

CHAPTER-2

CONCEPTUAL FRAME WORK

2.1 Introduction

History of Computer-based Learning Computer assisted learning, or CAL, is not a new phenomenon. Computer Assisted Learning can be defined as a computer program or file developed specifically for educational purposes. The technique used throughout the world in a variety of contexts, from Primary school to University. In the 1980s, the first computer assisted learning became available to University students. The CAL Idea is highly dependent to the following educational events:

- Education Commission (1964-66), called Kothari Commission Introduction of Vocational Courses.
- National Policy of Education (1968): Introduction of Correspondence Courses.
- Edger Dale: Cone of Learning, Cone of Experience (Audio-Visual Methods in Teaching, 3rd ed., New York, 1969).
- Jacques Delors: The Four Pillars of Education, 1996(Learning to be, Learning to Do, Learning to Know, Learning to Live Together).

The various commission and committees reviewing education have also felt the need and importance of educational technology in the school curriculum accordingly national primary education has emphasized on computer literacy. Its state that:

“As computer has become important ubiquitous tool a minimal exposure to computer and training in their use will form a part of professional educational education. Programs of computer literacy will be organized as wider scale from the school stage.”

Computer literacy is defined as the knowledge and ability to use computers and related technology efficiently, with a range of skills covering levels from elementary use to programming and advanced problem solving. Computer literacy

can also refer to the comfort level someone has with using computer programs and other applications that are associated with computers. Another valuable component of computer literacy knows how computers work and operate. Having basic computer skills is a significant asset in the developed countries.

According to Tom kin and Roadman (1974), language is the system by which sound and meaning are related; language communication and human needs are unquestionably linked. Human being has various needs – individuals, social, economical, cultural and political – it is to fulfill that man needs language.

In the words of Barber (1965), “it is language more obvious than anything else that distinguishes man from the rest animal in the world. More recently man has often been describe as a tool-making animal, but language itself is the most remarkable tools that man has invented and it is the one that makes all other possible.

According to Edward Spair, one of the pioneers in the linguistics.

“Language is the purely human and non instinctive method of communicative ideas, emotions and describe by mean of a system of voluntarily produced symbols.”

Language is the main medium for exchanging the feeling of human being. It is essential for a person to learn and use such language, which are being used by majority of population so that the sphere of interaction and exchange of information.

2.2 Importance of the English language

A language is a systematic means of communication by the use of sounds or conventional symbols. It is the code we all use to express ourselves and communicate to others. It is a communication by word of mouth. It is the mental faculty or power of vocal communication. It is a system for communicating ideas and feelings using sounds, gestures, signs or marks. Any means of communicating ideas, specifically, human speech, the expression of ideas by the voice and sounds articulated by the organs of the throat and mouth is a language. This is a system for communication. A language is the written and spoken methods of combining words to create meaning used by a particular group of people.

In India, people going from North to South for education or business mostly communicate in English, which has become a link language. Keeping this in mind, the Parliament has also recognized English as an official language in addition to Hindi. All the facts of history and developments in present day India underline the continued importance of learning English in addition to vernaculars.

Some of the states of India are witnessing popular increase in public demand for teaching of English language from the primary classes. The great demand for admission in English medium schools throughout the country is a testimony to the attraction of English to the people of India. Many of the schools in the country have English as the sole or additional medium of instruction.

A language attracts people because of the wealth of literature and knowledge enshrined in it. English poses no danger to Indian languages. The Indian languages are vibrant and are developing by the contributions of great minds using them as their vehicle of expression. English is available to us as a historical heritage in addition to our own language. We must make the best use of English to develop ourselves culturally and materially so that we can compete with the best in the world of mind and matter. English language is our window to the world.

English language is one tool to establish our viewpoint. We can learn from others experience. We can check the theories of foreigners against our experience. We can reject the untenable and accept the tenable. We can also propagate our theories among the international audience and readers.

We can make use of English to promote our worldview and spiritual heritage throughout the globe. Swami Vivekananda established the greatness of Indian view of religion at the world conference of religions in Chicago in 1893. He addressed the gathering in impressive English. Many spiritual gurus have since converted thousands of English people to our spirituality by expressing their thought and ideas in masterful English. English has thus become an effective means of promoting Indian view of life, and strengthening our cultural identity in the world.

English was international and recognizable as the language we use today. The Orthography of English was more or less established by 1650 and, in England in particular, a form of standard educated speech, known as Received Pronunciation (RP) spread from the major public schools in the 19th century. This accent was adopted in the early 20th century by the British Broadcasting Corporation (BBC) for its announcers and readers, and is variously known as RP, BBC English, Oxford English, and the King's or Queen's English.

2.3 Importance of Educational Technology

In recent years much attention has been focused on the use of technology in classes. Identifying the value of technology in schools has challenged educational researchers for more than 20 years. Part of the problem is our evolving understanding of how technology accentuates student learning. Rapid changes in the technology itself also hamper research. Finally, the intertwining of complex variables in such a rich environment as a school precludes the pure isolation necessary to determine cause and effect. Rapid changes in technology have affected teaching-learning process deeply. The aim of improving educational Quality invites the question of to extent to which new technology aids this process. It is known that traditional formats are not always successful and efficient .New technologies offer opportunities for taking account of individual aptitude and interest. According to Jonassen, (1996) recent studies in the area indicate that effective use of education technology can help education system work better and more effectively. Use of technology in the classes gives students the chance of learning faster and more permanent. A significant increase was statistically found in the test scores of students in a computer aided learning environment. This shows the positive effect of technology for realizing effective learning. The attitudes of teachers are important factors influencing use of education technology in classes. According to Hardy, (1998) some researches show that teachers do not have positive attitudes toward computers and moreover they have fear against computer use in the classroom. Many people warn of the possible harmful effects of using technology in the classroom. Will children lose their ability to relate to other human beings? Will they become dependent on technology to learn? Will they find inappropriate materials? The same was probably said with the invention of the

printing press, radio, and television. All of these can be used inappropriately, but all of them have given humanity unbounded access to information which can be turned into knowledge. Appropriately used-- interactively and with guidance-- they have become tools for the development of higher order thinking skills. Inappropriately used in the classroom, technology can be used to perpetuate old models of teaching and learning. Students can be "plugged into computers" to do drill and practice that is not so different from workbooks. Teachers can use multimedia technology to give more colorful, stimulating lectures. Both of these have their place, but such use does not begin to tap the power of these new tools.

2.4 Policies and Programmes for Computer Education in India

Computer Education started in India during seventies. Few university and IITs started offering different courses in software and hardware. Due to the increased demands of skill manpower and the insufficient capability of the government sector to supply skilled manpower .Private institutes came forward to offer Computer Education courses towards the end of the eighties and early years of nineties there was a mushrooming growth of Computer Education institutions. It was due to huge demand of Computer Education manpower in national as well as international market .The contribution of central government and state government were quite encouraging in this direction to spread and develop Computer Education in the country. Different policies and programmes of central and state government help this sector a lot for their progress.

The report of the national workshop on computer literacy curriculum held at the national council of Education research and training in 1984 gave the following recommendations manifest the importance of computer Education.

- Computer Education should be introduced at senior secondary level and may gradually be introduced at middle and primary levels.
- Computer Education program should be a part of the curriculum for every students irrespective of the area selected for specialization.
- Computer literacy program should familiarization students with the computer as a versatile tool with immense application potential in all aspect of human development.

- Planning commission had also given emphasis on the expansion of Computer Education. The 7th five year plan (1985-90) emphasized for the reorganization of the education system so as to prepare the country to meet the challenges of 21st century. An amount of Rs700 corers were allotted in 7th five year plans for computer literacy and expansion of computer programmer at all the levels of Education.
- National policy on Education (1986) also put emphasis on Computer Education. A part from different innovative measures like, operation Blackboard, Navodaya vidhyalaya much emphasis was given on the vocational aspect of Educational referring to the Computer Education.
- The 10th five year plan recommended strategically for the development of Computer and Computer Education in the country in terms of the following strategies for hardware, software, marketing and human resource development.

2.5 Importance of Computer in Education

As we know that last five years plan documents states that:

“The importance of Education Technology has to be adequately provided for greater efficiency, effectiveness and wider reach of the Educational programs.”

The importance of Computer Education is also very well reflected in the report of the national workshop on computer literacy curriculum held at the National Council of Educational Research and Training (NCERT) in 1984. It mentioned the following:

- a. Computer Education should be introduced at senior secondary level and gradually be introduced at middle and primary levels.
- b. Computer Education would be part of the curriculum of every standard, irrespective of the area selected for specialization.
- c. Computer Education would familiarize students with computer as a versatile tool with great application potential in all aspect of human development. After the workshop the CLASS project was started which emphasized on Computer Education, The department of Electronics,

Government of India (GOI), in close co-operation with the department of Education, MHRD, and GOI launched the pilot project in 150 schools. In this regard, National Council of Education Research and Training (NCERT), New Delhi, took up the executive responsibility and Indian Institute of technology (IIT), New Delhi, provided initial input for implementation of CLASS project in terms of designing teachers and students training program CMS LTD. [computer Maintenance Corporation Limited] had the responsibility to install and maintain the computers of the project.

- d. Extension of computer literacy programs for all higher secondary schools by 1995 and elementary schools in long term due to the various facilities of Computer keeping in mind the recommendation of NPE (1992), the following Strategies and programmes were suggested by program of action (POA-1992):

Thus, it can be concluded that over the last two decades the NPE(1986), revised NPE(1992), POA(1990) and (1992) have highlighted not only the importance of computer suggest different strategies to implement the recommendation at different school levels. Even Ramamurthy committee report (1990) also laid emphasis on making Computer Education an integral part of the school time table. So it is beyond doubt that computers and information technology are going to play a very crucial role in Education system of India.

Realizing the need and importance of computer, the Central State Government are emphasizing on the implementation of computer education school and college level. Some states Government have started working in this direction. Computer was first introduced at the school level in S.C. India School, Goa in the year 1982. In the subsequent year gradually it was introduced in many other private schools in country. During 1990 and 1995 many private schools in Gujarat introduced computer Education in secondary and higher secondary schools as an additional subject either due to its huge potentiality to reduce the educational and management burden and to attract more and more students. In 1998-99 the Government of Gujarat introduced the computer Education at secondary school level as a part of the school subject.

In spite of recommendations given by the NPE and POA, the present classrooms are rigid in terms of time schedule, teachers and duration of period. It makes the teaching learning process quite un-interesting, unmotivated, non-participatory and boring. The present technology in the form of computer provides a lot of flexibility. That is the learner decides which topic is to be learnt. This software has both text as well as visuals. Students can manipulate different parameter of visuals and see their impact on the outcome. This concept can make an abstract concept very simple and within the limit of understanding of different students. This type of situation cannot be developed or controlled by the teachers in the classroom. Various curricular subjects can be taught with the help of Computer by making use of Computer Assisted Learning (CAL). In CAL, Computer is used as a teaching learning aid where computer is used to help both tutors and learners in imparting instruction. The whole curriculum is not taught through computer software rather assistance is taken where needed. It can help in learning at individual pace, at free will, and self corrective to short coming and weaknesses. Here computers can be used for presentation, simulation, animation and assist teachers to teach subjects properly.

2.6 Different Acronyms Associated with CAL

This field has gone by a numbers of different names as groups of practitioners have attempts to impose their own philosophies CALL remains the generic term.

1. CALL:-Computer assisted language learning (the generic term); some times computer – aided language learning.
2. CALI:-Computer assisted language instruction (more teaching oriented) less learning focused.
3. CBLI:-Computer based language training (views elements of language learning as training)
4. CELL:-Computer – enhanced language learning (computer's role is less central)
5. TELL:-Technology-enhanced language learning (accommodates more than just computers)
6. WELL:-Web enhanced language learning

7. ICT in LT:-Information and communication Technologies in Language teaching.(Focuses more on tool use)
8. NBLT:-Network-based language teaching (Focuses on computer mediated communication and the web)

The main difference between the acronyms is the focus given to the computer as part of the language learning process. CALL will be used as a general term throughout this chapter to cover all of the above, unless otherwise stated CAI refers to the use of the computer for instruction, regardless of what is being taught. CALL refers to the integration of techniques from the field of artificial intelligence and computational linguistics to enhanced CALL applications. CELL effectively means the same thing as CALL; TELL is an acronym that is mainly used in North America that covers the same domain as CALL, WELL refers specifically to the use of the web (or internet) in the language learning process. It is more specific than CALL but as computer technology becomes more internet –focused, it will cover a greater part of the CALL domain.

2.7 Concept of Computer Assisted Learning

“An Instructional system where teaching is carried out through computerized learning Materials is specially designed to incorporate all elements of instructions and evaluation. A corresponding system is CAL (Computer Aided Learning or Computer Assisted Learning) which is more learning oriented.”

According to Encyclopedia of Britannica CAL means:

“A Program of instructional material presented by means of a computer or computer system.”

The main feature of the CAL is that it enables the presentation of instructional materials to the students on a television screen or Visual Display Unit (VDU).The student communicates to the computer usually by means of a normal type –writer key board or by using a mouse. Interaction between the learner and the computer is possible in a CAL program. The program is usually in the form of an audio-tape, floppy disc, video tape or their combinations be .The machine

facing the learner can be the terminal of a mainframe computer, or a mini computer (Personal computer).

CAL is not a teaching aid, because teaching aids do not permit interaction with the learner. CAL is a total teaching system, which allows for mutual interaction between the learner and computer. The CAL program in the micro computer is intended to lead the students from one without any help or intervention from a teacher. The program will provide all the guidance to the students about what he is expected to do the interaction between the students and CAL program is more dynamic and more individualized in CAL than in any other system. But it requires pre-planning and careful programmings are essential for this. The CAL presents the learning experience in a structured manner. The students should respond individually, at his or her own pace. The program is structured in such a way that accurate and immediate feedback can be given.

2.8 History of Computer Assisted Learning

Computer Assisted Learning (CAL) is the interaction between a students and a computer system designed to help the students for learning. During the past 40 years, this general concept has been given many different names, such as Computer Based Instruction (CBI) and Computer Assisted instruction (CAI). The term CAL emphasize on 'Learning' rather than 'Instruction'. Historically, Computer Assisted Learning package developed along two tracks well-funded projects, such as those carried out by the Military, produced very sophisticated simulations that were used to trained Radar Operators, Airplane's Pilots, Tank crews and commanders of large battle units. The main aim of the CAL was training of the Radar Operators, Military, Airplane's Pilots, Tank Crews and Commanders of large battle units through computer.

Computer assisted learning, or CAL, is not a new phenomenon. Computer Assisted Learning can be defined as a computer program or file developed specifically for educational purposes. The technique used throughout the world in a variety of contexts, from Primary school to University. In the 1980s, the first computer assisted learning became available to University students.

2.9 Principles of CAL

The basic idea of CAL is that most efficient pleasant and permanent learning take place. The CAL has many features which are different from conventional method of Learning. The principle on which CAL based, were discovered in Psychological laboratories. These are some basic principles of CAL:

- **Principles of small steps:-**The subject matter is presented in meaningfully organized small-steps known as frames.
- **Principles of Active Responding:-**The Computer Assisted Learning makes the students respond activity which he/she goes through the CAL.
- **Students testing:-**The Teacher can assess the performance of his/her students. A student can also continually evaluate his performance while learning by CAL.
- **Self pacing:-**In CAL package the learner proceeds at his own pace. By providing self-pacing CAL package becomes more suitable to individual differences in learning.
- **Principles of immediate confirmation and feedback:-**As soon as the learner makes the response, which works as a feedback to the learners.

2.10 Different modes of presenting CAL

The simplest form of CAL uses the computer to present to learner with a series of exercise, which he must complete by giving some response to determine whether or not it form of congratulatory message if it was right or corrective comment if it was wrong and the computer was unable to recognize the response CAL offers a means of providing endless drill and practice without repetition, at a pace that can be controlled by the learner. The nature of the exercises depends on the learners 'progress. Thus, as he/she learns and his/her accuracy and speed improve, the exercises can become more difficult or reverse.

- I. **Drill and Practice Method:** - This method leads the learner through a series of examples to increase dexterity and fluency in the skill. Drill and Practice programs provide a verity of questions with the varied formats. The trainee is usually given several trials before the computer, presents the

correct answer. Several levels of difficulty can be available within the same drill and practice program. Positive and negative feedback as well as reinforcement can be included. In this method teacher arranges prior instruction. Teacher checks progress, computer asks questions, evaluates student's response and provides immediate feedback to the students and records student's progress. Students practice content that is already taught, responds to questions and receive confirmation.

II. Tutorial Method:-In the Tutorial Method, role the computer acts as the teacher. All interaction is between the computer and the learner. In this method, information is presented in small units followed by a question. The computer analysis the student response and appropriate feedback is given. Teacher selects proper material. Arranges instructions in logical sequence. Computer presents instruction, asks questions, monitors responses, and provides immediate feedback, summarized key points and keep records. Students interact with computer, answer the questions and accept the feedback.

III. Gaming Method:-A game is an activity in which participant follow prescribed rule that are different from those of reality as they strive to attain a challenging goal. The competition may be individual against individual, group against group. Game are above all, a form of play as such, those who think learning and playing are inhospitable may look them upon with suspicion, but as viewed by developmental psychologists play can be useful mechanism. Teacher sets limits, directs process and monitors result; it acts as competitor, judge and score keeper. Student learns skill, evaluate choice and compete with computers.

2.11 Characteristics of CAL

- CAL holds great promises for education of the future. If properly and effectively is used. It can cope up with problem of Quality and Quantity in education.

- In CAL more flexible kind of branching is possible because the computer can make complex decisions based on the student's performance. One can learn at his or her own pace, receive immediate personalized feedback and freely choose the content sequencing and degree of difficulty of instruction.
- CAL produces learning experience effectively. Here students are given assignment problem exercises, reading materials and references by computer for learning. After the students complete this work feedback can be given in order to make further improvement in particular area.
- CAL is developed on the principle of Programmed Learning Material (PLM). It also utilizes the aids of audio-visual system analysis, data processing and learning theory etc.

2.12 Advantages of CAL

There are numbers of advantages of CAL which are as under.

- A teacher generally addresses the whole class and does not have time for individual queries while student with the computer can interact with the software.
- Using CAL the student learns at his/her own pace thus both gifted and slow learners feel satisfied.
- A good CAL can take a student toward a guided discovery and so can be creative.
- A visual interactive impact is more easily grasped by the students and retained for a longer time. Self evaluation and feedback mechanism helps the student immensely.
- Colorful 3D diagram, graphs etc. makes the learning interesting.
- It provides one to one interaction in the teaching situation.
- CAL can improve efficiency and effectiveness. Effectiveness refers to improved learner achievement, where as efficiency means achieving objectives in less time or at a lower cost.
- CAL provides reliable and consistent instruction to learner, regardless of the teacher/trainer, the time of the day or the location.

2.13 Need of CAL in English

- As the nature of English is to develop listening, speaking, reading and writing skills, it can be easily explained through CAL
- As the students of standard VIII have an operating knowledge of computer, they can easily operate the computer and CAL.
- The CAL satisfies the curiosity of the students.
- The CAL helps to achieve teaching objectives of English.

Hence, with the above objectives and keeping in mind the advantages of CAL package and need of students of std VIII, the researcher prepared a CAL package to implement it and study its effectiveness in teaching English at std VIII.