CHAPTER 6

ICALL IN THE ELT CURRICULUM

The plethora of studies carried out in the area of ICALL have shown the definite advantages of the use of the computer in specific language learning activities. But almost four decades after the emergence of ICALL, it is yet to be introduced in the Indian curriculum.

Should ICALL be a part of the curriculum at all and if so how much of importance is to be given to it? Should an exercise in ICALL be an act of volition on the part of the learner or should it be made a compulsory component of the language class? What is the role of ICALL in remedial teaching? How do we fit ICALL into the timetable? These are questions for which no definitive answers have been arrived at yet.

In India, where ICALL is a much neglected area, it is heartening to note that the Central Board of Secondary Education (CBSE) in India has introduced New English Textbooks for the IX and X std called INTERACT adhering to the Communicative Language Teaching (CLT) approach. With the CBSE implementing a popular teaching methodology CLT there is hope that they might at least take notice of the increasing significance of ICALL studies.

The possible roles for the computer in ICALL are numerous - computer as teacher, computer as an educational aid, computer as an interactor, computer as an examiner and computer as a communicator. The
role of communicator has been assigned to the computer by David Dillon, Phil Moore and P.K. Dutt¹.

The use to which the computer can be put in the teaching of the Language Arts revolve around the idea of communication ie. it involves communication between the user and the machine. This could be in the form of reading or writing².

The computer has come a long way from being used as a mere communicator in language teaching. With the emergence of AI, the computer is now an interactor and a presenter of knowledge. At the same time, the computer should not control the learning process, as education is a liberating force. Chandler sounds the warning bell against letting the computer wield authority over the learning process. Talking about the computer's impact on children he observes, "Children are particularly vulnerable to manipulation by increasingly powerful media. If they are to survive in the Information Society which has been ushered in by the dramatic developments in microelectronics, they need to be able to rely on a range of methods of self-defence"³.

Children should be counselled so that they are not overwhelmed by the machine. They should be made to understand that the computer is only


an educational tool. Students who have opportunities to work with computers very early in their educational life may not suffer from the microelectronics - manipulation syndrome.

Among the four language skills - listening, speaking, reading and writing, computers can be effectively used to promote reading and writing skills.

6.1 MYTHS ABOUT ICALL

The idea that the computer will replace the language teacher making him redundant is a misconception prevalent among language teachers. That the learner can learn all that he wants from the computer right from the beginning having no use whatsoever for the teacher is another serious misconception. Both these claims are uncalled for. The computer can never replace the language teacher. The machine cannot bring any emotional involvement into learning. The presence of a human teacher means so much to the learners. The emotional encouragement that a teacher provides with a winning smile and a congratulating pat from the teacher can never face any threat from an electronic machine. Neither can learning become so automated as to be solely dependent on a machine.

There is also a fear that students will become so much dependent on the machine for learning that they will be reduced to automata. The idea that the dominating use of machine will make men dependent or a slave to it is an idea perpetrated all these years against the advancement of science and technology. Inspite of such an outcry, technology does advance making itself more and more vulnerable in the hands of man. This myth is shattered by Papert who views the child as programming the computer and in the process acquiring a sense of mastery over a modern and powerful technology
thus establishing an intimate contact with some of the deepest ideas from science, mathematics and arts. Higgins endorses the view that the computer is neither master nor slave in ICALL, but a tool for social interaction.

6.2 MOTIVATION IN ICALL

It is intriguing to note that a homogeneous group of learners exposed to identical language teaching and learning methods exhibit different levels of performance. Lack of motivation is often cited as the reason. It is the universal feeling that it is the duty of the teacher to provide motivation if the students are not sufficiently self motivated. As it is difficult for the teacher to be the driving force of motivation all the time, any other alternative to provide motivation is welcome.

One of the reasons for the lack of motivation for learning language may be the exigencies of mass education. In the Indian context, where students number between 40 and 60 in each class at the primary level and secondary level and even more than 100 in the tertiary level, if the computer can reduce demotivation by being challenging in its approach there is sufficient reason for introducing ICALL in the Indian curriculum.

Higgins writes against the over dependence of learners on teachers for motivation. "If we rely on teachers to select and devise optional challenges for all the learners in their charge, we are certainly straining the teachers' powers of judgement to the limit and may well be demanding

the impossible. The only alternative is to allow learners to find their own challenges by an exploration process. This is hardly possible in a pattern of mass education under a magisterial teacher, but the computer has made it feasible.6

ICALL can motivate learners to a very large extent. During this study too, the target students were highly motivated and eager to work with the ICALL programs. The motivation can be due to the novelty of the experience. The learners were perhaps curious to see and know what learning through computers involved. There have been many cases where constant interaction with CAL programs have led to a kind of addiction. Balajthy calls it the 'Hawthorne effect'. He suggests that the success of new and innovative teaching techniques owe to the fact that they are new and innovative. As students like variety and respond well to changes in their learning environments they may react positively to CALL research too. But once they are accustomed to this novelty the benefit of learning from a new method will evaporate.7 Hence the role of ICALL as a motivating factor in language learning is most welcome and the methodological novelty is bound to attract the student accustomed to conventional classroom techniques.

6.3 ICALL AND THE CURRICULUM

Before arriving at any conclusion about the place of CALL in the curriculum, it is important to understand the factors contributing to the formation of an ICALL related ELT curriculum. The key factors that have to be given a serious consideration are listed below.

6. Ibid., p.37.

1. the nature of the curriculum
2. the nature of the classroom
3. the role of the computer
4. the role of the teacher
5. the methodology of ICALL application
6. should the teacher be a programmer?
7. the relevance of teacher training
8. the evaluation of ICALL material and methodology
9. financial resources

Let us examine each of the above mentioned factors in detail.

6.3.1 The Nature of the Curriculum

In order to update itself, the language curriculum should include the developments taking place in the age of science and technology. In the wake of the spread of educational technology, computers have a vital role to play in modernising the language curriculum. ICALL studies ought to be integrated within a curriculum framework and the induction, unlike the use of other technological aids should have its own salutary effect.

Leech and Candin observe that ICALL does not offer challenges to the learner, teacher, nature of materials and classroom situation alone but to the language curriculum as a whole' and that it needs to be "provided with an educational rationale if they are not to become fashionable instruments of a self-promotive avant garde". And providing an educational rationale implies a broad outlook on the part of the learner.

coming out of the conventional setup. A liberal attitude and opportunity for learning freedom are found to be almost essential.

Questioning whether the computer does bring anything at all to the curricular table, James La Rue reports the remarkable achievement of the Blackstock Junior High School, Oxnard, California, due to the employment of computers for language learning. He reports a raise in student achievement among schools with similar population from the 56th to 94th percentile. The achievement is attributed to multimedia technology and a philosophy of a computer at every desk. Interestingly, for 45 percent of the students, English was not their native tongue. Blackstock used software that presented lessons either in the student's own language or in English. With help from the computer, students learnt English faster than they would have in a more traditional classroom.

It can be envisaged that the shy learners of English dominated by the use of native language influence who always find themselves out of place among others in classroom in Indian situation may find freedom to interact with a computer through a method of his own, chosen by himself and not imposed on him by the teacher. The freedom is also extended to the choice of subjects-subjects that interest him most, selected by the learner rather than prescribed to him. They can help people form new relationships with knowledge that cuts across the traditional line separating humanities from sciences and knowledge of the self from both of these. That the computer can concretize (and personalize) the formal and allow to shift the boundary separating the concrete and the formal. Formal processing of


knowledge thus becomes approachable concretely and the magic of learning owes to processing of knowledge that involves elements of thinking. This makes ICALL an interdisciplinary field involving students of computer science, students of language and linguistics and students of psychology who can all use and learn from ICALL from their chosen perspectives.

Artificial Intelligence techniques like problem solving, inference making and decision making can also be taught as an integral part of CALL. This can help in the overall personality development of students which should be an integral part of every curriculum. To achieve this, the curriculum should be framed in such a way that even while attaining proficiency in language is the primary aim concentrated upon in the class, there is a conscious attempt to develop the thinking abilities of the learner using the computer.

6.3.2 The Nature of the Classroom

ICALL classes can be organised in two ways.

1. There could be a common ICALL room in which certain amount of time is allotted for the ICALL class or
2. The language department can have an ICALL laboratory to cater to the needs and interest of the learner.

For a CALL class, we can have all the computers in the same room or computers in different areas within the campus can be linked through a network.

If the teacher wants to engage all the students in a ICALL class, then it is advisable to have all the computers in one place. This also gives the teacher the right opportunity to monitor the situation and see to it that things do not get out of hand. On the other hand, if the students are at the
college level and are capable of working on their own, a network will be suitable. A network prevents students from tampering with the programs and doesn't need a supervisor to distribute and collect discs after every class. Networking depends upon the type of computers available and is relatively costlier. Networking gives greater freedom to the learner psychologically.

There have been suggestions about organizing different group activities in the same class to make up for the insufficient availability of computers and make the most of the timetable. When one group is involved in a group discussion, one group can watch tutorials on the video, and another group learn language from a computer. Although the idea sounds exciting it is quite impractical. The teacher has to do a lot of homework and planning before being able to simultaneously engage four groups in four different activities. It becomes very difficult for her/him to monitor the situation. More than one teacher will be required in the class which the management will not easily grant.

Another possibility is to connect the computer to a large video screen. The teacher can involve the whole class in step by step learning. This defeats the very purpose of interactive learning at individualized pace.

Another point of concern relating to classroom activity is the type of interaction. While students are working on the computer, it is not necessary that it should always be a one-to-one reaction. Some programs like adventure games for language learning can be worked out in small groups from two to four students in a group. Even in case of vocabulary exercises which demand individual interaction with the computer, those students who prefer to work in pairs may be permitted to do so.
6.3.3 The Role of the Computer

There are varying opinions about the role of the computer in CALL. While Leech and Candin suggest that the place of the computer in ICALL is only of a "computational provision for educational purposes"\[11\], it may be reiterated that Higgins assigns the role of neither master nor slave but a tool that mediates social interaction within the classroom to the computer as already cited. Learning is now a change from teacher led to learner controlled activity.

Questioning "Who is in charge of learning: machine or machine user?" Dillon opines that learners get the feeling that they are being empowered by the machine if computers are considered a subject. "It may also work against the computer's powerful application to children's learning if viewed primarily as a code to crack.... The English Educational field has begun to view language, not as a separate subject matter, but as a means of learning and communication across the entire curriculum. Computers, too, make sense only across the curriculum, not apart from it, or tacked onto it"\[12\].

What is the role of computer in imparting language learning? There are different answers to this question that the teacher and the learner can come up with. To know about the role of the computer in ICALL, we have to study how learning takes place with emphasis on children's approach to learning. In the case of 'drill' programs for example, the

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computer controls the learning process as it elicits response, gives feedback, records and diagnoses. So much so that it becomes a kind of extension of the teacher but unlike the teacher can act consistently, accurately and impartially. But in this age of recommended learner autonomy, technology-empowered-learning providing no freedom to the learner can have adverse effects on learner psychology. It is in this context that the machine led activity of CALL can be overtaken by the knowledge providing interactability of ICALL.

ICALL programs can be made as knowledge based as possible giving the learner full freedom to interact with this knowledge. For example, an ICALL program in interpretive reading can cater to different levels of learners at different levels of learning. An interactive dialogue system in natural language which is one of the many applications of Artificial Intelligence can be built into the ICALL program to make learners feel at home with computers. This can also remove the learners' feeling of being computer-dominated.

6.3.4 The Role of the Teacher

With the introduction of ICALL, there is a shift in emphasis from the teacher to the pupil as the central figure. The dovetailing of instructional activities with the realisation of specific and clear-cut learning outcomes has inevitably led to a reassessment of the teacher's role in the classroom. There is a general belief that language teachers look at computers as intruders and that they are very discouraging towards the concept of using computers for language teaching. This parochial view seems to have changed over the years. Language teachers who were approached by this researcher were very eager to know how computers can be used for teaching reading. They willingly expressed their ignorance of the subject but
at the same time exhibited great curiosity in the study. There are two views about the role of the teacher in an ICALL classroom:

1. The teacher should act as a monitor, while the learners work on the computer.

2. There is no need for the teacher. The students can handle the ICALL programs on their own.

We cannot take stands unless we are aware of the nature of the task. If the ICALL material is a self instructional package, then the learners can work on their own. In the case of remedial teaching too where it is intended for learners to be on their own, the teacher is not necessary. The teacher can have a look at the student's progress at leisure if the ICALL material is so designed as to keep a record of students' performance. It is only when a student buys ICALL programs out of his own interests and works with it at home, that the teacher's role is totally absent.

In a Computer Based Learning curriculum, the teacher's role is necessary even though the learner is well acquainted with the method of working with ICALL programs. It is to be stressed over and over again that the computer is only an educational tool and Artificial Intelligence a technique. It is not envisaged to make language teaching completely machine oriented. ICALL is a computer application to be exploited for the benefit of language learning. The presence of a hovering human teacher is necessary to monitor the class and help if and when the learner requires it. Moreover the introduction of ICALL should not cause any anxiety to the language teacher once she/he has been made to understand that ICALL is only a development in educational technology, with an ulterior motive to
assist the teacher. The role of the teacher in ICALL as illustrated by Balajthy is given in Fig.6.1.

Fig 6.1
Role of the Teacher in CALL

It can be seen that the computer can train learners in subskill individualisation, writing and knowledge development, but it is the teacher who provides greater opportunities for learning speaking, listening and holistic reading.

6.3.5 The Methodology of ICALL Application

When ICALL is introduced in a curriculum in India it should be introduced preferably from the VI standard. In many city schools computers are introduced as a subject from the fourth standard. If the students are able to get a basic understanding of computers sufficient for their level in the fourth standard and fifth standard, then simple ICALL programs to learn the use of articles and prepositions, to improve their imaginative power by making them create stories using graphics, to learn to read the text with uncomplicated sentence structures supported by interesting animation can be introduced from the sixth standard.

The same facility can be extended to the language curriculum as well. However there should be a holistic approach to the methodology of applying ICALL to the language curriculum. It should blend with the language course and be purposeful. The ICALL materials should be developed in such a way that it strengthens one or many aspects of language learning like reading comprehension, sentence structures, guessing the meaning, reading speeds, composition writing etc. It should not be a program that has no relevance to the rest of the syllabus.

6.3.6 Should the Teacher be a Programmer?

Even though the language teacher is not expected to be a computer expert, it is necessary for the language teacher to know atleast the basics of programming and console operation to use ICALL material successfully in the class.

Some critics have suggested that the language teacher must learn programming. It is stretching the limit a bit too far by expecting all
language teachers to be proficient in computer programming. Programming is a skill in itself. Like any other subject, the acquisition and performance of the learner (language teacher learning programming in this case) will be anything but homogeneous. What is necessary is the production of ICALL programs of the highest order. If the ICALL programs are mediocre, then it will grossly affect the language learning process. There is no doubt that a language teacher who knows the rudiments of programming has a definite advantage. Learning a programming language is a worthwhile effort for the language teacher, because it provides insights into the structure of natural languages. BASIC, is widely available but is not ideal for ICALL purposes. More advanced languages such as PASCAL, SNOBOL, LISP and PROLOG have advantages for ICALL programming but this demands considerable time and effort for the teacher to gain sufficient mastery in programming. But this should not deter the teacher even though progress is likely to be slow. Ahmad et al state that ultimately the form of the teaching materials produced may well be determined more by what the teacher can program than by pedagogical consideration

ICALL programs written in AI languages have the facility of creating a natural language user interface. A natural language user interface is an intermediary facility between the machine and the user. It enables the user to interact in a natural language, say English with the computer. The AI program will decode this message in natural language to the machine language that can be understood by the computer. This can help non-programmer teachers feel confident while executing such ICALL programs in class because the program can be so designed that the user will

interact with the sentence in natural language only and not the syntax of LISP or PROLOG.

6.3.7 The Relevance of Teacher Training

The fact about teacher training is that there are very few training workshops. Even if workshops are organised for teachers to learn the basics of programming with the objective that they will be able to go back to their respective schools and take to programming in a big way, language teachers have very little time to devote to computer programming. Also, because of their ignorance or limited knowledge of programming, language teachers will be unable to assess the quality of their own ICALL materials. To overcome this difficulty, there should be regular meetings headed by linguists and programmers. This can help teachers exchange their ideas and overcome deficiencies in their programming skills before trying out the ICALL material on students.

The teacher should be the focus of microcomputing instruction. Absenting any real teacher training is tantamount to absenting any clear educational consensus about the value or appropriate use of technology\(^\text{15}\). If there is no teacher training it will lead to lack of learner autonomy and teacher control because the learner should be given autonomy without making the teacher redundant. A combination of teachers and telecommunications is the ideal solution for providing learner autonomy.

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6.3.8 Evaluation of ICALL Materials

ICALL evaluation should take into consideration, the purposes for which a particular ICALL program has been developed. ICALL evaluation should take place in a manner that is parallel to the preparation of ICALL materials so that improvements can be made as and when ICALL programs are being developed. In the initial stages of ICALL research, ICALL programming, ICALL evaluation and action research should take place in concordance and harmony.

ICALL evaluation can be improved by making it student-oriented, testable, systematic and with specific objectives. And this can be made possible by concentrating on the production of more and more intelligent ICALL programs.

CALL programs made available over the counter cannot be bought and used right away. The curriculum makers should first evaluate the material. Modifications should be made to suit specific needs. (This is easy in the case of Authoring Systems).

CALL research can begin with ICALL in India thus making a fresh and fruitful beginning. We can learn from the mistakes committed in early CALL research and try not to repeat them.

6.3.9 Financial Resources

Getting funds to carry out research in CALL oriented language programmes can be a serious problem. One proposal is to invest money in the preparation of CALL material and then earn the money back by selling them. But there can be two impeding factors:
1. CALL materials are not economically self-sustaining
2. Commercial sale of CALL programs may not be very high due to a lack of awareness. It may also be due to more importance given for science subjects than language. The cost of CALL programs may also discourage the customers from buying them.

It thus becomes near impossible to recoup the initial investment.

If CALL programs are written in AI languages then the minimum hardware requirement is an XT. An ordinary personal computer will not do. A survey made by this researcher showed that though most schools in the city did have computers, they were very few schools that had an XT or an AT. There could always be a lack of hardware/software support in institutions because of paucity of funds. This is bound to change in the future with the changing attitudes of the heads of institutions favouring the use of computers in education.

Computer Facilities

It is impossible to apply CALL to language learning unless computer facilities are available. All educational institutions should have adequate hardware and software support to be able to use CALL. Considering that computer facilities are not available to all the students even in America, the situation in India is quite pathetic. "For students (and administrators) access to computing is the big issue.... the chief complaint is a lack of resources: hardware, software and support staff.... access is an umbrella issue that affects all students..."16

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It is possible to provide CALL lessons through Local Area Networks thus destroying the distance in distance education. Computer networking and multimedia are all set to revolutionise education. Research reports showing CALL’s unsuitability for beginners will have to be reviewed with the entry of CDROMs. To cite one among many examples, a program called First Sense which helps students learn science related information does not require teachers to be present\textsuperscript{17}. Multimedia and networking is all set to make self-instructional learning a way of life in the next century.

**CALL and the Timetable**

Language classes are allotted lesser number of periods than other subjects. Fitting CALL into these limited language hours in the timetable is a challenging proposition. Among the hours allotted for language classes how much time is to be devoted to CALL classes is not known yet. Even if only limited time is allotted for CALL, it should be doubly confirmed that computing involves active language learning. One of the advantages of CALL is that if a student misses a class, he can easily make up by learning from the particular CALL program when he is free or after school hours. If the same student misses a regular language class or any class for that matter, he may need the assistance of the teacher or his classmates to make up for the lost class. The individualized help from the computer helps remove the students’ anxiety of losing the link in learning.

We need have no fear about children’s ability to adapt to new learning systems. The present generation of students in India are an awfully bright and ambitious lot who seem to know what they want. Their initial surprise over the use of computers to learn language is bound to

vanish after a few classes. They will soon come to terms with the idea that computers can be used in any part of education. During this study too, this researcher took quite some time to convince the seventh standard students of the experimental group that as computers can be used to learn and teach anything, it can be used to teach English too. Once the methodology of the application of the specific ICALL program was explained to them in graphic detail they could not wait to enter the computer lab.

If CALL programs can encourage learners to think and learn without affecting their individual styles of learning, CALL will certainly come to be accepted. Artificial Intelligence has a big role to play in providing learner autonomy and encouraging thinking in learners.

6.4 THE A.I. PERSPECTIVE

Teachers and learners who are used to CALL programs have difficulty in gaining access to AI and adapting themselves to an alternative approach. The ubiquitous computer schools in India that cater to the computer-career-needs, include the teaching of BASIC, PASCAL, C, C++, OOPS, ORACLE, UNIX RDBMS and even the introduction of networking very recently in their course, but there is not a single computer school that teaches programming in Artificial Intelligence languages like PROLOG and LISP though lot of software projects and research work in Artificial Intelligence are being undertaken.

The main difference between learning from CALL and learning from ICALL is that the student has to know BASIC if a CALL program has been written in BASIC but need not know PROLOG if an ICALL program has been written in PROLOG with a natural language interface. The problem of ignorance of programming will arise when a language teacher wants to
write an ICALL program. New AI applications face the normal institutional and personal obstacles of designing and evaluating as any other activity in a new research area.

A.I. is predominantly a logic based concept. Using AI applications for developing CALL programs is akin to using logic as a computer language with children which provides a plethora of possibilities. By using logic, children can learn a particular form of Knowledge representation which can then be applied to other areas of learning.

There are differing opinions over the stand to be taken while applying A.I to learning in general. While Papert has popularised Piaget’s idea that the focus should be on the learner, Hirst suggests that the emphasis should be on the different forms of knowledge (Hirst, 1973). Bruner suggests a spiral curriculum that will break the traditional barrier between disciplines (Bruner, 1972). Should intelligent CALL be a tool for the teacher? Or should we develop intelligent CALL programs in such a way that the learner can use it to learn specific language skills by himself or even out of the curriculum? And during all these research works, in what capacity should we use the computer?

All these questions can be answered convincingly only after further research is done in applying AI to language teaching. Though it is three decades since the application of AI to language learning had been envisaged and begun to be used by people like Seymour Papert, no clear methodology has been arrived at so far. One of the reasons for this may be negligible attention given to CALL evaluation programmes. Therefore the need of the hour is a collaborative and concentrated work plan under a supervisory committee with sufficient infrastructure for CALL evaluation programmes. An even more urgent need is the necessity for curriculum makers in India
to take cognisance of the significance and relevance of CALL studies. They must make an earnest attempt to introduce it in the Indian educational system at the earliest because there is a lot to gain from CALL (inclusive of ICALL) than can be imagined.

The need for such an impetus must be recognised for computer based learning not to become disparate in its efforts and restricted in its vision.