Chapter 1
INTRODUCTION

1.1 BACKGROUND AND PURPOSE

The IT revolution and globalization of business have brought communication skills to the forefront of academia and industry. With the whole world becoming a global market and businesses becoming diverse and result-oriented, professionals and technocrats are facing challenges in communication every day. Success in this competitive environment not only depends on acquiring knowledge and hard skills, but also on developing effective technical communication skills.

Communication is as fundamental to our social living as eating to our biological existence. We may be able to articulate words but not communicate well. We may hear or read and recognize words, but not comprehend well. If we do not master communication skills, we may ruin our social and professional relationships.

There was a time, not long ago, when soft skills were thought of as poor cousins of the hard skills. While investing considerable time and resources to acquire the hard skills, bright students ignored the soft skills. Once you mastered the hard skills, they thought, the lowly soft skills would follow without any special effort. Teachers and parents often endorse this lop-sided view of social and technical skills.

In the globalised world, ‘techies’ are discovering the harsh reality that technical skills without soft ones would make them knowledge workers, not managers or leaders. Hard skills are perishable and machine-replaceable. Those who cannot communicate will lose out; they get much less credit for their achievements than they deserve.

In the Indian context, an engineering student’s success in the on-campus recruitment is mainly based on the demonstration of communication skills. According to NASSCOM’s (National Association of Software and Services Company) president Mr. Kiran Karnik, only 25 percent of technical graduates are suitable for employment in the outsourcing industry because of their lack of abilities to speak or write well in English. (qtd. in P’Rayan Developing 2).

Around ten engineering colleges out of about one hundred such colleges in the state of Punjab in India have a good placement record. Most of the final year
undergraduate students of these colleges are recruited by reputed IT and core-engineering companies. In some of these colleges more than 80 per cent of the students are placed and recruiters attribute the success of the students to their ability to communicate well and think clearly.

The on-campus recruitment process consists of three or four stages: 1) aptitude test, 2) technical interview, 3) group discussion, and 4) HR interview. During the four stages the candidates’ technical knowledge, analytical, verbal reasoning, critical reading, communication and group skills are assessed and at each stage the unsuccessful candidates are filtered out. Those educational institutions which impart employability skills to their students are successful in getting most of their students placed in top companies. In many engineering colleges communication skills trainers have been employed on full-time basis to train their students.

The urgent need to improve technical students’ communication skills has been emphasized by educationists as well as employers. Narayanan, vice chairman of Cognizant Technology Solutions and chairman of NASSCOM, in an interview answered a question regarding the talent demand and supply gap and the role of the NASSCOM to help the industry bridge the gap: “The current situation is that, in terms of availability of talent, the numbers are good. The problem lies in the suitability of people. The industry has moved forward rapidly and technology also has changed but the educational institutions and the curriculum have not changed that rapidly. So, we have to bridge the gap by providing additional training to the people who are coming out of colleges so that they are industry-ready.” He suggested that the teachers of English at professional colleges should undergo a paradigm shift and cease to be teachers of just grammar and structure; they are expected to play the role of communication and soft skills trainers (qtd. in Rayan Developing 3).

1.1.1 The Value of Reading Skills in an Engineering Career

In the spring of 1980, Spretnak conducted a survey of 1000 engineering alumni from the U. C. Berkeley classes of 1948 through 1978 titled “Technical Communication and Professional Engineering.” He found that, on an average, engineers spend twenty-five percent of their job-related time writing, twenty-three percent reading technical and business material, eleven percent supervising the writing of others, and seven percent giving oral presentations—that is, more than half...
of an engineer’s work is comprised of communication tasks. Once an engineer progresses beyond entry level, he or she spends a good deal of time in reading technical material, analyzing it and responding to it. According to the Berkeley alumni survey, supervisors spend an average of ten percent of their time critiquing the writing of others, but this amount nearly doubles, i.e., nineteen percent, when engineers move into positions such as project head, department head, or division director. Critical reading skills, then, may be seen as a requisite for such advancement. Moreover, engineers at all levels must be able to assimilate written technical information efficiently. One respondent to the survey wrote, “Develop reading skills! Too many young engineers read (study) for details and miss the overall view.”

1.1.2 Reading as an Aid to Learning Writing Skills

In addition to the fact that critical reading skills enhance advancement in an engineering career, there is a pedagogic reason for assigning reading: Readers write better. In an experiment involving two groups of high school students in Massachusetts, the group that read regularly but had few writing assignments wrote better at the end of the year than did the group that wrote a lot but had no reading assignments. One class in each of the four grade levels, the “writing” class, wrote the equivalent of a theme per week, which was rigorously corrected by the teacher and revised or rewritten by the student. The “reading” class in each grade wrote a theme only every three weeks and spent one period each week reading books they had selected. Writing skill was evaluated at the beginning and end of the academic year via an objective test of spelling, diction, style, mechanics, etc. (the STEP Writing Text, Form 2A and then 2B, designed by the Educational Testing Service), plus a composition test evaluated by three experienced graders of the ETS English Achievement Test.

At the end of the year, the average amount of improvement among students in the reading classes was nearly twice that of students in the writing classes, as measured by the STEP Writing Test: The readers improved by +6.5 points, the writers by +3.5. (The total number of points in the test is 60). The composition tests were graded in three areas with a range of nine possible grades (1-9). In content and organization, the average amount of improvement among the readers was more than one and-a-half times that of the writers, i.e., +.7 of a grade compared to +.45. In mechanics, the average amount of improvement among the readers was more than
three times as great as that of the writers, i.e., +.38 of a grade compared to +.11. In
diction and rhetoric, the average amount of improvement among the readers was ten
times that of the writers, i.e., +.7 of a grade compared to +.07. A pilot study two
two years earlier in that high school had shown similar results, although they were not
monitored as thoroughly as in the larger experiment.

These findings support the dictum that one must absorb examples of good
styles while learning to write well—or, more simply, “Writers read.” Numerous
respondents to the Berkeley alumni survey shared this opinion, e.g., “If one does not
read, it is difficult to write well,” and “Reading technical papers is a very helpful aid
in learning to communicate.” In addition, cross-tabulation of the data from that survey
showed a positive correlation between writing skills and the amount of time engineers
spend in leisure reading. What is surprising is that research on this important
correlation has been so scarce. Studies on how reading aids a writing student’s
progress would be worthwhile. From the Heys study, one can assume that the brain
somehow assimilates examples of economical prose, extensive vocabulary, and
effective ordering which the reading of good writing provides. Later, the writing
student seems to draw creatively from his or her “data bank” of rhetorical
possibilities.

1.1.3 Importance of Writing Skills

Writing well is an art that every body should master in order to be successful.
Writing well means conveying thoughts, ideas, and facts in simple and clear language.
The art of writing is not something that is taught seriously at any level. But, it is
essential to learn it in order to excel at both academic and professional levels. Good
writing skills are important for engineering students because of the following reasons.

Students with good writing abilities have an edge over the others. They
generally score better than the other students as they can effectively convey what they
have learnt in the written examination.

Whichever trade one pursues in an engineering college, the importance of
writing well cannot be undermined as an engineering student should have knowledge
of technical writing as he/she may be required to write technical documents - in
college, while training and after joining a job. Similarly, a science student might be
required to write research papers. For writing research papers, it is necessary that one
is able to put forth the right facts and information. Also, the research paper should be
free from spelling and grammar errors. If one is not a good writer, then he/she will not be able to accomplish the tasks properly.

Good writing skills are also required for getting a job, be it a summer job, part-time job or a regular job after completing the college. These days, the employers look for good verbal and writing abilities in the candidates. Every profession requires effective communication, and good-writing skills are a must. These are required for making presentations and reports and are handy for communicating through e-mail.

For decades, engineers have been criticized for lacking adequate communication skills (Brillhart 148; Barnum and Fischer 10) and educators have tried diverse strategies for improving engineers’ communication skills especially writing skills. Proficiency in writing skills is a step towards the ladder of success in profession.

So after a survey conducted on the students and discussion of the same in many conferences and seminars, the researcher decided to integrate TELL in the communication skills’ curriculum of the first year engineering students. Given the vital role of technology in today’s world, this study will examine the value of effective technology use in the language lab with specific references to programme and curricula.

1.1.4 Technology Enhanced Language Learning (TELL)

In the history of education, few topics have sparked such public debate as the use of technology in language learning. New communication technologies are part of the broader ecology of life at the turn of the century. Much of reading, writing and communicating is migrating from other environments (print, telephone, etc.) to the screen. In such a context, one can no longer think only about how to use technology to teach language. One also must think about the types of language students need to learn in order to communicate effectively via computer. The main advantage of new technologies is that they can be used to help prepare students for the kinds of international cross-cultural communication that are increasingly required for success in academic, vocational or personal life. Educational technology, especially computers and computer-related peripherals, has grown tremendously and has permeated all areas of life.

The use of technology for foreign language instruction has spread rapidly in the developed countries during the last two decades. Studies of the effect of technology-enhanced instruction on achievement and studies of student attitudes
regarding learning with technology have also increasingly been reported (Salaberry 48). There are various reasons for this.

One of the main reasons for using new technology in language classrooms can be interpreted in the light of the changing goals of language education and the shifting conditions of a postindustrial society (Warschauer and Meskill 312). New technology has become a part of the social fabric. So, while language students were taught to write essays and read magazines a generation ago, they must now be taught to write e-mail and conduct online research. Thus, integrating technology into language classrooms is inevitable.

Second, technology integration in foreign language teaching demonstrates the shift in the educational paradigm from a behavioural to a constructivist learning approach. Language is a living thing, so the best way to learn a language is in interactive and authentic environments. Computer technologies and the Internet are powerful tools for assisting these approaches to language teaching. Even though constructivism is not a theory associated with using technology, constructivist assumptions are guideposts for developing a vision for integrating technology into the language curriculum (Brown, D. 190; Wolfe 27). The following is a summary of these assumptions:

Learning is an active process. Learning is a natural, integral and ubiquitous part of living. In today’s language classes, the teacher’s role should shift from “sage on the stage” to “guide on the side,” while students should actively search for and explore answers instead of receiving standard interpretations. Technology integration helps this shifting process for teachers and students.

Problem solving is the focus. The Internet, as well as some simulation software, provides a stage for the real world where students observe, think, question, organize and test their ideas. Unlike libraries, the Internet is a living medium that offers updated information — enriched by graphics and animation — to help students solve real-life problems.

Learning is a collaborative process. According to Anderson and Speck, students prefer working with a partner over working alone on computer activities. Leu adds that “students often learn about complex multimedia environments by showing each other cool things.” (qtd. in Wang, L. 13) Thus, through collaborative technology activities, students benefit from working with each other. Technology has also created a great way to communicate with people in different cultures. For instance, the
Internet offers a worldwide learning environment that makes distance communication fast and affordable. By using the Internet, cross-cultural cooperative groups can be built up.

Other reasons for applying computer technology to language learning as stated by many researchers and ELT experts include increased motivation, improvement in self-concept and mastery of basic skills, more student-centered learning and engagement in the learning process and more active processing, resulting in higher-order thinking skills and better recall.

Computer technology can provide a lot of fun games and communicative activities reduce the learning stress and anxiety and provide repeated lessons as often as necessary. Those abilities will promote the second language learners' learning motivation. Through various communicative and interactive activities, computer technology can help second language learners strengthen their linguistic skills, affect their learning attitude and build their self-instruction strategies and self-confidence. Dudeney (31) also asserts that computer assisted language learning programs and the Internet can be wonderful stimuli for second language learning.

According to Robertson et al. (315), the participants who joined computer-assisted language learning programs also had significantly higher self-esteem ratings than regular students. Additionally, there seems to be a beneficial multimedia effect, especially for low achieving students, when it is used to illustrate concepts and organize factual information (Nowaczyk 368).

The appropriate use of TELL is also believed to contribute to the motivation level of the students. Warschauer identified three common factors of student motivation provided by a technology-enhanced setting: communication, empowerment and learning. ‘Communication’ is represented by the finding that students liked the ability to communicate with others and to engage in real, as opposed to contrived, communicative acts. ‘Empowerment’ describes the finding that students felt empowered in the technology environment since they felt less isolated and were less afraid to contact others. The ‘learning’ factor describes the finding that students believed the computer gave them certain kinds of control over their learning by enabling them to learn faster and more independently and to write more creatively. Students in the computer-mediated communication project reported positive attitudes which could be attributed to these factors (Comparing 10).
Today, with the high development of computer technology, computers can capture, analyze, and present data on second language students’ performances during the learning process. As all teachers know, observing and checking students’ learning progress are very important activities to help students achieve their second language acquisition. When teachers attempt to assess students’ learning progress, they can get the essential information from a well-designed computer language learning program and then offer feedback tailored to students’ learning needs (Taylor and Gitsaki 282). In addition, students can get various authentic reading materials either at school or at home by connecting to the Internet. And, those materials can be accessed twenty four hours a day. In a word, computer technology also provides interdisciplinary and multicultural learning opportunities for students to carry out their independent studies.

For learning interaction, Warchauer indicated that random access to Web pages would break the linear flow of instruction. By sending e-mail and joining newsgroups, second language learners can also communicate with people they have never met before and interact with their own teachers or classmates. Shy or inhibited learners can be greatly benefited through the individualized technology-learning environment and studious learners can also proceed at their own pace to achieve higher levels (16-20).

This paradigm shift coupled with the prevailing dynamic changing world leads teachers and researchers to find ways to improve learning and teaching to meet the ever-growing needs of learners as well as society.

Inspired by the rapid development of technology from the 1980s, the computer has now become an influential component of second language learning pedagogy. Educators like Kung recognize that utilizing computer technology and its attached language learning programs can be convenient to create both independent and collaborative learning environments and provide students with language experiences as they move through various stages of second language acquisition.

When computer technology combines with Internet, it creates a channel for students to obtain a huge amount of human experience and guide students to enter the “Global Community”. In this way, students cannot only extend their personal view, thought and experience, but can also learn to live in the real world. They become the creators not just the receivers of knowledge. And, “as the way information presented is not linear, second language learners can still develop thinking skills and choose what to explore” (Lee).
Technology has the potential to address a variety of students’ learning styles and academic needs simultaneously and seamlessly. Research has shown that the effective use of technology increases learning opportunities and facilitates new learning.

### 1.1.5 Changing Educational Model

With the transformation in the existing traditional education model, the advent of cutting-edge technology in the educational ecosystem has become the need of the hour. It will enable the students to move from the emphasis on knowledge memorization to knowledge application, analysis, synthesis and evaluation.

#### Table 1.1 A Paradigm Shift in the Educational Model

<table>
<thead>
<tr>
<th>S. No</th>
<th>From</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Learner acts as a passive listener</td>
<td>Learner acts as an active listener</td>
</tr>
<tr>
<td>2</td>
<td>Subject centered learning</td>
<td>Learner centered learning</td>
</tr>
<tr>
<td>3</td>
<td>Competitive and isolated learning</td>
<td>Collaborative and social learning</td>
</tr>
<tr>
<td>4</td>
<td>Enriched knowledge aspect of the learner</td>
<td>Helpful in developing knowledge as well as understanding</td>
</tr>
<tr>
<td>5</td>
<td>Closed classroom environment</td>
<td>Networked environment</td>
</tr>
<tr>
<td>6</td>
<td>Delayed and unfocused feedback</td>
<td>Prompt and focused</td>
</tr>
<tr>
<td>7</td>
<td>No place for current knowledge</td>
<td>Current information is provided exclusively</td>
</tr>
<tr>
<td>8</td>
<td>Monotony in classroom environment</td>
<td>Vibrant classroom with exciting and challenging situation in the classroom</td>
</tr>
<tr>
<td>9</td>
<td>Teacher-dominated environment</td>
<td>Proper interaction between teacher and student</td>
</tr>
<tr>
<td>10</td>
<td>Dull and boring traditional activities</td>
<td>Innovative activities involving internet and multimedia</td>
</tr>
<tr>
<td>11</td>
<td>More emphasis on bookish language</td>
<td>Sharpening thinking, analytical and decision-making skills of students</td>
</tr>
<tr>
<td>12</td>
<td>Retaining of learnt concepts for a short period</td>
<td>Retaining of learnt concepts for a longer period.</td>
</tr>
<tr>
<td>13</td>
<td>Emphasis more on theoretical concepts</td>
<td>Emphasis more on practical aspects.</td>
</tr>
</tbody>
</table>

Victor Hugo once said, "Nothing is as powerful as an idea whose time has come." Technology, specifically computer technology, is more pervasive than ever before. As such, it has dramatically changed the face of education in the Twenty first century and will continue to do so.
The Internet, being a repository of content on every subject imaginable, is a network of people wanting to connect and communicate. What CALL educators do anecdotally agree about is the fact that using computers invariably increases the motivation of students to learn. And this is huge. We all know that levels of motivation have a great impact on rates of attendance, levels of engagement especially among the students of professional colleges.

“It is precisely "the real thing" that students must engage in on the computer; real problem solving, real writing, real collaborating, real communicating, real group work, real interpretation and criticism and analysis of complex problems. This can be accomplished by helping students develop active mastery of computers for their own production of knowledge, rather than passive use.” (Warschauer *Computers* 61)

1.1.6 A Brief History of Technology and Language Learning

Virtually every type of language teaching has had its own technology to support it. Language teachers who followed the grammar-translation method (in which the teacher explained grammatical rules and students performed translations) relied on one of the most ubiquitous technologies in education, the blackboard—a perfect vehicle for the one-way transmission of information that method implied. The blackboard was later supplemented by the overhead projector, another excellent medium for the teacher-dominated classroom, as well as by early computer software programs which provided what were known as "drill-and-practice" grammatical exercises.

In contrast, the audio-tape was the perfect medium for the audio lingual method (in which students were believed to learn best through constant repetition in the target language). University language classes in the 1970s and ’80s generally included mandatory presence in the audio lab, where students would perform the dreaded repetition drills.

By the late 1970s, the audio lingual method fell into disrepute, at least in part due to poor results achieved from expensive language laboratories. Whether in the lab or in the classroom, repetitive drills which focused only on language form and ignored communicative meaning achieved poor results.
The 1980s and 1990s have seen a full-scale shift in the direction of communicative language teaching, with an emphasis on student engagement with authentic, meaningful, contextualized discourse. Within this general communicative trend, we can note two distinct perspectives, both of which have their implications in terms of how to integrate technology into the classroom. These can roughly be divided into cognitive approaches and sociocognitive approaches.

Cognitive Approaches

Cognitive approaches to communicative language teaching are based on the view that learning a language is unique psycholinguistic process. From this perspective, language learners construct a mental model of a language system, based not on habit formation but rather on innate cognitive knowledge in interaction with comprehensible, meaningful language. Errors are seen in a new light—not as bad habits to be avoided but as natural by-products of a creative learning process that involves rule simplification, generalization, transfer and other cognitive strategies. A learner's output, if relevant at all, is beneficial principally to the extent that it helps make input more comprehensible or salient so that the learner can construct his or her own knowledge of the language.

Technologies which support a cognitive approach to language learning are those which allow learners maximum opportunity to interact within meaning-rich contexts through which they construct and acquire competence in the language. Examples of these types of technologies include text-reconstruction software, concordancing software, telecommunications and multimedia simulation software.

Text-reconstruction software (e.g., NewReader from Hyperbole or Text Tanglers from Research Design Associates) allows teachers to provide students various texts in which letters or words are either missing or are somehow in mixed up order. Students work alone or in groups to complete or re-arrange the texts, thus supporting a process of mental construction of the linguistic system. While such activity could in theory be carried out with paper and pencil, the computer provides facilitative functions for both teachers and students. In keeping with students' needs, interests and current curricula, teachers can quickly and easily create re-arranged texts.
or cloze exercises from any original word-processed passage. Students can use hints provided by the computer as scaffolds for the acquisition process.

Concordancing software (e.g., *Monocone* from Athelstan) allows teachers or students to search through small or large texts to look for instances of the actual use of particular words. Concordancers are thus supplements to dictionaries in that they help locate the usage of a word, rather than just its definition. In addition, concordances are useful for investigating collocation meanings (e.g., "large box" vs. "big box," or "depend on" vs. "depend in" vs. "depend for") or grammatical features (e.g., "was going" vs. used to go). Indeed, language learners can develop their own hypotheses regarding rules of syntax or semantic collocations and test these out as powerful problem-solving activity.

While text-reconstruction programs, concordancers and multimedia simulations are often used in pairs or groups, the software programs by themselves do not of themselves necessitate human-to-human interaction.

**Sociocognitive Approaches**

Sociocognitive approaches, in contrast to cognitive approaches, emphasize the social aspect of language acquisition; learning a language is viewed as a process of apprenticeship or socialization into particular discourse communities. From this perspective, students need to be given maximum opportunity for authentic social interaction, not only to provide comprehensible input but also to give students practice in the kinds of communication they will later engage in outside the classroom. This can be achieved through student collaboration in authentic tasks and projects while simultaneously learning both content and language.

The Internet is a powerful tool for assisting a sociocognitive approach to language teaching and it is in fact this fit of the Internet with a sociocognitive approach that largely accounts for the newfound enthusiasm for using computers in the language classroom. The Internet is a vast medium that can be used in a myriad of ways. Given below are some of the principle ways that some of the main online tools are being used in language teaching.
Computer-Mediated Communication in a Classroom

There are several different approaches for using the Internet to facilitate interaction within and across various discourse communities. One way to use online activities is to foster increased opportunities for interaction within a single class. This takes place both through computer-assisted classroom discussion and through outside-of-class discussion. Computer-assisted classroom discussion makes use of synchronous ("real-time") writing programs, such as ‘Daedalus Interchange’ by Daedalus, Inc. The class meets in a networked computer lab and students converse through writing rather than through talking. Each student types on the bottom of the screen and hits a key to instantly send the message to the rest of the class. All the messages are listed chronologically on the top half of the screen and can be easily scrolled through and re-read. The entire session can later be saved and passed on to students, either in electronic form or hard copy. Outside-of-class discussion is usually carried out using asynchronous tools, such as e-mail or conferencing systems. Special services (listservs and newsgroups, for example) can be set up so that messages sent get forwarded to either a small group or the whole class.

Electronic communication within a single class might be viewed as an artificial substitute for face-to-face communication. However, it has been found to have a number of different features that extend oral communication and thus can be well-exploited as an additional medium of communication within a class. First, computer-assisted discussion has been demonstrated to be more democratic than face-to-face discussion; teachers or a few outspoken students are much less likely to dominate computer-assisted discussion as the medium encourages more equal participation, resulting in class discussions which are more fully collaborative (Kelm 449; Kern 460). Second, computer-assisted discussion allows students to better notice the input from others’ messages and incorporate that input into their own messages, thus expanding opportunities for the learning of new linguistic chunks (St. John and Cash 191-197). Third, computer-assisted discussion, which takes place in writing and allows more planning time than does face-to-face talk, features language which is lexically and syntactically more complex. Finally, computer based discussion that takes place outside the classroom increases students’ opportunities to communicate in another forum, affording both general language practice and practice in writing. For
all these reasons, language teachers (especially but not exclusively in courses which feature writing) have found single-class computer-mediated communication projects to be beneficial.

**Computer-Mediated Communication for Long Distance Exchange**

Computer-mediated communication between long-distance partners offers many of the same advantages and then some. In particular, it allows students the opportunity for target language practice in situations where such practice might otherwise be difficult. This is especially important in foreign language classrooms, where students might have little other access to authentic language use.

Long-distance exchange projects have been organized in a variety of ways, generally using e-mail but also using web-based conferencing systems or various types of software for synchronous chatting. It is generally agreed that the most effective exchange projects are the ones that are well-integrated into the course goals and are based on purposeful investigation rather than just electronic chat. Such projects might involve joint exploration of culture, social conditions, films or literature, and often result in some kind of collaborative publications.

**The World Wide Web**

The World Wide Web offers a vast array of resources from the world. While the majority of web pages are in English, increasingly large numbers exist in other commonly-taught (and some uncommonly-taught) languages, including Spanish, French, German, Japanese and Chinese. Accessing and using these pages in language education supports a sociocognitive approach by helping immerse students in discourses that extend well beyond the classroom, their immediate communities and their language textbook. This is particularly critical for foreign language students who otherwise see the target culture only through their instructor and curriculum. Students can use web pages as authentic materials for conducting research on culture and current events or for gathering material for class projects and simulations. Students can also use e-mails to promote their writing skills.
Web 2.0

“The Internet has changed”, said Alm (29). Wikipedia, Blogs, Flickr, RSS, YouTube, Tags replace Webpages, bookmarks, online directories and reference materials that we just started to recognise as acceptable equivalents of print materials (Alm 29). Moving away from a replication of the print media (and the book metaphors), the Web begins to develop its own identity, less product focused (as print was) and more process oriented (as life is).

Computer technology itself has greatly influenced these developments and prompted innovative applications. It seems that yet again new opportunities for CALL are emerging in what is labelled Web 2.0 in the computer world (O’Reilly). Alm gives an overview of shift from Web 1.0 to Web 2.0 (Table 1.2).

<table>
<thead>
<tr>
<th>Web 1.0</th>
<th>Web 2.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authentic materials like text, pictures, audio, video</td>
<td>Live Materials like RSS, Flickr, podcast, videocast</td>
</tr>
<tr>
<td>Webpages</td>
<td>blogs, wikis</td>
</tr>
<tr>
<td>discussion forum</td>
<td>Blogs</td>
</tr>
<tr>
<td>Separate applications for email, chat, photos, music, video etc.</td>
<td>social networking (e.g., MySpace, Orkut, Facebook)</td>
</tr>
</tbody>
</table>

Whereas Web 1.0 supplies resources and means for communication for the language classroom (many text book publishers provide supplementary material on a website), Web 2.0 offers additional structures that can be used as learning environments. These structures are highly adaptable to the needs of language learners and enable them to actively become part of a learning community or target language community.

1.2 STATEMENT OF THE PROBLEM

The researcher has been teaching the students of engineering colleges for the last six years. She found that despite undergoing the course of communication skills in their theory and practical labs as a part of their curriculum in the first year, they do
not excel and do not show performance in various placement exams and other competitive exams after completing the course. The general English course for students at the undergraduate level does not bring them to the required competence in all areas of language at the end of their graduation. It is found that many students across disciplines are not very good at communication and generally lack the proficiency they need to meet the growing demands of the present day workplace.

Students at the completion of their graduation end up with excellent technical skills, however, lacking in effective communication. Concrete efforts need to be made to prepare students for utilizing communication skills in an effective manner.

High proficiency in English is seen to be essential for socio-economic development in India. India is now one of the most important destinations for off-shoring business processes that in turn have fuelled rapid economic growth. The impact of globalisation and economic development has made English the 'language of opportunity' and a vital means of improving prospects for well-paid employment. The demand for young people with good communication skills far exceeds the supply due to the recent boom in industry - governments, companies, universities are all putting money into finding ways to improve English language teaching and reforming the way English is learnt and taught. In the light of such a growing necessity for excellent communication skills, the researcher decided to use technology to improve their skills. The “talk and chalk” method has a long history in college teaching, but the time has come to introduce the available cutting-edge educational technologies that enable instructional methods for promoting active learning in students.

The researcher identified the following reasons for the poor acquisition of the skills:

1. Boredom.
2. Lack of Interest.
3. Lack of motivation.

So, to overcome these problems and to contain absenteeism in the practical classes, the researcher planned to introduce technology and related tools for language learning. In a study designed to examine the effectiveness of web-based instruction in the writing of freshman EFL students, Al-Jarf found that the use of web-based lessons as a supplement to traditional in-class writing instruction was significantly more effective than teaching that depended on the textbook alone. Moreover, research on
the effect of technology on learning English in India has not yet drawn researchers’ attention.

1.3 RESEARCH QUESTIONS

This research has tried to find answers to the following questions:

1. Is there a significant difference in students' reading achievement due to TELL methodology?
2. Is there a significant difference in students' writing achievement due to TELL methodology?
3. Is there a significant difference between TELL users' and nonusers' achievement in reading skills?
4. Is there a significant difference between TELL users' and nonusers' achievement in writing skills?
5. Does the use of TELL enhance users' level of motivation and interest towards language learning?

1.4 RESEARCH HYPOTHESES

On the basis of the research questions mentioned above, the following null hypotheses have been proposed:

1. There is no significant difference in students' reading achievement due to TELL methodology.
2. There is no significant difference in students' writing achievement due to TELL methodology.
3. There is no significant difference between TELL users' achievement in reading skills and that of nonusers.
4. There is no significant difference between TELL users' achievement in writing skills and that of nonusers.
5. TELL activities have no effect on users' level of motivation and interest.
1.5 SIGNIFICANCE OF THE STUDY

The present study (the first of its kind to be conducted in any engineering college affiliated to Punjab Technical University, Jalandhar) investigates the effective use of technology for undergraduate students and identifies some factors that contribute towards the reading and writing proficiency of the students. The study aims to benefit students, teachers, colleges and course designers of the university in different ways. One of the major benefits of the study is to provide various technological tools that may prove effective; as Lee stated that the reasons for using computer technology in second language instruction, include the fact that the computer and its attached language learning programs can (a) prove practices for students through the experiential learning, (b) offer students more the learning motivation, (c) enhance student achievement, (d) increase authentic materials for study, (e) encourage greater interaction between teachers and students and students and peers, (f) emphasize the individual needs, (g) regard independence from a single source of information and (h) enlarge global understanding.

Research and practice suggest that, appropriately implemented, technology enhanced language learning can contribute significantly to:

Experiential Learning

The World Wide Web makes it possible for students to tackle a huge amount of human experience. In such a way, they can learn by doing things themselves. They become the creator not just receivers of knowledge. As the way information is presented is not linear, users develop thinking skills and choose what to explore.

Motivation

Computers are most popular among students either because they are associated with fun and games or because they are considered to be fashionable. Student motivation is therefore increased, especially whenever a variety of activities are offered making them feel more independent.

Enhanced Student Achievement

TELL can help pupils strengthen their linguistic skills by positively affecting their learning attitude and by helping them build self-instruction strategies and promote their self-confidence.
Authentic Materials for Study

All students can use various resources of authentic reading materials either at school or from the home. Those materials can be accessed 24 hours a day at a relatively low cost.

Greater Interaction

Random access to Web pages breaks the linear flow of instruction. By sending e-mail and joining newsgroups, EFL students can communicate with people they have never met. They can also interact with their own classmates. Furthermore, some Internet activities give students positive and negative feedback by automatically correcting their on-line exercises.

Individualization

Shy or inhibited students can be greatly benefited by individualized, student-centered collaborative learning. High fliers can also realize their full potential without preventing their peers from working at their own pace.

Independence from a Single Source of Information

Although students can still use their books, they are given the chance to escape from canned knowledge and discover thousands of information sources. As a result, their education fulfills the need for interdisciplinary learning in a multicultural world.

Global Understanding

A foreign language is studied in a cultural context. In a world where the use of the Internet becomes more and more widespread, an English language teacher’s duty is to facilitate students’ access to the web and make them feel citizens of a global classroom, practicing communication on a global level.

Teachers can use various tools to design activities, to teach their students in a systematic way. Moreover teachers will realize better the importance of motivation in the process of developing reading and writing skills using the technology.

The researcher may come up with findings on how effectively the students of an engineering college use the tools under discussion to achieve the required proficiency level without boredom and language learning anxiety. Moreover, these findings may prove to be fruitful in redesigning the communication skills curriculum of the engineering students.
These findings may further act as a catalyst for the use of technology in ELT in India where technology for academic purposes is rarely used.

In the history of education, few topics have sparked such public debates as the use of technology in language learning and teaching. For example, Selami Aydin states in one of his articles that the problems of internet use include computer unavailability, lack of internet accessibility and training, computer anxiety, computer unfamiliarity of both teachers and students and some financial obligations. Lee classified the barriers that inhibit the practice of TELL in the following common categories (a) financial barriers, (b) availability of computer hardware and software, (c) technical and theoretical knowledge, and (d) acceptance of the technology. A language teacher generally considers the following barriers to the use of TELL:

**Technical Issues**

When the network traffic stalls due to many users or some other network glitches, it may take time to access information or browse the Internet. Most students may feel discouraged if they have to wait long for web sites to appear. English teachers may also feel frustrated if they are not computer literate to debug computer or Internet-related problems in web-enhanced language classes. One of the possible solutions is that the computer center of universities can offer some training programs or schools reimburse tuition fee for English teachers who attend computer courses or seminars given by professional institutes.

**Digital Skepticism**

Most language teachers in India are prone to technophobia because of lack of experience with computers. In addition, not all English teachers praise the merits of technology in the digital classrooms. Peterson highlighted a number of negative impacts of computers on education. Some of the doubts are:

1. information overload can lead to techno-stress;
2. computer-mediated synchronous communication has generated more text with minimal interaction;
3. learners' disappointment due to a lack of immediate feedback;
4. without enough technological training for English teachers, teaching with TELL simply results in learner apathy, disorientation and abuse.
Time-Consuming

Most language teachers who have used self-made, web-based language learning materials in their instruction will agree that it is quite time-consuming to design, edit and modify digital learning materials. Therefore, instructors may resist using Internet-based activities or projects that require substantially more preparation time (Lee). If institutes that teachers are working for don't offer funds as an incentive to support their English teachers, some may feel that it is not worthwhile to spend so much time designing and updating web-based learning materials. A rule of thumb to estimate how much time one has to spend in developing one-hour online materials is multiple three times. That is, it may take you as many as three hours to prepare a one-hour online material.

The researcher is confident that the research findings will address the above discussed issues raised by many critics. This study will also show how a language teacher can integrate technology into language teaching in engineering colleges by overcoming all the obstacles and can emerge as a techno-savvy teacher for the students.

1.6 DEFINITION OF KEY TERMS

**Blended Learning:** Blended learning refers to a language course which combines a face-to-face (F2F) classroom component with an appropriate use of technology like Internet, CD-ROMs, and Interactive Whiteboard etc.

**Blogs:** A blog (short for weblog) is a frequently updated website that often resembles an online journal. It's so easy to create and update a blog - it requires only basic access to the Internet and a minimum of technical know-how. Because of this, it is one of the easiest ways to publish student writing on the WWW. It's almost as easy as sending an e-mail. Entries are posted chronologically, with the most recent at the top and provide commentary or news on a particular subject. A typical blog combines text, images and links to other blogs, web pages and other media related to its topic.

**Constructivism:** The theory of constructivism posits that students are not passive recipients of knowledge. Instead, they are active participants in the construction of new knowledge that is idiosyncratic and derived from the learner's prior experience and need to create equilibrium (i.e., find meaning or fill in an information gap) when faced with a new situation. In this theory, students take
responsibility for their learning and the teacher is a facilitator rather than a purveyor of knowledge.

**RSS:** The term RSS stands for Really Simple Syndication. It is a method by which web content can be easily and quickly distributed when it is changed or newly entered into a web site or web log. Most blogs automatically include an RSS feed. This feed automatically sends out formatted releases of new posts that are received by those who use RSS news readers and subscribe to that particular feed.

**Web 2.0:** The term Web 2.0 is used for advanced Internet technology and applications including blogs, wikis, RSS and social bookmarking. It is associated with web applications that facilitate interactive information sharing, interoperability, user-centered design and collaboration on the World Wide Web.

**WebQuest:** A WebQuest is an inquiry-oriented activity in which most or all of the information used by learners is drawn from the Web. WebQuests are designed to use learners' time well, to focus on using information rather than on looking for it and to support learners' thinking at the levels of analysis, synthesis and evaluation.

**Wikis:** A wiki is a website that allows visitors to add, remove and edit content. It is a collaborative technological tool for organizing and synthesizing information on Web sites. Wikis allow for linking among any number of pages. As the content is editable there is a history of changes to enable users to revert back to earlier versions. This ease of interaction and operation makes a wiki an effective tool for mass collaborative authoring. The most famous example of a wiki is Wikipedia, an online encyclopedia written by its readers.

### 1.7 LIMITATIONS OF THE STUDY

This study, just like many other studies, does have few limitations.

The study is only concerned with the reading and the writing ability of the subjects. The question whether TELL had an impact on other language skills, remained unanswered. Furthermore, the learners' age, gender, social classes, cultural beliefs and religious attitudes, as well as the differences between circumstances of the various classes together with potential obstacles or advantages they may come across, were certainly ignored.

Basically, the current study has covered only under-graduate engineering students. Thus, it is not apparent that what the impact of technology enhanced language activities would be on the young learners and post-graduates.
The primary limitation of this study is the self-reported nature of the data collected. Because the researcher is the teacher of the class, it is possible that the students might have over-reported on the effectiveness of the program. One control for this limitation was the anonymous nature of the questionnaires. She also indicated to the class that she wanted to see how the class as a whole, not individual students, felt about the programme.

The study was conducted within a relatively short period of time; this may have negatively skewed the results obtained. The fact that the study was done with the students of an engineering college in India may also limit the extent to which the results can be generalized to other populations.

These technologies vary a great deal in their capacity, interface and accessibility. It is thus misleading to think that the effects of blogs and wikis are the same as those of the online chat rooms just because they are all called “technology.”

Since most information and communication technologies (ICTs) can be used in a variety of ways, some more effective than others, it is inappropriate to overgeneralize the effectiveness (or lack thereof) of one way of using the technology to the technology itself.