the study is regarding Gujarati medium students who study VIII standard from two faculties to function a sample for the study and also the effectiveness of the computer assisted English language teaching programme in terms of pupils' accomplishment of all the study with reference to their interest, achievement and perspective.

2.5 Literature on Interest in Learning English Language

Dk Yusimah Pg and Hj Amjah (2014) the article 'A Study of Teachers' Strategies So Develop Students' Interest towards Learning English as a Second Language' This study focuses mainly on English language teaching as a second language may be a quite advanced task for the instructor. Learning a language brings a lot of gratifying and fun for school kids to find out. Lecturers got to be more practical in teaching ways so as for school kids to know higher in learning English. Teacher plays a very important role to facilitate pupils' interest in learning English language. The research was conducted as a Survey method. Researcher distributed the questionnaires to the lecturers who teach English language and for few students in very primary faculties in Brunei Darussalam. Findings of the research show that use of multimedia technique in the research develops the interest in learning the English language.

Tan Bee Tin (2013) explains the interest of the pupils learning English Language in his article, "Exploring the Development of Interest in Learning English as a Foreign Language." This study examines a replacement abstract perspective for understanding the students' engagement and interest in learning English Language. The research investigates maturation and history that trigger or hinder the interest in learning English. He experimented students and invited them to reflect on critical moments that triggered their interest in learning English and their understanding in learning English language

Sindkhedkar (2012) conducted analysis on the "objectives of teaching and learning English in India." The main aspects of teaching English language in Indian context, shouldn't be 'producing bookworms or 'linguistic robots'. The study focuses on importance is to encourage students by making associate awareness among them relating to the importance of English and later step by step facilitate the pupil to realize their goal. The teachers' task here is to create the pupil to notice that gaining competency in English he can hold the master key

to success in the present days.

Ravi Sheorey (2006) conducted a study on “Learning and Teaching English in India” The analysis was concerning the current polyglot societies to give new guidelines to the field of Applied Linguistics through a careful investigation of polyglot Societies. Sheorey achieves this twin aim by applying well established theories of second language acquisition to polyglot Indian context with a meticulous and skilled approach to the immense assortment and perceptive interpretation of knowledge to produce a transparent image of English grammar learning in India and therefore the interest of learners of English Language increases.

Kennedy (2006) the article “Literacy development of linguistically diverse first graders in a mainstream English classroom: Connecting speaking and writing.” Discusses a couple of qualitative study of the primary graders and interest specifically learners of language in a very thought session room.

Alanis (2004) conducted analysis on “Effective instruction: Integrating language and literacy.” The study focuses on interest and attainment talent on the people in learning English language. He believes that developing attainment skills are wherever the action difference is of main focus. To remove the gap, the subsequent factors are known and mentioned. Classroom setting with the use of technology is an enrichment program and student are going to be triggered with interest. Learning setting, a secure and trustworthy atmosphere, all the facilities such as library, different language pictures, books which are created by students and self made group texts, and a home program are needed for creating interest towards learning the English language.

Hernandez and Garcia (2003) conducted a study “making content instruction accessible for English language learners.” The concept of the study is predicated language instruction is that the integration of assorted objectives such as different language skills and its development in in the gradual process of the leaning the language. There is content language and discourse. The study mentions about the secure language. It has the many requirements to learners of the language such as different tasks in language learning, video and picture contented visuals which are utilized in the classroom of the language learning. Findings show that Language instructions are more approachable to the learners of the language.

Crandall (1994) had conducted analysis on “Content-centered language learning.” the study provides an overall view of variety of content to learn language is available and how it

has to be approached in learning the language. The research discusses mainly about the Content based instruction that usually takes place in the classroom of language and how this content in the language teaching more important in delivering the lectures to the students. There are two different kind of approaches in the study. One is theme based approach and the other is the content based approach. Here researches utilizes the correct approach to integrate the content in the learning of language. The study concludes with the suggestions that students can make use of content based approach and the new content to add to show the development of content as the language always grow with the new content.

Mansoor Ali (2009) conducted analysis on “Language Teaching in India -The present Day Challenges.” This study deals with different kinds of languages available in India. Researcher’s main focus is on evaluating the interest of the students in learning the language in the context of India where there are many languages and different challenges. In order to make the language learning interesting, there are language games were interested by the researcher. The paper deals with different kinds of approaches to the currant Indian context and how to approach them to make the students to learn the English language. Many past approaches are mentioned in the research paper to show that there is a need to address the challenges in the Indian context to teach and learn English language when students learn the English language as first language or the second language.

Gunderson (1991) absolutely advocates for the language through content movement within the analysis “literacy instruction: A guidebook to theory and practice”. The main target of this work is on reading instructions. Researcher observation on the study show the importance of learners to grasp the knowledge of language in one level and if they are unable to grasp it has to be dealt in second educational level. In the second level, researcher suggests different types of methods which include other grammatical structures and reading strategies to be integrated. The reading goals and technical reading skills should be acquired by the language learner to practice any language effectively.

Larsen-Freeman (2000) conducted study on variety of content based approaches to teach the language in his book “Techniques and principles in language teaching.” Language learning is a process through which, how the content is presented to the students and the way the students take up the language to learn. Language sets its goals through the content and it suggests the different types of methods which will be found in the classroom learning. A very prominent feature of the study is the content, it is cognitively demanding and integrates

several aspects of communicative ability to learn the language.

2.6 Conclusion

From the about studies, it can be concluded that are new technologies every day in the teaching of English to secondary students. There have been many studies related on Multimedia based teaching and most of them deal with the improvement of performance through such interventions. The studies revealed that multimedia based interventions for school students have lead to the increase in achievement, interest, motivation and also has reduced stress and anxiety in learning. Further, Multimedia enhanced teaching has also empowered teachers to increase task motivation and lay foundation for a dynamic school technology.

Technology interventions can make instructors as an empowered actors and they can freely exercise the way to judge the topics efficiently and all the non routine challenges come across in the classroom. Thus the researcher finds that the studies supports the use of multimedia assisted teaching package SEALEG for teaching grammar in order to create interest among the learners.

In the next chapter, the methodology of the research would be presented which includes discussions of objectives, operational definitions, hypotheses, research design, sampling design, variables of the study and the data collection procedure and statistical techniques used for the analysis of the data.

CHAPTER 3

METHODOLOGY

3.1 Introduction

In this chapter, the methodology which is adapted in this present research study is discussed, and the terms and concepts have been operationally defined. Methodology is an important chapter for research in education because it occupies the central place the research, without which research findings have no proper explanation. The hypothesis and variables of the study, have been stated for empirical validation. The procedure followed in selecting the sample, tool adapted and used for conducting the experimental study, and statistical technique used are also presented. An experimental design is a plan for assigning experimental units to treatment levels and the statistical analysis associated with the plan (Kirk, 1995: 1). The main aim of this research is to study the effectiveness of English multimedia assisted teaching and interest in learning English grammar among class IX students.

Methodology decides the nature, plan and procedure of the study. As such it is regarded as the main body of the research. It is desirable to have proper methodologically designed research plan. An appropriate methodology can help in getting proper research outcomes. This chapter presents the methodology adopted by the investigator to realize the objectives of the present study. The present study is an experimental study. Methodology meant for quantitative research is followed for the present study being under the umbrella of experimental study. The present chapter includes research design of the study, population, sample, tools and techniques used for data collection, and procedure of data analysis. For better understanding of the methodology of the present study, the objectives and hypothesis of the present study are given as follow.

3.2 Statement of the Problem

“Effectiveness of Multimedia Assisted Package on Achievement in English Grammar in Relation to Interest in Learning among Class IX Students”.

3.3 Operational Definitions of the terms used in the Study

3.3.1 SEALEG: A Simple and easy App: Learn English Grammar, Writing, Spelling and vocabulary mdoel– WAGmob)

The Model of Kalpit Jain (2014) SEALEG stands for a Simple and Easy App: Learn English Grammar, Writing, Spelling and vocabulary – WAG mob. It is a life time on the go English grammar learning computer based multimedia application.

3.3.2 Achievement in English Grammar:

The scores obtained by the students in the pre test and post test are considered as student's achievement in grammar.

3.3.3 English Grammar

English Grammar is a structure and entire system of a language in general, usually taken as syntax and morphology and some times phonology and semantics. (Oxford English Dictionary)

English Grammar refers to the entire scheme and structure of a language that consists of syntax and morphology (including inflections) and semantics.

In the present study English grammar refers to the grammatical components structured and graded for class IX standard students of State Board of Karnataka.

3.3.4 Interest in Learning

Interest is defined by H. Schiefele et al. (1983) '*the relatively long-term orientation of an individual or a group towards a type of object, an activity, or area of knowledge*'.

Thomas Corneil (2002) defines '*learning is a lifelong process of gaining and using information presented to us. Learning is only successful when the information gained is used and understood*'.

Interest refers to the positive attention paid by the student during and after the study in with respect to learning the subject.

➤ Justification for selecting Interest as a variable;

Student's interest is one of the most important elements to stimulate the learning of the English language. Hence the meaningful and interesting activities are on the support of teaching, learning material, by which students will be interested in learning English. The study is intended to investigate the impact on SEALEG on student's interest towards learning the English language.

3.3.5 Socio Economic Status (SES)

APA's SES office publications, (2009) '*Socio economic status is commonly conceptualized as the social standing or class of an individual group. It is often measured as a combination of educational, income and occupation*'.

The students' SES has a direct relationship with Multimedia exposure. The present study is conducted with the objective to compare SES in rural and urban setting. In the present study, a class IX student is the one from the state board school, by name Christ the king school, situated in the sub-urban areas of the city.

➤ **Justification for selecting SES as a variable;**

In a country like India, Students of High SES have access to Tabs and other digital devices where as those of low SES do not. The school has students from different levels of socio-economic backgrounds. In order to equate the groups of control and experimental with respect to this factor, this variable was considered.

In the present study the researcher has taken the assistance of SEALEG and integrated it with class IX pedagogical aspects. Therefore, the researcher has used the terminology Multimedia Assisted Teaching as SEALEG. The following factors were considered during the selection of SEALEG package:

1. Necessary technology to use this package including sufficient computer memory, LED Projection device for large classroom.
2. Perspective command of the package and its uniqueness and potential to create interest among class IX students in learning English grammar.
3. Blending various activities along with package to enhance student learning,

3.4 Objectives of the Study

The present study was designed keeping the following objectives in view:

1. To develop/prepare a Simple and Easy App for Learning English Grammar (SEALEG) *package to know the interest in learning English grammar among class IX Students.*
2. To compare the effectiveness of SEALEG and conventional method of teaching to know the interest in English grammar learning among class IX students.

3. To study the level of interest in English among class IX students of pre-test control group and pre-test experimental group.
4. To find out the level of interest in English among class IX students of control and experimental group with respect to gender.
5. To find out the level of interest in English among class IX students of control and experimental group with respect to Socio-economic status (SES).
6. To find out the interest level of class IX students of control group in both pre-test and post-test
7. To evaluate the Simple and Easy App for Learning English Grammar (SEALEG) on class IX students of experimental group with respect to gender.
8. To evaluate the Simple and Easy App for Learning English Grammar (SEALEG) on class IX students of experimental group with respect to SES.
9. To compare the levels of interest in English grammar learning experimental group and control group students of class IX with respect to gender.
10. To compare the levels of interest in English grammar learning experimental group and control group students of class IX with respect to SES.
11. To compare experimental group and control group of class IX students with respect to their interest in learning English grammar.
12. To investigate whether class IX students of experimental group retained the interest made English grammar through a Simple and Easy App for Learning English Grammar (SEALEG).

3.5 Hypotheses of the Study

1. There is no significant difference between pre-test scores of Control Group and Pre-test scores of Experimental Group with respect to learning English grammar.
2. There is no significant difference between the pre-test scores of interest in learning English grammar among both Control and Experimental groups.
3. There is no significant difference between pre-test and post-scores of experimental groups in learning English grammar by using SEALEG
4. There is no significant difference between pre-test and post-test scores of control group in learning English grammar by using the traditional method

5. There is no significant difference between pre-test and post-test experimental group in interest towards learning English grammar by using SEALEG
6. There is no significant difference between pre-test and post-test of control group in interest towards learning English grammar by traditional method
7. There is no significant difference between the scores of post-test in learning English grammar through SEALEG by male and female students of experimental group
8. There is no significant difference in post test scores of experimental group among students belonging to low, average, and high SES.

Alternative

There is a significant difference in post test scores of experimental group among students belonging to low, average, and high SES.

9. There is no main and interaction effect between gender and levels of SES on post test scores of experimental group in learning English grammar using SEALEG.

3.6 Research Design

The present study was experimental in nature. As the sample of the present study was taken stratified random sample, the Pretest-Posttest Equivalent-Controlled group design was followed in this research. Diminter, Dimitovi and Philip Rumrill Jy., (2003. 159) writes about *“the pretest and posttest designs are widely used in the educational and behavioral research, primarily for the purpose of comparing groups or measuring the experimental treatments.”* Best and Kahn (1996) describes, *‘this design is often used in classroom experiments when experimental and control groups are such naturally assembled groups as intact classes, which may be similar’*.

In the process of conducting the experiment, the selection the samples is done on the basis of stratified random sampling. With this randomized techniques, all the conditions of experimental group and control group looks similar. But the experiment group is given the treatment ‘T’ where as the control group is not exposed to and treatment. *“Maturation and the history are the major problems for the internal validity in this kind of experimental design”* writes Dimiter, Dimitov and Philip Rumrill Jy., (2003. 160). Most of the times maturation occurs when there is a change of characters in the experimental study thus the posttest scores

may get affected, similarly history occurs similarly the characters' experience same kind of similarity in the process of experimentation and result in their pretest scores.

The design of the study is presented as follow.

O1 X O2

O3 C O4

Where, O1 and O3 are pretest

O2 and O4 are posttest

X stands for Experimental Group and

C stands for Control Group

Following this design, the achievement of students in English grammar was measured before and after the experimentation. The similar procedure was followed for control group. The experimental and the control groups were made equivalent on the basis of their pre-test score in English grammar. Initially in the experimental and control group there were 35 and 37 students respectively. After making the groups equivalent on the basis of pre-test score, 30 students from each group were considered as the sample for the present study.

3.7 Sampling Design

The investigator intended to obtain 60 students from the state board school by name Christ the king school in the suburban area of Bangalore. The school was selected as per the requirements of the researcher to make the study feasible. The following facts were taken into consideration while selecting the suitable sample for the experimental study. The intervention was administered to the students over a period of two months with ten sessions in the week.

1. Co-operation and readiness of the management and the whole hearted consent from the staff and students
2. Minimum thirty students were identified in each section of the class to make teaching feasible to the experimental group and the control group.
3. Punctuality and regularity was on the part of the students was expected.
4. Students are from the suburban Bangalore
5. English is their second language in the school.
6. Availability and flexibility of time schedule in the school.

Table 3.1 Showing the number of Students selected for the experiment and their gender.

Summary	Boys	Girls	Total
N	32	28	60

3.7.1 Selection of the Sample

As the present study was experimental in nature and considering the feasibility of data experimentation and data collection, the sample of the present study was selected purposively. For this purpose, researcher selected Christ King School, Kowdenahalli, Ram Murthy Nagar, Bangalore as the sample school. This school was selected with the purpose of getting all the required facilities necessary for the experimentation on multimedia package. Two sections of standard IX section A and Section B having 35 and 37 students respectively during the academic year 2010-2011 were selected for control group and experimental group respectively. Both the experimental and control groups were exposed to pre-testing on English grammar achievement test. On the basis of pre-test score in English grammar achievement test both the groups were made equivalent. Each pair of students one from control group and one from experimental group having same pre-test score in English achievement were considered for the sample and assigned for the respective group. In this process 30 pairs of students with equal marks in pare, 30 students from control group and 30 students from experimental group were found and assigned for the respective groups. In this process the experimental and control groups were made equivalent with 30 students in each group.

3.7.2 Application of Treatment

Presentation included giving explanation of each topic with enough examples so that the students will be clear about the concept of each topic. Graphics in the forms of animation and

simulation were also added with the presentation. Branching style of programmed learning was followed while preparing the multimedia package. Provision of testing was there after each topic added with reinforcement and fun. The concept of play way method was also added in the prepared multimedia package. The selected Multimedia Package has scope for the teacher to be the facilitator and guide wherever one wants to get involved in the process of teaching. It included the examples related to each topic with theoretical and structural aspects during the explanation. The pictures used in the developed package were related to the life like situations that children come across in their life or they have the direct or indirect experiences of thereby. The developed package was shown to the experts in the area of education technology and the English language teaching. The suggestions from these subject experts were duly incorporated time to time by the researcher which resulted into present form of Multimedia package. The pilot study of the package was done with the standard IX Saint Gaspar Vidyalaya English medium students of another school and on the basis of the reaction of the students, necessary modifications were done for the package.

3.8 Variables of the Study

An attentive review of literature was made to identify the relevant variables suitably for the present study some selected experimental variables are described below, in order to add precision and avoid ambiguity in the study. It is either a result of some force or is itself the force that causes a change in another variable. An experimental study basically has four different types of variables: independent, dependent, moderate and controlled. Based on a study conducted in the area of effectiveness of multimedia assisted teaching the following variables selected for the study keeping the objectives in mind.

The variables of the study are classified into independent, dependent, moderate and demographic variables.

- | | | |
|----|------------------------|---|
| 1. | Independent Variable : | A Simple and Easy App for Learning English Grammar (SEALEG) |
| 2. | Dependent Variable : | Achievement in English Interest |
| 3. | Moderate Variable : | Interest |
| 4. | Control Variables : | Socio Economic Status (SES) and Gender |
| 5. | Demographic Variable: | Gender (Boys and Girls) |

➤ **Constructs of the study**

Effectiveness: Effectiveness of **SEALEG** in the present study refers to the positive impact that its usage will make on the class IX students' achievement in English Grammar.

3.9 Tools of the Study

The researcher used the standardized tools which are readily available for this study.

3.9.1 Tool Adapted for the purpose of the research:

A Simple and Easy App for Learning English Grammar (**SEALEG**), Writing, Spelling and vocabulary – **WAGmob**.

The purpose of the research is to know the interest of the students of class IX in learning English grammar. The investigator adapted intervention module from **WAGmob** apple.inc in order to teach the students effectively and to know the interest of students in learning English language. The intervention consisted of 20 chapters to learn English grammar and 20 chapters for the review and test created to various components of English grammar. These 40 chapters were administered for the period of eight weeks and directly aimed at effectiveness of multimedia package in learning English language grammar with interest

3.9.2 Validation of the tool and Constructs of Validation

Field Experts: Teachers using technology based English teaching with 20 and above years of experience.

Pedagogy Experts: Teacher Educators specialized in English Pedagogy with 10 and above years of experience

Contextualization in a sub urban context: The students of rural and urban students attend the school where in certain local community elements need to be intertwined in the pedagogy so as to cater to the needs of the students attending the classes. Five Field experts and Five Pedagogy experts were consulted for validation of the tool to contextualize the same in a suburban school context. The **SEALEG** package cannot be modified as it is a pre-created package, the experts suggested to use inductive methods and interactive approaches in teaching.

3.9.3 Tools developed for the purpose of the research:

The researcher Constructed two modules namely Pretest and Posttest in English grammar. The researcher has developed Tools for the purpose of conducting the experiment:

The researcher Constructed a test for assessing the achievement in grammar among class IX students namely Pretest and Posttest in English Grammar. The intervention for the research contains 20 chapters of English grammar and 20 chapters of review and test. These reviews and test to know the daily interest of the students in learning English grammar. The research uses inductive deductive strategy to teach the same to the students.

Unit I

Unit I Deals with the basic introduction to English grammar and the general introduction to parts of the speech. Lesson 3 deals with nouns and different kinds of nouns. The formative assessment I was conducted to know the interest and achievement of the students in the English grammar on the last day.

Table 3.2 Shows the contents of unit one for the treatment of experimental group

Lesson 1	Directions to English grammar
Lesson 2	General direction to parts of the speech
Lesson 3	Nouns different types of nouns, formative assessment one

Unit II

Unit II Deals with the Pronoun, Verb and Adverb of English grammar. Lesson 4 deals with Pronoun, types of Pronoun, subject Pronoun, object pronoun comparing pronouns and choosing the right subjects and objects. Lesson 5 deals with different kinds of verbs, tenses, person and number, active and passive voices, moods and verb functions. Lesson 6 deals with adverb, adverb functions and adverb comparison. The formative assessment II was conducted to know the interest and achievement of the students in the English grammar on the last day.

Table 3.3 Shows the contents of unit two for the treatment of experimental group

Lesson 4	Pronounce
Lesson 5	Verb
Lesson 6	Adverbs, formative assessment II

Unit III

Unit III Deals with adjective, Prepositions of English grammar and the third Formative assessment. Lesson 7 deals with adjectives, types of adjectives, adjective examples, adjective order and degree of comparison. Lesson 8 deals with prepositions, The formative assessment III was conducted to know the interest and achievement of the students in the English grammar on the last day.

Table 3.4 Shows the contents of unit three for the treatment of experimental group

Lesson 7	Adjectives
Lesson 8	Prepositions, Formative assessment 3

Unit IV

Unit IV Deals with Conjunctions, interjections, Punctuation marks, of English grammar and the fourth Formative assessment. Lesson 9 conjunctions, types of conjunction and types of coordinating conjunctions. Lesson 8 deals with interjection and examples, The formative assessment IV was conducted to know the interest and achievement of the students in the English grammar on the last day.

Table 3.5 Shows the contents of unit four for the treatment of experimental group.

Lesson 9	Conjunctions
Lesson 10	Interjections
Lesson 11	Punctuation marks, formative assessment 4

Unit V

Unit V Deals with the tenses, active and passive voices, modals and phrases of English grammar. Lesson 12 deals with Tenses and different types of tenses. Lesson 13 deals with voice, Active voice, passive voices, Active and passive voice conversations. Lesson 14 modals, commonly different usage of modals. . The formative assessment V was conducted to know the interest and achievement of the students in the English grammar on the last day.

Table 3.6 Shows the contents of unit five for the treatment of experimental group

Lesson 12	Tenses,
Lesson 13	Active and passive voices,
Lesson 14	Modals and phrases, formative assessment 5

Unit VI

Unit VI Deals with the clauses, Idioms of English grammar. Lesson 15 deals with clauses, kinds of clauses, Independent and Dependent Clauses, adverbial Clauses, adjective clauses, and dependent Clauses summary. Lesson 16 deals with idioms and different idioms with the meanings. The formative assessment VI was conducted to know the interest and achievement of the students in the English grammar on the last day.

Table 3.7: shows the contents of unit six for the treatment of experimental group

Lesson 15	Clauses
Lesson 16	Idioms, formative assessment

Unit VII

Unit VII Deals with English grammar writing and writing systems. Lesson 17 deals with grammar and writing. Topics covered in this chapter are: avoid verbose language, words to avoid, phrases to avoid, focus on positive. Lesson 18 deals with writing systems, and correct way of writing English language. The formative assessment VII was conducted to know the interest and achievement of the students in the English grammar on the last day.

Table 3.8 Shows the contents of unit seven for the treatment of experimental group

Lesson 17	Grammar writing
Lesson 18	Writing systems, formative assessment 7

Unity VIII

Unit VIII Deals with Common errors and commonly confused words English grammar. Lesson 19 deals with common grammatical errors, focus on parallelism, Place nouns with nouns, place verbs with verbs, place adjectives with adjectives, follow parallel pairs, ensure parallel comparison, ensure proper pairing of words, and avoid misuse of commas. Lesson 20 deals with commonly confused words in English language. The formative assessment VIII was conducted to know the interest and achievement of the students in the English grammar on the last day.

Table 3.9 Shows the contents of unit eight for the treatment of experimental group

Lesson 19	Common errors
Lesson 20	Commonly confused words

3.10 Procedure of the Experimental Method Undertaken

The procedure of experiment method was under taken was in the following way for the period of two months:

Phase I: A letter of permission to conduct the research in the selected schools was forwarded to principal of the school.

Phase II: The Permission for adapting and using the apple.inc based application for the experimental research.

Phase III: The validation of the content is done by the field experts. The experts were of the opinion that the content and the statements of the test are adequate and relevant to know the interest and the effectiveness of students in learning English grammar.

Phase IV: The school was selected from a semi urban area of Bangalore, a place called Kowdhenahalli, Ramamurthi Nagar - Bangalore. The school name is CHRIST THE KING SCHOOL. The Number of students selected for the research is sixty of class IX.

Phase V: Using the stratified random sampling method the class is divided in to two groups namely control and experimental groups. Each group has 30 students of class IX.

Phase VI: The researcher administered SES (Socio Economic Status) scale in three levels. (Namely, High SES, Moderate SES and Low SES). SES scores and the gender are also considered in forming the experimental and control groups.

Phase VII: Entry level interest of class IX students was collected through the Administration of interest inventory in learning English language.

Phase VIII: The researcher administered the simple English grammar pre-test to both the groups before administering the multimedia intervention module to the experimental group.

Phase IX: Treatment was given to experimental group by using a Simple and Easy App for Learning English Grammar (SEALEG) package developed by Apple. inc and the Control

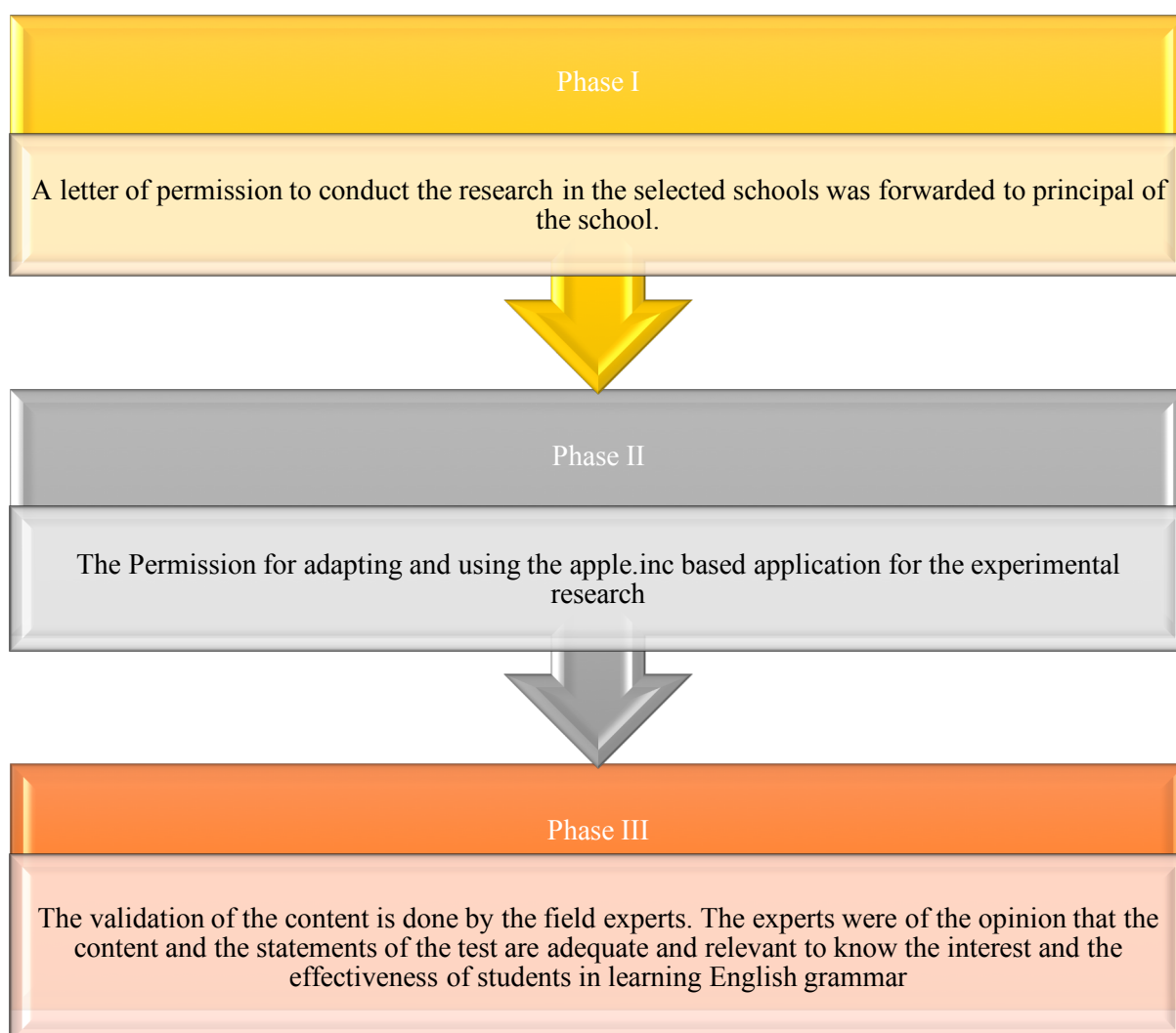
group was taught in the traditional method. Researcher has administered the SEALEG package to the experimental group and traditional methods of teaching was followed for the control group.

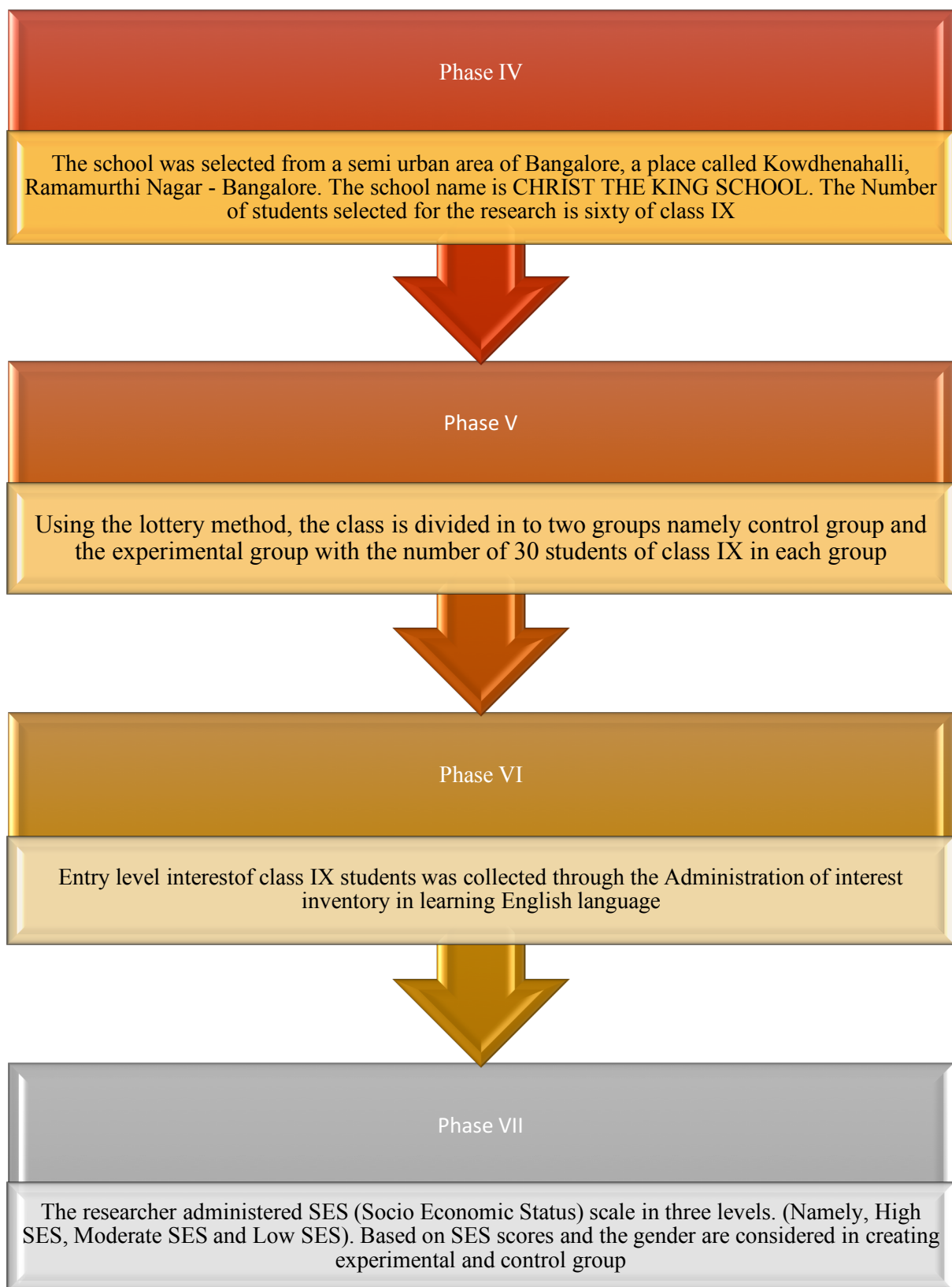
Phase X: Post administration of the SEALEG, the post-test in English grammar is administered to both the groups to determining the effectiveness of the intervention and the interest in learning English grammar by students of class IX and to collect the data.

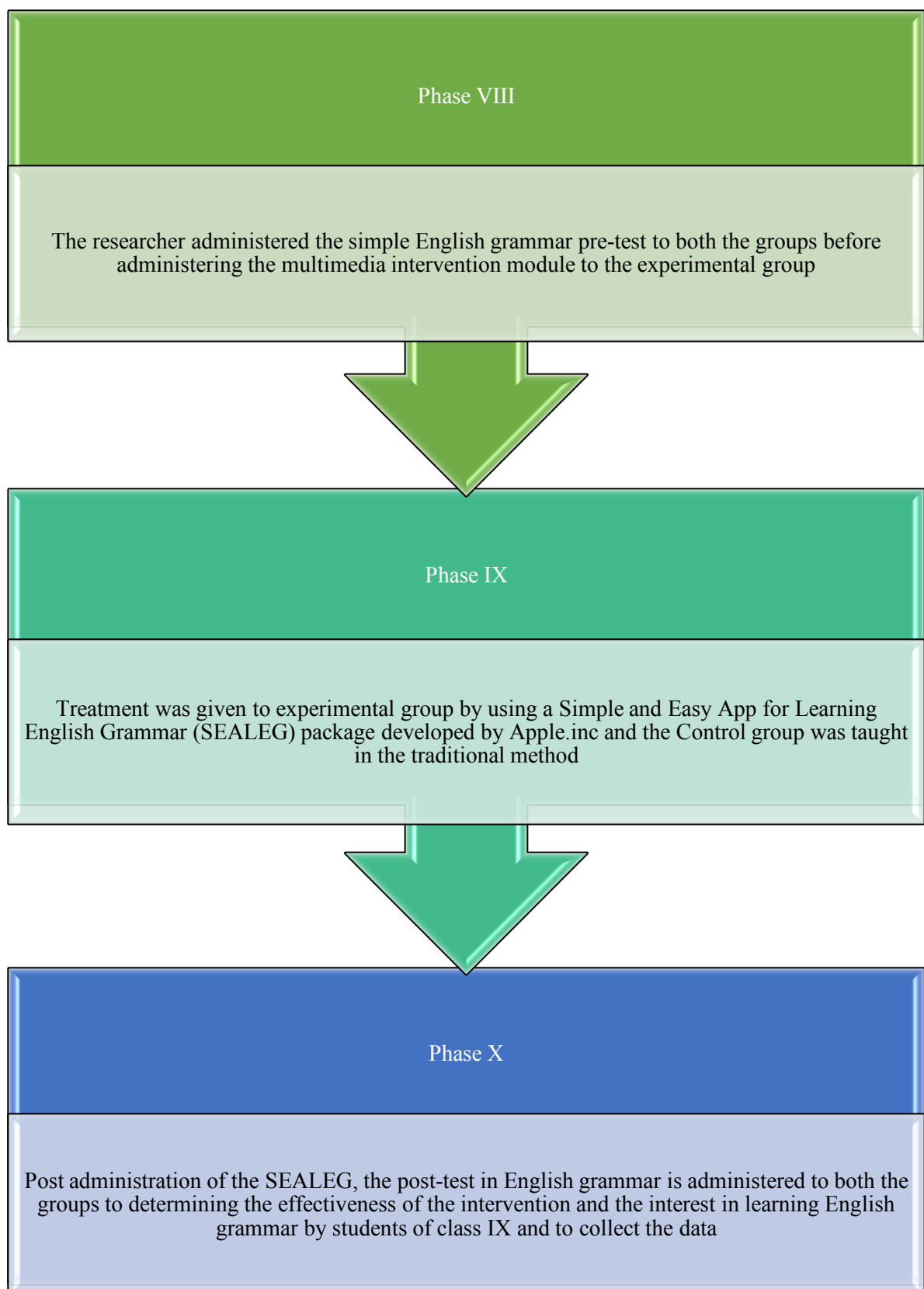
The researcher used the following tools namely:

1. Interest Inventory by Linda Karges -Bone,
2. Socio Economic Status (SES) scale by M R Lakshiminarayana.

Table 3.10 Shows the flow chart representing the procedure of experimental method.







3.11 Statistical Techniques Used in the Study

For the present study both descriptive and inferential statistics will be employed for data analysis. The descriptive statistic such as mean and standard deviation and inferential statistics such as t-test are used.

- Descriptive statistics for the variables in study.
- T-test Analysis was used to find out whether there is a significant difference of the means of the two pretest and posttest in study.

ANOVA was used to compute the main and interaction effects of moderate variables of the study.

3.12 Conclusion

In this section the points and speculations of the study were sketched out. The exploration instrument, making arrangements for the examination of information is talked about. The obtained data will be analyzed, interpreted and discussed in chapter four.

CHAPTER 4

ANALYSIS AND INTERPRETATION OF DATA

4.1 Introduction

In the previous chapter, the methodology adopted for the present study is discussed in detail. There would also be an overview of the effectiveness and interest of students in learning English grammar during the period of 4 weeks' intervention with reference to their and post-test scores. This chapter describes the analytical aspects and interpretation of collected data. Research conducted based on the Tools namely, Interest Inventory, SES Scale, Multimedia Instructional Package. These tools were analyzed based on the following variables; Gender, SES, Multimedia, Interest, Teaching and Learning English grammar. The selected institution was Christ The King School, Ramamurthy Nagar, Doorvani Nagar Post, Bangalore 560036 Karnataka. The purpose of the investigator is to study "Effectiveness of multimedia assisted teaching and interest in English grammar learning among class ix students"

Data was processed, classified and tabulated by using Microsoft Excel Software. Then the statistical analysis was done with the SPSS latest software version. As per the objectives of the study, detailed data analysis was done. The hypotheses formulated in the study are tested by using various statistical tools in SPSS. The data analyzed are presented under three sections.

T-Test is done to find out if there is any significant difference between pre-test and post-scores of experimental and control groups in learning English grammar before or after using the intervention and the interest of the student in learning English grammar.

ANOVA is done on the scores of overall students based on their multiple comparisons of SES and Gender

4.2 Descriptive and Inferential Statistics

4.2.1 Hypothesis 1

There is no significant difference between pre-test scores of Control Group and Pre-test scores of Experimental Group with respect to learning English grammar.

Table 4.1 Showing Hypothesis one Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pretest CG	10.333	30	2.4821	.4532
	Pretest EG	10.567	30	2.7503	.5021

Table 4.2: Showing the Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Pre-test CG & Pre-Test EG	30	.517	.003

Table 4.3 Showing Paired Samples Test

		Paired Differences			
		Mean	Std. Deviation	Std Error Mean	95% Confidence Interval of the Difference
					Lower
Pair 1	Pre-test CG - Pre-test EG	-.2333	2.5822	.4714	-1.1975

Table 4.4 Showing Paired Samples Test

	Paired Differences	t	f	Sig. (2 tailed)
	95% Confidence Interval of the Difference			
	Upper			
Pair 1 Pre-test CG Pre-Test EG	.7309	-.495	29	.624

Interpretation

In the above table, the mean value of control group pre-test (10.333 ± 2.4821) is higher than the mean of experimental group pre-test (10.567 ± 2.7503). Hence a statistically significant difference of $-.2333$ (95% CI -1.1975 to $.7309$), $t(29) = -.495$, $p = .000$ was observed. Hence null hypothesis is accepted.

4.2.2 Hypothesis 2

There is no significant difference between the pre-test scores of interests in learning English grammar among both Control and Experimental groups.

Table 4.5 Showing Hypothesis 2 Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 CG pre- test Interest inventory	11.867	30	2.9912	.5461
EG pre- test Interest inventory s	11.400	30	3.4800	.6354

Table 4.6 Showing Paired Samples Correlations

	N	Correlation	Sig.
Pair 1 CG pre- test Interest inventory	30	.860	.000
EG pre- test Interest inventory			

Table 4.7 Showing Paired Samples Test

	Paired Differences			
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference
				Lower
Pair 1 CG pre- test Interest inventory	.4667	1.7760	.3242	-.1965
EG pre- test Interest inventory				

Table 4.8 Showing Paired Samples Test

		Paired Differences		f	Sig. (2-tailed)
		95% Confidence Interval of the Difference			
		Upper			
Pair 1	CG pre- test Interest inventory	1.1298	.439	29	.161
	EG pre- test Interest inventory				

Interpretation

The above table indicates the Mean of control group pre-test (11.867 ± 2.9912) is higher than the mean of experimental group pre-test (11.400 ± 3.4800). Hence a statistically significant difference of .4667 (95% CI -.1965 to 1.1298), $t(29) = 1.439$, $p = .161$ was observed. Hence null hypothesis; There is no significant difference between pre-test scores of

interest in learning English grammar among of Control Group and Experimental Group before using the intervention SEALEG was accepted.

4.2.3 Hypothesis 3

There is no significant difference between pre-test and post-scores of experimental group in learning English grammar by using SEALEG

Table 4.9 Showing Hypothesis 3 Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Pre-test experimental group	10.57	30	2.750	.502
Pair 1 Post-test experimental group	18.63	30	3.000	.548

Table 4.10 Showing Paired Samples Correlations

	N	Correlation	Sig.
Pre-test experimental group	30	.406	.026
Pair 1 Post-test experimental group			

Table 4.11 Showing Paired Samples Test

		Paired Differences					t	f	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95%Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pre-test EG post-test EG	-8.067	3.140	.573	-9.239	-6.894	-14.073	29	.000

Interpretation

The above table indicate that Mean of experimental group post-test (18.63 ± 3.000) is slightly higher than the mean of experimental group pre-test (10.57 ± 2.750). Hence a statistically significant difference of 8.067 (95% CI -9.239 to -6.894), $t(29) = -14.073$, $p = 0.000$ was observed. Hence null hypothesis was rejected and an alternative hypothesis is formulated that is There is a significant difference between pre-test and post-scores of experimental group in learning English grammar by using SEALEG

4.2.4 Hypothesis 4

There is no significant difference between pre-test and post-test the scores of control group in learning English grammar by using the traditional method

Table 4.12 Showing Hypothesis 4 Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 Pre-test CG	10.33	30	2.482	.453
Post-test CG	9.83	30	2.984	.545

Table 4.13 Showing Paired Samples Correlations

	N	Correlation	Sig.
Pair 1 Pre-test CG & post-test CG	30	.483	.007

Table 4.14 Showing Paired Samples Test

		Paired Differences					t	f	Sig.(2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair:1	Pre-test CG post-test CG	.500	2.813	.514	-.550	1.550	.974	29	.338

Interpretation

The above table shows that the Mean of control group post-test (9.83 ± 2.984) is slightly lesser than the mean of control group pre-test (10.33 ± 2.482). Hence a statistically significant difference of 0.500 (95% CI -0.550 to 1.550), $t(29) = 0.974$, $p = 0.338$ was observed. Hence null hypothesis; There is no significant difference between control group pre test scores and control group post test scores of English grammar learning by using traditional was accepted

4.2.5 Hypothesis 5

There is no significant difference between pre-test and post-test scores of experimental groups in interest towards learning English grammar by using SEALEG

Table 4.15 Showing Hypothesis 5 Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Pre-test EG in interest	11.40	30	3.480	.635
Post-test EG in interest	14.10	30	3.527	.644

Table 4.16 Showing Paired Samples Correlations

	N	Correlation	Sig.
Pair 1 Pre-test EG & Post-test EG in interest	30	.663	.000

Table 4.17 Showing Paired Samples Test

	Paired Differences					t	f	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95%Confidence Interval of the Difference				
				Lower	Upper			
Pre-test EG & Pair 1 Post-test EG in interest	-2.700	2.879	.526	-3.775	-1.625	-5.137	29	.000

Interpretation

The Mean value of experimental group Post-interest test in the above table (14.10 ± 3.527) is higher than the mean of experimental group Pre-interest test (11.40 ± 3.480). Hence statistically significant difference of -2.700 (95% CI -3.775 to -1.625), $t(29) = -5.137$, $p=0.000$ was observed. Hence null hypothesis was rejected and alternative hypothesis is formulated, there is a significance difference between pre-test and post-test experimental group in interest towards learning English grammar by using SEALEG

4.2.6 Hypothesis 6

There is no significant difference between pre-test and post-test of control group in interest towards learning English grammar by traditional method

Table 4.18 Showing Hypothesis 6 Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Pre-test CG in interest	11.87	30	2.991	.546
Post-test CG interest	11.63	30	2.859	.522

Table 4.19: Paired Samples Correlations

	N	Correlation	Sig.
Pre-test CG in interest	0	.974	.000
Post-test CG in interest			

Table 4.20 Showing Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pre-test CG in interest Pair:1 post-test CG interest	.233	.679	.124	.020	.487	1.882	29	.070

Interpretation

From the above data it is clear that there were 30 students who took control group pre-test and 30 students who took part in control group post-test in interest towards learning English grammar by traditional method. A paired sample t-test was run to determine if there were differences in control group pre -test scores and control group post-test scores of students. Mean of control group post-test (11.63 ± 2.859) is slightly lesser than the mean of control group pre-test (11.87 ± 2.991). Hence a statistically significant difference of 0.233 (95% CI -.020 to .487), $t(29) = 1.882$, $p = 0.070$ was observed. Hence null hypothesis; there is no significant difference between pre-test and post-test scores of control group in interest towards learning English grammar by traditional method was accepted.

4.2.7 Hypothesis 7

There is no significant difference between the scores of post-test in learning English grammar through SEALEG by male and female students of experimental group.

Table 4.21 Showing Hypothesis 7 Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Post-test	Male	16	18.81	2.971	.743
Experimental group	Female	14	18.43	3.131	.837

Table 4.22 Showing Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Post-test experimental group	Equal variances assumed	.029	.865	.344	28	.733	.384	1.115	-1.900	2.668
	Equal variances not assumed			.343	27.021	.734	.384	1.119	-1.912	2.680

Interpretation

From the above data it is clear that there were 16 male students and 14 female students who took part in experimental group post-test and there is equal variances assumed. An independent sample t-test was run to determine if there were differences between male and female in experimental group post-test in learning English grammar through SEALEG. Mean of experimental group post-test male (18.81 ± 2.971) is slightly higher than the mean of

experimental group post-test female (18.43 ± 3.131) Hence a statistically significant difference of 0.384 (95% CI -1.900 to 2.668), $t(28) = .344$, $p = 0.733$ was observed. Hence null hypothesis; there is no significant difference between the scores of post-tests in learning English grammar through SEALEG by male and female students of experimental group was accepted.

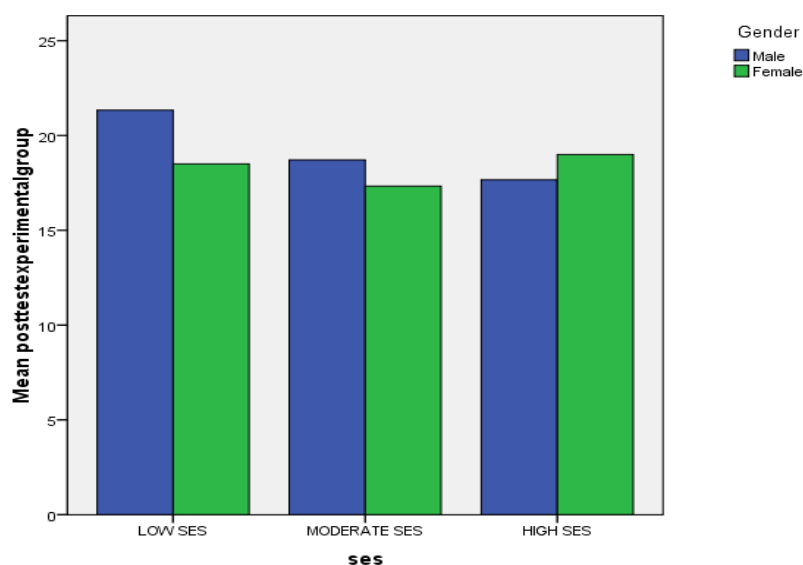


Figure 4.1: Showing Mean scores of experimental group post-test male and female based on SES

4.2.8 Hypothesis 8

There is no significant difference in post test scores of experimental group among students belonging to low, average, and high SES.

Alternative

There is a significant difference in post test scores of experimental group among students belonging to low, average, and high SES.

Table 4.23 Showing Hypothesis 8 One-way ANOVA Post- test Experimental Group

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	95% Confidence Interval for Mean	Minimum	Maximum
					Lower Bound	Upper Bound		
LOW SES	9	19.44	2.963	.988	17.17	21.72	15	23
MODERATE SES	0	18.30	2.263	.716	16.68	19.92	15	22
HIGH SES	1	18.27	3.690	1.113	15.79	20.75	13	24
Total	0	18.63	3.000	.548	17.51	19.75	13	24

Table 4.24: ANOVA Post test Experimental group

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	8.463	2	4.231	452	.641
Within Groups	252.504	27	9.352		
Total	260.967	29			

Table 4.25 Shows the Post Hoc Test Multiple Comparison of Dependent Variable: Post-test Experimental group

(I) SES	(J) SES	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	95% Confidence Interval
					Lower Bound	Upper Bound
LOW SES	MODERATE SES	1.144	1.405	.697	-2.34	4.63
	HIGH SES	1.172	1.375	.674	-2.24	4.58
MODERATE SES	LOW SES	-1.144	1.405	.697	-4.63	2.34
	HIGH SES	.027	1.336	1.000	-3.29	3.34
HIGH SES	LOW SES	-1.172	1.375	.674	-4.58	2.24
	MODERATE SES	-.027	1.336	1.000	-3.34	3.29

Interpretation

A one-way ANOVA was conducted to examine the effect of SES level on post test scores of experimental group in learning English grammar using SEALEG. There was no statistically significant difference between the means of ses level on post test scores of experimental group in learning English grammar using SEALEG, $F(2, 29) = 0.452$, $p = 0.641$. Therefore there is no need to check interaction effect of levels of SES on post test scores of experimental group in learning English grammar using SEALEG. However, when interaction effect test was conducted (Tukey Post hoc) for all levels of SES significant value is greater than 0.05 ($p > 0.05$). Which means the null hypothesis, “There is no significant difference in post test scores of experimental group among students belonging to low, average, and high SES” is accepted

4.2.9 Hypothesis 9

There is no main and interaction effect between gender and levels of SES on post test scores of experimental group in learning English grammar using SEALEG.

Alternative

There is a main and interaction effect between gender and levels of SES on post test scores of experimental group in learning English grammar using SEALEG.

Table 4.26 Showing hypothesis 9 Two way Anova (Univariate Analysis of Variance)
Dependent Variable: post-test experimental group

Gender	SES	Mean	Std. Deviation	N
Male	LOW SES	21.33	2.082	3
	MODERATE SES	18.71	2.563	7
	HIGH SES	17.67	3.386	6
	Total	18.81	2.971	16
Female	LOW SES	18.50	3.017	6
	MODERATE SES	17.33	1.155	3
	HIGH SES	19.00	4.301	5
	Total	18.43	3.131	14
Total	LOW SES	19.44	2.963	9
	MODERATE SES	18.30	2.263	10
	HIGH SES	18.27	3.690	11
	Total	18.63	3.000	30

Table 4.27 Tests of Between-Subjects Effects. Dependent Variable: Post-test Experimental

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	33.371 ^a	5	6.674	.704	.626
Intercept	9432.847	1	9432.847	994.697	.000
Gender	6.181	1	6.181	.652	.427
SES	17.150	2	8.575	.904	.418
Gender * SES	21.348	2	10.674	1.126	.341
Error	227.595	24	9.483		
Total	10677.000	30			
Corrected Total	260.967	29			

a. R Squared = .128 (Adjusted R Squared = -.054)

Table 4.28 Showing the Post Hoc Tests (SES) Multiple Comparisons: Dependent Variable: post-test experimental group. Turkey HSD

(I) ses	(J) ses	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	95% Confidence Interval
					Lower Bound	Upper Bound
LOW SES	MODERATE SES	1.14	1.415	.701	-2.39	4.68
	HIGH SES	1.17	1.384	.678	-2.28	4.63
MODERATE SES	LOW SES	-1.14	1.415	.701	-4.68	2.39
	HIGH SES	.03	1.346	1.000	-3.33	3.39
HIGH SES	LOW SES	-1.17	1.384	.678	-4.63	2.28
	MODERATE SES	-.03	1.346	1.000	-3.39	3.33

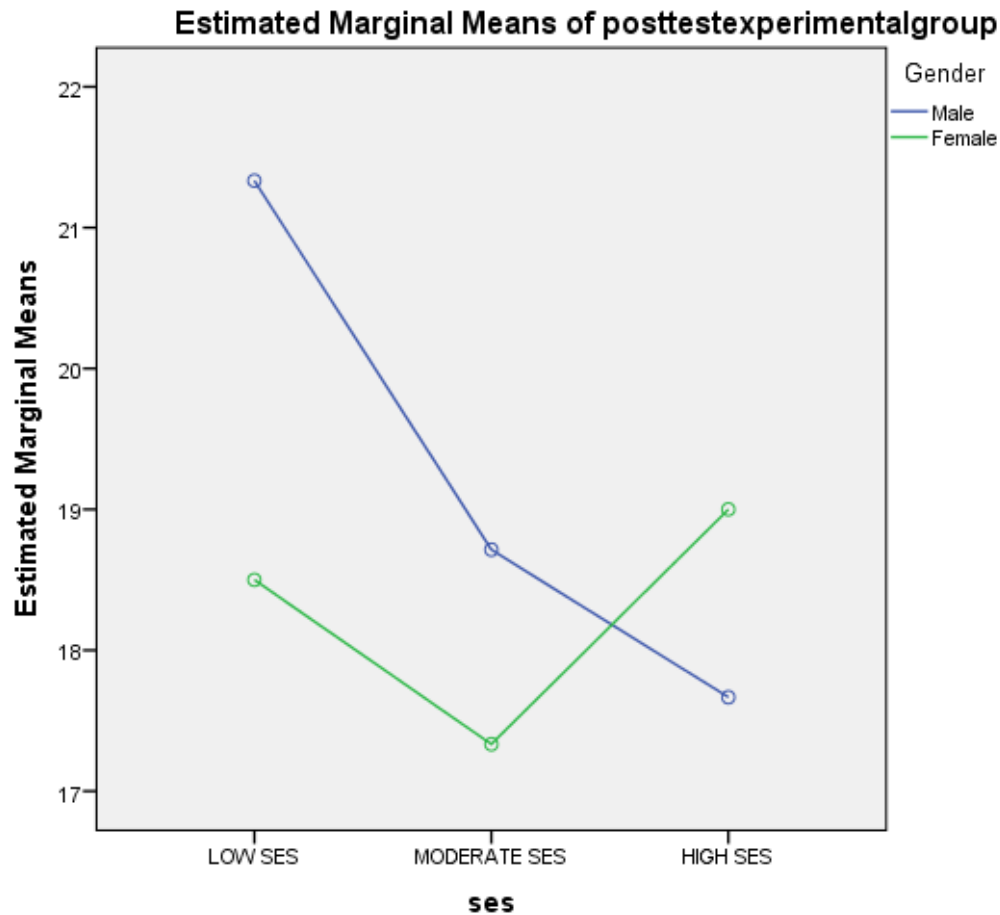


Figure 4.2 Based on observed means. The error term is Mean Square(Error) = 9.483.

Interpretation:

A two-way ANOVA was conducted that examined the effect of gender and SES level on post test scores of experimental group in learning English grammar using SEALEG. There was no statistically significant interaction between the effects of gender and SES level on post test scores of experimental group in learning English grammar using SEALEG, $F(2, 24) = 1.126$, $p = 0.341$.

From the table on Tests of between-subjects effects it is observed that for Gender, SES and Gender* SES significant values are 0.427, 0.418 and 0.341 respectively all of them have $p > 0.05$. It means that there is no significant effect of Gender and SES on post test scores of experimental group in learning English grammar using SEALEG. $P = 0.341$ indicates that

there is no significant interaction effect of Gender * SES on post test scores of experimental group in learning English grammar using SEALEG.

Simple main effects analysis showed that neither males nor females were significantly different in learning English grammar using SEALEG from all levels of Socio economic status. From the post hoc test table it is clear that for each combination of SES levels, the significant values are greater than 0.05 ($p > 0.05$). Therefore, there is no simple main effect between the means of each level of SES in post-test scores of experimental group in learning English grammar using SEALEG.

The graph was plot by taking SES on x axis and estimates the marginal means on y axis and colored lines indicates gender. The lines in graphs are almost parallel but are crossing with another at a point indicating negligible main and interaction effect among the variables. However, this can be understood by post hoc test.

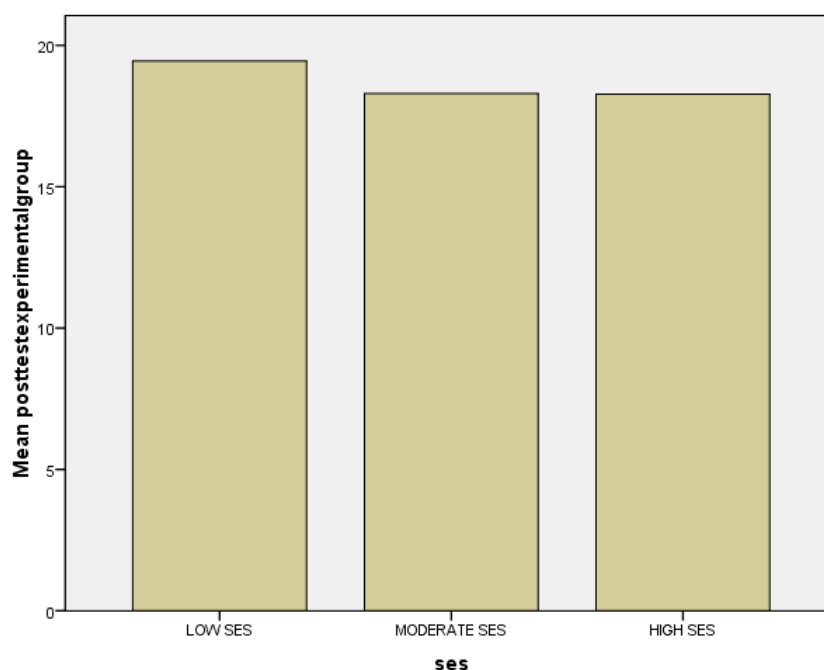


Figure 4.3 Showing the mean of posttest experimental group based on SES

4.3 Conclusion

"Descriptive and inferential statistics were used to analyze data in the present study. Descriptive statistics are functions of the sample data that are intrinsically interesting in describing some feature of the data. Classic descriptive statistics include mean, min, max,

standard deviation, median and it was utilized to investigate students' interest and knowledge of English grammar without testing the intervention. Then again, Inferential statistics are a function of the sample data that assists you to draw an inference regarding a hypothesis and inferential measurements were utilized to test hypothesis in the study. The last was defeated the reason for making deductions from the discoveries of the study. The information was introduced, examined and translated. The discoveries were likewise talked about. The following chapter focus on the conclusion, summary and mainly the findings of the study and educational implication of the study, recommendations of the study are presented.

CHAPTER 5

SUMMARY AND CONCLUSIONS

In the previous chapter, the analysis and interpretation of the data were presented in detail in this chapter, the researcher presents the brief summary of research work which includes statement of problems need for the study, objectives and findings and conclusions, limitations are presented.

5.1 Summary of the study

Education brings enlightenment in mankind Education in the largest sense is an experience of the mind, character or physical ability of an individual. Education in the traditional sense means controlling or disciplining the behavior of an individual

The multimedia has a great role in education and in the process of language learning especially grammar. Multimedia is the best way to achieve the learning objectives in any language learning. Text and graphics with proper instruction will make the learners to learn the language effectively. It is impotent to know that very language has grammar and it is the system and the structure of language. There are many sets of rules include morphology, syntax, phonetics and pragmatics in grammar. Through the use of multimedia and visual The multimedia technology in the education can bring the quality in teaching and facilitate the learners to participate and learn actively. Over the years, technology has enormous growth in order to uplift the quality of education. The use of technology in education influences directly both teacher and students in education.

5.2 Need and Significance of the Study

Around the globe, Educational system is under increased pressure to utilize the new Information and multimedia Technologies to teach students the knowledge and skills they need in the 21st century. The simplicity and power of multimedia enriches teacher's creativity and leads to multi-sensory students learning. The use of multimedia especially in teaching English grammar has created novel modes of learning and greatly contributed to the restructuring of instructional environment in schools. Multimedia assisted teaching can prove

as a big breather as it is capable of sustaining the interest of the learners, through visuals and audio inputs. It also brings in the elements of the outer world into the classroom. It can help learners in understanding the complex concepts in a very simple way. Today more emphasis is laid upon the experience rather than rote learning

One of the techniques to improve the students' academic needs and to develop English language spoken and grammatically writing skills is by integrating multimedia content in the teaching and learning process. Simple and Easy App for Learning English Grammar (SEALEG) provides the student a chances for interacting with diverse content to make learning easier. There has been steady increase in learning English language as a foreign language among students in different levels. Therefore, the most important need of the study is "to unlock our creativity in order to be creative."

5.3 Statement of the Problem

"Effectiveness of Multimedia Assisted Package on Achievement in English Grammar in Relation to Interest in Learning among Class IX Students".

5.4 Review of related literature

The review of the literature is posted under headings of different studies. With a view to develop an insight into the problem the researcher had to study the available literature in the field of the selected problem for the research. The researcher studies different approaches, treatments, methods, measures, teaching aids and various experimental designs employed by previous researchers in their studies. The use of multimedia in the classroom creates interest in the students and the effectiveness of learning English language. Literature review helps in understanding the correct the design of the research, it involves the systematic identifications, location and analysis of documents containing information related to the research problem.

An intensive review of related literature was done to find out what had been written about the topic they are interested in investigating. These reviews have thrown light on the past research studies carried out in the fields of interest in English grammar learning and technology mediated English teaching.

The literature review is undertaken by the researcher to arrive at the following findings:

1. How to develop interest among students towards learning English grammar?

2. To find out the Multimedia enhanced teaching has rich potential in developing interest among students towards learning English grammar.

The following findings were arrived at after undertaking the review:

1. It is very important to develop interest among students towards learning English grammar.
2. Multimedia enhanced teaching has rich potential in developing interest among students towards learning English grammar.

The following gaps were identified after undertaking the review:

1. SEALEG has not been used by any researcher for teaching English grammar.
2. Interest in English grammar has not been selected as an independent variable by any researcher.

5.5 Objectives of the Study

1. To develop/prepare a Simple and Easy App for Learning English Grammar (SEALEG) package to know the interest in learning English grammar among class IX Students.
2. To compare the effectiveness of SEALEG and conventional method of teaching to know the interest in English grammar learning among class IX students.
3. To study the level of interest in English among class IX students of pre-test control group and pre-test experimental group.
4. To find out the level of interest in English among class IX students of control and experimental group with respect to gender.
5. To find out the level of interest in English among class IX students of control and experimental group with respect to Socio-economic status (SES).
6. To find out the interest level of class IX students of control group in both pre-test and post-test
7. To evaluate the Simple and Easy App for Learning English Grammar (SEALEG) on class IX students of experimental group with respect to gender.
8. To evaluate the Simple and Easy App for Learning English Grammar (SEALEG) on class IX students of experimental group with respect to SES.
9. To compare the levels of interest in English grammar learning experimental group and control group students of class IX with respect to gender.

10. To compare the levels of interest in English grammar learning experimental group and control group students of class IX with respect to SES.
11. To compare experimental group and control group of class IX students with respect to their interest in learning English grammar.
12. To investigate whether class IX students of experimental group retained the interest made English grammar through a Simple and Easy App for Learning English Grammar (SEALEG).

5.6 Methodology of the Study

The present study was experimental in nature. As the sample of the present study was taken stratified random sample, the Pretest-Posttest Equivalent-Controlled group design was followed in this research. Diminter M. Dimitovi and Philip D. Rumrill Jr., (2003. 159) writes about “the pretest and posttest designs are widely used in the educational and behavioral research, primarily for the purpose of comparing groups or measuring the experimental treatments.”

In the process of conducting the experiment, the selection the samples is done on the basis of stratified random sampling. With this randomized techniques, all the conditions of experimental group and control group looks similar. But the experiment group is given the treatment ‘T’ where as the control group is not exposed to and treatment. Pre-test is to check whether the groups for different before the Manipulation starts. Post-test is conducted for the Measurement of effects. Since there is often a measurement effect, a control group, which is the group not receiving the same manipulation is a need to see how big this effect is.

Researcher administered the Interest Inventory by Dr. Linda Karges -Bone, and Socio Economic Status (SES) scale by Dr. M. R. Lakshiminarayana to segregate the groups. Effectiveness of multimedia assisted teaching and interest in English learning among class IX students is studied after the treatment.

“Maturation and the history are the major problems for the internal validity in this kind of experimental design. These to aspects are mentioned in the limitation section of the research.

The design of the study is presented as follow.

O1 X O2

O3 C O4

Where, O1 and O3 are pretest

O2 and O4 are posttest

X stands for Experimental Group and

C stands for Control Group

Following this design, the achievement of students in English grammar was measured before and after the experimentation. The similar procedure was followed for control group.

5.7 Tools of the study

The researcher used the standardized tools which are readily available for this study. The researcher used two tools namely, 1. Interest Inventory by Dr. Linda Karges -Bone, 2. Socio Economic Status (SES) scale by Dr. M. R. Lakshiminarayana.

Tool Adapted by the researcher for the purpose of the study is a Simple and Easy App: Learn English Grammar, (SEALEG) Writing, Spelling and vocabulary – WAGmob and the Tools developed by the researcher for the purpose of the study is the researcher constructed two modules namely Pre-test and Parallel Post-test in English grammar.

5.8 Hypotheses

1. There is no significant difference between pre-test scores of Control Group and Pre-test scores of Experimental Group with respect to learning English grammar.
2. There is no significant difference between the pre-test scores of interest in learning English grammar among both Control and Experimental groups.
3. There is no significant difference between pre-test and post-scores of experimental groups in learning English grammar by using SEALEG
4. There is no significant difference between pre-test and post-test scores of control group in learning English grammar by using the traditional method
5. There is no significant difference between pre-test and post-test experimental group in interest towards learning English grammar by using SEALEG
6. There is no significant difference between pre-test and post-test of control group in interest towards learning English grammar by traditional method
7. There is no significant difference between the scores of post-test in learning English grammar through SEALEG by male and female students of experimental group
8. There is no significant difference in post test scores of experimental group among students belonging to low, average, and high SES.

Alternative

There is a significant difference in post test scores of experimental group among students belonging to low, average, and high SES.

9. There is no main and interaction effect between gender and levels of SES on post test scores of experimental group in learning English grammar using SEALEG.

5.9 Collection of Data

The researcher administered the tools among class IX students of Christ the King school, Ramamurthy nagar, Doorvani nagar post, Bangalore-36 and two homogeneous groups were created by using stratified random sampling and the lottery method . Tools used in the study were perceived interest inventory of students by the researcher to measure the interest of the class IX students in learning English. The researcher also conducted a pre-test and post-test to know the interest levels of students and effectiveness of learning English grammar by using Multimedia assistance in the classroom

5.10 Data Analysis

The collected Data was analyzed, classified and tabulated by using Microsoft Excel Software. Then the statistical analysis was done with the SPSS latest software version. As per the objectives of the study, detailed data analysis was done. The hypotheses formulated in the study are tested by using various statistical tools in SPSS. The data analyzed are presented under two sections.

T-Test is done to find out if there is any significant difference between pre-test and post-scores of experimental and control group in learning English grammar before or after using the intervention (SEALEG) and the interest of the student in learning English grammar. ANOVA is done on the scores of overall students based on their multiple comparisons of SES and Gender

5.11 Findings and Conclusions

The results of above experimental study are presented below.

1. The students of Control Group and the students of experimental group did not significantly differ in the pre-test scores with respect to learning English grammar.
2. The students of Control Group and the students of experimental group did not significantly differ in the pre-test scores with respect to their interest in learning English grammar

3. The students of experiential group have shown a significant difference between the interest scores of pre-test and post-test in learning English grammar after using the intervention SEALEG.
4. The students of experiential group have shown a significant difference between the scores of pre-test and post-test in learning English grammar after using the intervention SEALEG.
5. The students of control group did not significantly differ in the pre-test and post-test scores with respect to learning English grammar by using the traditional method.
6. The pre-test scores of control group in interest towards learning English grammar by traditional method significantly did not differ with their post-test scores
7. Male and female students of experimental group did not significantly differ in the post-test scores with respect to learning English grammar by using SEALEG
8. The students belonging to low, average, and high SES of experimental group did not significantly differ in the post-test scores with respect to learning English grammar.
9. The gender and levels of SES on post test scores of experimental group did not have main and interaction effect in learning English grammar using SEALEG.

5.12 Suggestions for Further Research

On the basis of the present study, following suggestions have been made:

1. This is a study to find the impact of is a Simple and Easy App: Learn English Grammar, (SEALEG) Writing, Spelling and vocabulary – WAGmob Model of teaching English grammar effectively and on the interest of the students could be undertaken.
2. This study can be extended to larger samples. The effect of is a Simple and Easy App: Learn English Grammar, (SEALEG) Writing, Spelling and vocabulary – WAGmob Model of teaching English grammar can be studied on the students of class VII onwards.
3. A long-term project during the complete academic year, may be planned on the same lines and design, to study the effects is a Simple and Easy App: Learn English Grammar, (SEALEG) Writing, Spelling and vocabulary – WAGmob) Model of teaching English grammar.
4. Same study may be carried over by selecting other variables like attitude, attention, learning environment and stress.

5. Gender is considered as demographic variable and SES alone was considered as moderate variable. Other variables such as locality, learning environment, mental health etc. can be taken as moderate variable and the interaction effect can be seen.
6. A study may be conducted to find out the influence of is a Simple and Easy App: Learn English Grammar, (SEALEG) Writing, Spelling and vocabulary – WAGmob model of teaching on development of interest towards learning English grammar.

The researcher concludes with a profound hope that the findings of the study of the study can facilitate this system of education, significantly classroom instruction in correcting a number of the drawbacks of the system raised by some documents and commissions.

5.13 The Limitations of the Study

1. The study is limited to selected topics of English class IX students and of class IX
2. The study is confined to English grammar teaching based on SEALEG model: a Simple and Easy App for Learn English Grammar, Writing, Spelling and vocabulary – WAGmob module and SEALEG is followed in the present study.
3. The study is confined to experimental group students of class IX of a particular school in Bangalore.
4. In the process of conducting the experiment, the research bias was not controlled.
5. Researcher has not verified whether the application satisfies the cognitive theory of multimedia Learning (CTML) by Richard Mayer.
6. Perform a true experiment with larger population.
7. Train independent teachers to run the true experiment.
8. Run experiment for the multiple schools and multiple types of schools.

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APPENDIX – I

PERSONAL PROFORMA

CENTRE FOR EDUCATION

Christ University

Bangalore-560029

Researcher

David Raju Matta

Research Supervisor

Dr Sumita Rao K

Dear Sir/Madam,

I am doing a study on “Effectiveness of Multimedia Assisted Package on Achievement in English Grammar in Relation to Interest in Learning among Class IX Students”, as a part of my M.Phil. studies. Your valuable inputs are necessary for the same. An intervention adapted after the validation from the subject experts with the pre-test and Post-test questionnaire and interest inventory are provided here. This experimental study takes the period of two months. All the results and the data collected from the students here will be kept confidential. I would very much appreciate if you could permit me to conduct this experimental study in your esteemed institution which will also be useful all the students at large.

Anticipating your wholehearted cooperation,

Yours sincerely,

David Raju Matta

PERMISSION LETTER

CENTRE FOR EDUCATION

Christ University

Bangalore-560029

Researcher

David Raju Matta

Research Supervisor

Dr Sumita Rao K

Dear Sir/Madam,

I am doing a study on “Effectiveness of Multimedia Assisted Package on Achievement in English Grammar in Relation to Interest in Learning among Class IX Students”, as a part of my M.Phil. studies. Your valuable inputs are necessary for the same. An intervention adapted after the validation from the subject experts with the pre-test and Post-test questionnaire and Interest inventory are provided here. This experimental study takes the period of two months. In order to run the experiment, I would also like to take concern from students as well as parents to be part of this experiential study. I would very much appreciate if you could permit me to conduct this experimental study with the consent of students and parents, in your esteemed institution which will also be useful all the students at large.

Anticipating your wholehearted cooperation,

Yours sincerely,

David Raju Matta

**VALIDATION SCALE SUBJECT/PEDAGOGY EXPERTS ABOUT
EFFECTIVENESS OF MULTIMEDIA TEACHING PACKAGE**

No	Statement	Agree	Disagree	Undecided
A.	Content Selection and Presentation			
A.1	The Content of Multimedia Teaching Package is as per the syllabus prescribed by State Board.			
A.2	The language and distribution of the matter is as per the level of the students			
A.3	The number of scenes in the presentation is sufficient and fulfills the need of content.			
A.4	Main topics and sub-topics are arranged properly.			
A.5	Sequencing and structuring of learning contents is logical and Systematic.			
A.6	The sound is clearly audible & quality of Audio is good.			
A.6	The sound is clearly audible& quality of video is good.			
A.7	The beginning of the programme is quite stimulating.			

A.9	Simple and relevant examples are used for the explanation of the content.			
A.10	Extent of animation, audio, visuals and other such material is used in appropriate proportion and as per the need of content.			
A.11	Evaluation of learning material has been done in the form of M.C.Qs instantly which provides immediate feedback.			
B. Significance for Teachers and Student.				
B.1	It is quite successful in capturing the attention of students and enhances their concentration level.			
B.2	It is possible for the students to access the previous content without any difficulty.			
B.3	It is helpful in the development of semantically and grammatical ability of the students.			
B.4	Students would be able apply the knowledge of grammatical knowledge in meaningful situations.			

B.5	It is helpful in removing the boredom of grammar learning from learners			
B.6	By using Multimedia Teaching Package , students can learn at their own pace.			
B.7	It introduces the teachers with the new ways of teaching and learning.			
B.8	Teacher can easily elaborate the complex concepts of English grammar through Multimedia Teaching Package.			
B.9	It helps the teacher in maintaining the proper decorum, especially in overcrowded classrooms.			
B.10	Teacher can easily make the revision as well as save his time with the help of Multimedia Teaching Package.			
B.11	It has changed the role of teacher from a authoritative leader to a supportive guide and facilitator.			
B.12	Teachers can easily use Multimedia Teaching Package in their routine classroom teaching.			

Remarks/Suggestions :

Name of the Expert :

APPENDIX – II

SOCIO ECONOMIC STATUS SCALE

Date:-----

Please furnish the following information:

1. Name : _____
2. Sex: Male/Female : _____
3. Age : _____
4. Education : _____
5. Marital status: Married/ Unmarried : _____
6. Size of the family : _____
7. Caste : _____
8. Locality: Urban/Rural : _____
9. Village : _____
10. Panchayat : _____
11. Taluk : _____
12. District : _____

INSTRUCTIONS

On the basis of this information socio-economic status of your family is being measured. You are requested to give the particulars about you and your family members according to the give format.

This information is only used for research purpose.

Categories and weight ages for each component of SES given below:

1. Component: Educational level

Under this component there are 15 categories. Weight ages for each category are given below:

Sl.No	Education	Weightages
1	Illiterate	1
2	Literacy/Primary	2
3	Primary(I-V)	3
4	Middle Class	4
5	Secondary (SSLC) (VIH-X)	5
6	SSLC passed	6
7	Intermediate/ pre University Course (PUC) passed	7
8	SSLC with ITI and other similar technical coursesq	8
9	Pre University course with Diploma/Polytechnic and other similar technical courses.	9
10	Graduation: B.A., B.Sc, B.Com, LLB. And other similar degrees after intermediate	10
11	Graduation with other professional courses: B.A. B.Sc, or B.Com, with B,Ed, LL.B. and any other Diploma courses	11
12	Post- graduate education: M.A, M.Com, M.Ed, M.Phil, and other similar courses	12
13	Technical degrees. BE, ME, MCA, MBA, BDS, BAMS, BHMD,BVSC and other similar courses	13
14	Higher Technical degrees: MBBS, MS, MD and other similar courses	14
15	Research degrees: Ph.D .and Post Doctoral studies	15

2. Component: Occupation pursued

Under this component there are 24 categories. Weight ages for each category are given below:

Sl.No	Occupation	Weightages
1	Unemployed / Dependents	1
2	Manual laborers, servants, petty businessmen, construction workers, agricultural coolies, attenders, transport works, cattle rearers, sellers and other similar	2
3	Skilled workers, carpenters, tailors, goldsmith electrical and electronic workers, pottery, mestri, and other similar workers	3
4	Self employed, land lords, contractors and other similar categories	4
5	Class IV Government employees	5
6	Class III Government employees	6
7	Class II Government employees	7
8	Class I Government employees	8
9	Politicians	9
10	Film artists	10
11	Police	11
12	Managers / Executives	12
13	Engineers	13
14	Lawyers	14
15	Bankers	15
16	Journalists	16
17	Businessmen	17
18	Sportspersons	18
19	Judges	19
20	Teacher/College lectures	20
21	Doctors	21
22	Scientists	22
23	Armed forces	23
24	All Indian services like IAS, IPS, IFS, IES,ect,	24

Note: These categories are made by considering suggestions of experts and the opinion poll conducted by Development and Research Service (DRS) and the Times of India – Aditya Birla Group Opinion poll.

3. Component: Annual income of the family.

Under this component there are ten categories. Weightages for each category are given below:

Sl.No	Income level	Weightages
1	Below poverty line (Rural – Rs. 11,197.8, Urban – Rs18,173.4)	1
2	Poverty line cut- off point to Rs. 50,000/-	2
3	Rs.50,001 to 1,00,000/-	3
4	Rs .1,00,001 to 1,50,000/-	4
5	Rs . 1,50,001 to 2,00,000/-	5
6	Rs . 2,00,001 to 2,50,000/-	6
7	Rs . 2,50,000 to 3,00,000/-	7
8	Rs . 3,00,001 to 4,00,000/-	8
9	Rs . 4,00,001 to 5,00,000/-	9
10	Rs . 5,00,001/- and above	10

Note: The above said categories of income level had been done by considering the

- (i) Poverty Line and
- (ii) Income Tax slabs.

Therefore, these ranges of income level changes from time to time depending upon the variation in poverty lines and income tax slabs.

Pease furnish the particulars of yourself and members of your family in the appropriate column.

Sl.	Members of the family	Education	Occupation	Annual
1.	Subject			
2.	Husband/Wife			
3.	Father			
4.	Mother			
5.	Guardian (if parents are			
	Children			
6.	1			
	2			
	3			
	Brothers			
7.	1			
	2			
	3			
	4			
	Sisters			
8	1			
	2			
	3			
	4			
	5			
	Others:			
9.	Exs: Brothers Wife, Sisters			
	Husband and their children			
	Grand Father			
	Grand Mother and others.			
	1			
	2			
	3			
	4			
	Annual Income from Other			

PRE – TEST AND POST – TEST IN ENGLISH GRAMMAR

I. Choose the Correct Answer 25 x 1 = 25

- I. Which of the following is an example of a sentence fragment? ()
a) He is my brother b) She played football
c) In the playground d) She called me today
2. Which of the following is not a part of speech? ()
a) Adjective b) Idioms and Phrases c) Preposition d) Adverb
3. Which one of the following is not a noun? ()
a) Dog b) Hate c) Note book d) Computer
4. How many nouns appear in the below sentence? ()
“pat and ken live with their mother and father.”
a) 3 b) 6 c) 5 d) 4
5. Which of the following is a proper noun? ()
a) Restaurant b) Pizza Hut c) Brother d) Flower
6. Which of the following pronoun is used to ask a question? ()
a) Intensive pronoun b) Interrogative pronoun
c) Demonstrative pronoun d) Personal pronoun
7. Which objective pronoun fits best in the following sentence? ()
“you’re a musician. I’d like to hear _____ play.”
a) her b) him c) me d) you

8. What does a linking verb do? ()
- a) It expresses action b) It connects the subject to the rest of the sentence
- c) It acts as an adverb d) All of the above
9. Choose the best option for the blank space provided: ()
- An adverb can modify or describe a _____.
- a) verb b) adjective c) both A and B d) predicate
10. Choose the best option for the blank space provided ()
- which is the definite article from the following
- a) A b) Is c) An d) The
11. Choose the best option for the blank space provided: ()
- An action verb expresses _____.
- a) The subject's actions or emotions b) The subject's thoughts or feelings
- c) Data inadequate d) All of the above
12. Identify the adjective in the following sentence: ()
- "I quickly ran to the closest store"
- a) quickly b) closest c) Both A and B d) None of the above
13. Which of the following options correctly describes an "adjective"? ()
1. A word used to describe adverbs
 2. A word used to describe a noun
 3. A word used to describe nouns
 4. A word used to describe verbs and adverbs

14. Identify the adjective used in the following sentence: ()
“This is oldest tree in the garden.”
a) tree b) oldest c) garden d) All of the above

II Choose the best preposition for the blank space provide:

15. Which of the following is a definite article? ()
a) a/an b) the c) Both A and B d) None of the above
16. An article is a _____. ()
a) Pronoun b) adverb c) adjective d) noun
17. _____ merely adds one statement to another. ()
a) Cumulative conjunctions b) Disjunctive conjunction
c) Adversative d) None of the above
18. It is not always easy to sympathize _____ an unfortunate man. ()
a) with b) for c) by d) at

III Choose the best preposition(S) for the blank space provided:

19. He was killed ____ a high way man ____ a dagger. ()
a) in; by b) by; with c) in; for d) with; for
20. Fill in the blank:
An interjection expresses _____. ()
a) Strong feeling b) Quotations
c) Language d) None of the above
21. Fill in the blank with the suitable compound conjunction:

“He switch on the fan _____ he entered the room.” ()

- a) as soon as b) as if c) so that d) as well as

22. Which sentence uses the simple present tense? ()

- a) The boy cleaned his car every Saturday.
b) The boy cleans his every Saturday.
c) The boy will clean his car every Saturday.
d) The boy will have cleaned his car every Saturday.

23. Which of the following sentence shows future tense? ()

- a) Yesterday, the dog chewed on a bone. b) The dog chews on a bone.
c) The dog will chew on a bone tonight. d) The dog chewed on a bone to-night.

24. Choose the best option for the blank space provided below: ()

“I will call you, when I _____ back.

- a) comes b) come c) will have come d) had come

25. Which of these sentences is written in passive voice? ()

- a) The professor teaches the students
b) Several thousand people were killed by the earthquake
c) I ate a piece of chocolate cake
d) The teacher read the book to the students