TECHNOLOGY ENHANCED LANGUAGE LEARNING IN INDIAN EDUCATION SCENARIO: REFLECTING UPON ROLE OF ICT AND MULTIMEDIA ON LEARNING ENGLISH AS A SECOND LANGUAGE

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Abstract

It is no denying the fact that one's repertory and proficiency of syntactics and semantics is the index of one's personality and is the key to one's success in life. Language learning is an indispensable part of school curriculum. The 21st century better known as the Information Age is witnessing a paradigm shift in pedagogical practices. ICT and multimedia have touched every facet of life and education is also no exception to this as these are being effectively employed in transacting the curriculum to the pupils by means of smart classes, virtual classes, online learning etc. Although Technology enhanced language learning (TELL) is in vogue in the current scenario yet it is in a nascent phase in India. The present paper highlights the role of TELL on learning English as a second language (ESL) besides throwing light on the pace of its development and use in India.

Keywords: TELL, ESL, ICT, Multimedia, Information Age.

Introduction:

TELL (Technology enhanced language learning)

The word **TELL** is an acronym for ***Technology-enhanced language learning*** and deals with the impact of technology on teaching and learning a second language also called the L2. Technology-enhanced language learning refers to the use of the computer as a technological innovation to display multimedia as a means of complementing teaching of language by language teachers. TELL is not a teaching method but an approach that can be used alongside a teaching method to help teach. TELL can be used alongside textbooks for a much more in depth learning experience. TELL turns the classroom into a student-centered environment.

Tracing the historical background

TELL was first known as ***CAI - Computer Assisted Instruction*** and/or ***CALL- Computer Assisted Language Learning*** during the early 1970s. **Levy** (1997) defines **CALL** as *"the search for and study of applications of the computer in language teaching and learning."* It

emphasizes learning and not teaching. CALL encompasses tools that facilitate language learning process. It is meant to supplement face-to-face language instruction and not supplant it. CALL dates back to the 1960s, when it was first introduced on university mainframe computers. The **PLATO** project, initiated at the University of Illinois in 1960, is an important landmark in the early development of CALL (Marty 1981). The history of CALL suggests that computer can be made use of in language teaching in different ways viz. as a tutor which offers language drills or skill practice, a stimulus for discussion and interaction or a tool for writing and research. With the advent of the Internet, it can also be a medium of global communication and a source of limitless authentic materials.
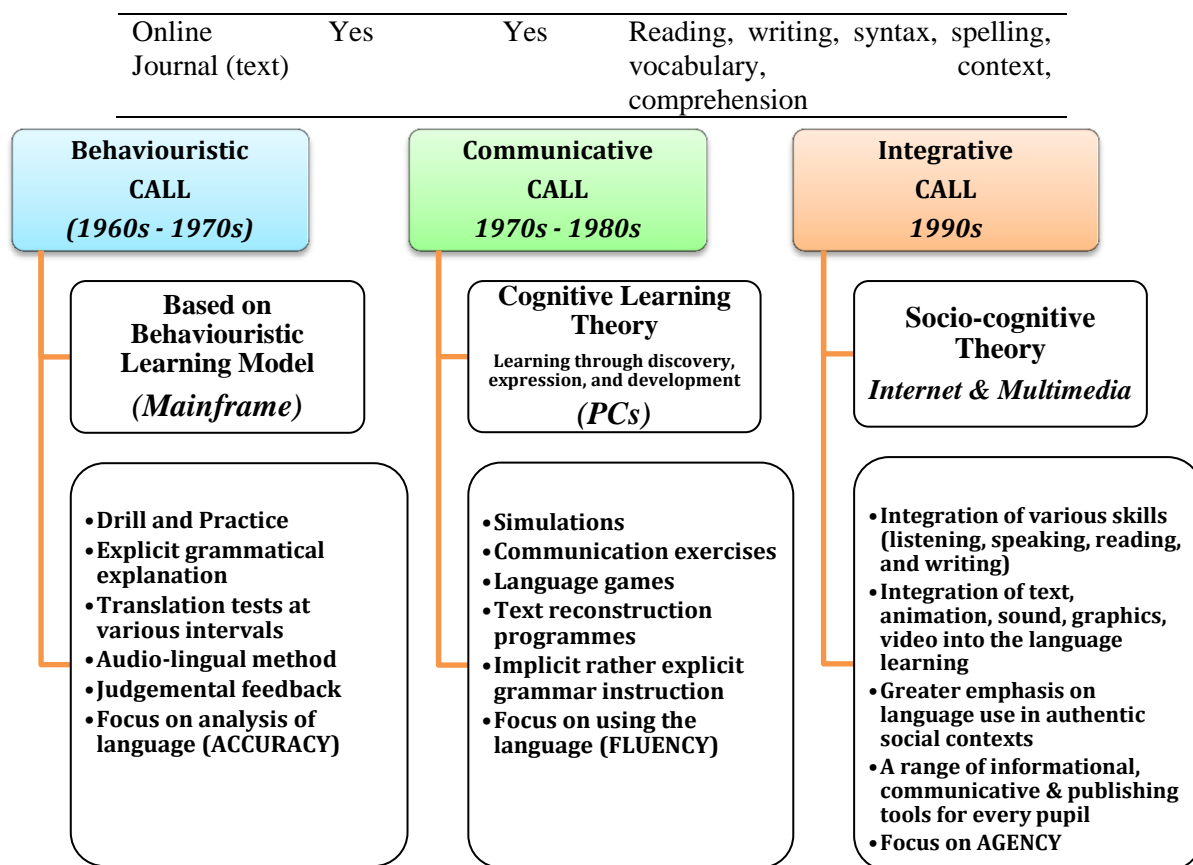
The term **CALI** (Computer-assisted language instruction) was in use before CALL, reflecting its origins as a subset of the general term CAI (computer-assisted instruction). CALI fell out of favor among language teachers, however, as it appeared to imply a teacher-centered approach (instructional) whereas language teachers are more inclined to prefer a student-centered approach, focusing on learning rather than instruction. CALL began to replace CALI in the early 1980s (Davies & Higgins 1982: p. 3). The current philosophy of CALL puts a strong emphasis on student-centered materials that allow learners to work on their own. Such materials may be structured or unstructured, but they normally embody two important features: *interactive learning* and *individualized learning*. CALL is essentially a tool that helps teachers facilitate the language learning process. It can be used to reinforce what has already been learned in the classroom or as a remedial tool to help learners who require additional support.

An alternative term, **TELL** (Technology-enhanced language learning) also emerged around the early 1990s: e.g. the TELL Consortium project, University of Hull.

Warschauer (1996) and **Warschauer & Healey** (1998) identified three historical phases of CALL, classified according to their underlying pedagogical and methodological approaches as shown in the figure below.

Table 1: Activities Included In *Tell*

Type of Activity	Individual?	Group?	Areas of language learning
Dialogue (Audio)	No	Yes	Pronunciation, vocabulary, context
Audio recording playback (Audio)	Yes	Yes	Pronunciation, vocabulary, context, comprehension
Film (video)	Yes	Yes	Non-verbal communication, pronunciation, context, vocabulary

Online Journal (text)	Yes	Yes	Reading, writing, syntax, spelling, vocabulary, context, comprehension

Behaviouristic CALL *(1960s - 1970s)*

Based on Behaviouristic Learning Model *(Mainframe)*

- Drill and Practice
- Explicit grammatical explanation
- Translation tests at various intervals
- Audio-lingual method
- Judgemental feedback
- Focus on analysis of language (ACCURACY)

Communicative CALL *1970s - 1980s*

Cognitive Learning Theory
Learning through discovery, expression, and development *(PCs)*

- Simulations
- Communication exercises
- Language games
- Text reconstruction programmes
- Implicit rather explicit grammar instruction
- Focus on using the language (FLUENCY)

Integrative CALL *1990s*

Socio-cognitive Theory
Internet & Multimedia

- Integration of various skills (listening, speaking, reading, and writing)
- Integration of text, animation, sound, graphics, video into the language learning
- Greater emphasis on language use in authentic social contexts
- A range of informational, communicative & publishing tools for every pupil
- Focus on AGENCY

FIGURE 1: HISTORY OF 'CALL' (WARSCHAUER, 1996)

In a later publication Warschauer changed the name of the first phase of CALL from *Behavioristic CALL* to *Structural CALL* and also revised the dates of the three phases (Warschauer, 2000):

- Structural CALL: 1970s to 1980s
- Communicative CALL: 1980s to 1990s
- Integrative CALL: 2000 onwards

A glimpse of recent innovations:

MALL (acronym for Mobile-assisted language learning) is the use of handheld computers or cell phones to assist in language learning. MALL is a subset of both Mobile Learning (m-learning) and computer-assisted language learning (CALL). MALL has evolved to support students' language learning with the increased use of mobile technologies such as mobile phones (cellphones), MP3 and MP4 players, PDAs and devices such as the iPhone. With MALL, students are able to access language learning materials and to communicate with their teachers and peers at anytime, anywhere.

FIGURE 2: SHOWING MOBILE ASSISTED LANGUAGE LEARNING (MALL)

RALL (acronym for Robot assisted language learning) is the use of robots to assist in language learning. Robots not only encompass features of CALL/MALL but are also capable of independent movements, voice/visual recognition, environmental interactions, non-verbal communication viz. gestures, facial expressions and actions. RALL can create a useful collaboration with pupils to improve and enhance their speaking and listening abilities and provoke learner's interest and motivation as robots encompass such features as anthropomorphism, flexibility, mobility, repeatability, adaptability, intelligence, sensing etc. Research and development of RALL started around 2004, mainly in countries like Japan, Korea and Taiwan where English is taught as a foreign language. Japan's ATR research international institute conducted research on student motivation during recess in elementary schools with ROBOVIE, a robot that remembers around 300 English sentences, simple everyday expressions and recognizes 50 words (Kanda, Hirano, Eaton & Ishiguro, 2004). In March 2004, Korean developer Yujin Robot announced a home robot IROBI, loaded with services such as reading English, photo books and English chanting (Han, Jo, Park & Kim, 2005). In Taiwan, *You, Shen, Chang, Liu and Chen* (2006) applied ROBOSAPIEN, an Infrared remote controllable toy-like robot manufactured by Wow-Wee Toys, to an English classroom with five instruction models.
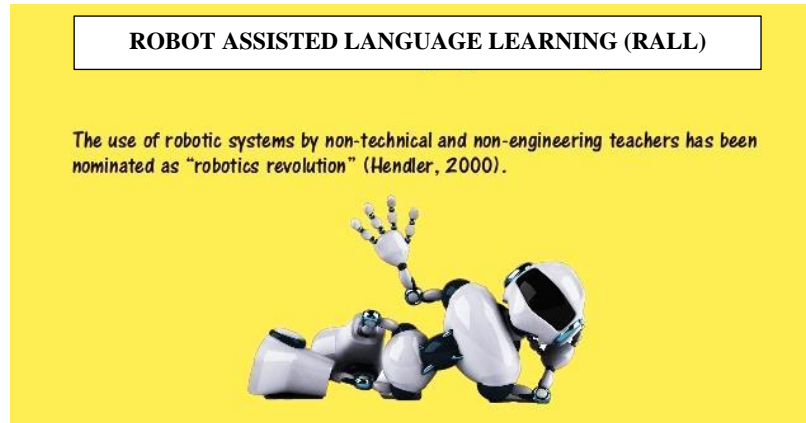
FIGURE 3: SHOWING ROBOT ASSISTED LANGUAGE LEARNING (RALL)

DISQUISITION:

Philosophical Rationale

In parlance of educational philosophy, three terms are encountered viz. Metaphysics, Philosophy and Axiology. *Metaphysics* is the branch of philosophy responsible for the study of existence. It is the foundation of a worldview. It answers the question "*What is real*?" It encompasses everything that exists, as well as the nature of existence itself. It says whether the world is real, or merely an illusion. It is a fundamental view of the world around us. Without an explanation or an interpretation of the world around us, we would be helpless to deal with reality. Metaphysics helps in the formulation of aims of education and curriculum is the means of realization of those aims. Epistemology is the study of our method of acquiring knowledge. It answers the question, *"How do we know?"* It is concerned with how our minds are related to reality, and whether these relationships are valid or invalid. Flaws in epistemology will make it harder to accomplish anything. Methods of teaching and pedagogy are undoubtedly related to Epistemology. As per epistemology of *Nyaya Darshan,* there are four means (*Pramanas*) of acquiring knowledge as under:

- *Perception (Pratyaksa)- Visual, Aural, Gustatory, Tactile, Olfactory*
- *Inference (Anumana)*
- *Comparison (Upmana)*
- *Verbal Testimony (Shabd Pramanikta)*

Out of these four, two pramanas viz. Perception and Verbal testimony have a profound bearing on teaching-learning process. Psychological research has shown that verbal information is in fact better remembered when accompanied by a visual image.

Digital content, animations and videos make lessons rich and interesting. Students understand and grasp the concepts easily.

Psychological Rationale

Technology-enhanced multimedia instruction benefits foreign language vocabulary acquisition because students receive information via multiple channels and then can recall information better. Dual coding theory states that when information is presented through visual and auditory channels, it facilitates retention (Pavio, 1986). *'Combining pictures, mental imagery, and verbal elaboration could be an effective method in promoting understanding and learning from text by students ranging from grade school to university level'* (Pavio, 1991). Technology furnishes opportunities for interaction, allows for immediate feedback, increases learner autonomy, simulates real-life situations and experiences through video, audio, and graphics (Chun & Brandl, 1992; Legenhausen & Wolff, 1990). Integration of images and sounds together with text enhances vocabulary acquisition (Chun & Payne, 2004; Chun & Plass, 1996). Research showed that the combination of textual and visual information is more effective in facilitating vocabulary acquisition than definitions of foreign language words alone (Akbulut, 2007; Jones & Plass, 2002; Nikolova, 2002). Liu (1994) found that technology offers tools and opportunities to enhance vocabulary acquisition. The use of visuals can enhance language teaching as they help teachers bring the real world into the classroom, thereby making learning more meaningful and more exciting (Brinton, 2000). Research shows that low verbal ability students especially benefit from visual aids and input (Peek, 1993).

Acquisition and Learning

According to **Stephen Krashen** (1982), the *acquisition* of a language is a **natural** process; whereas *learning* a language is a **conscious** one. In the former, the student needs to partake in natural communicative situations. In the latter, error correction is present, as is the study of grammatical rules isolated from natural language. English not being our Mother tongue therefore requires learning. A language teaches us four skills viz. listening, speaking, reading and writing. Add to this, any verbal encompasses four components:

1) *Phonetics* (structure and sequence of speech sounds, pronunciation)
2) *Syntactics* (grammar)
3) *Semantics* (vocabulary)
4) *Pragmatics* (rules for appropriate and effective communication)

As regards teaching of English as a second language, various methods have been employed viz. translation method, rote memorization of grammatical rules and vocabulary, direct method etc. however in the wake of paradigm shifts in pedagogy of English language these methods have become obsolete. With the advent of internet and multimedia, new methods are

being evolved and in vogue to make the learners of English language proficient in the use of pronunciation, grammar and vocabulary, TELL being one of them. In fact, the pedagogical finesse encompasses a smart blend of conventional and innovative techniques.

Multisensory Instruction

Multisensory Instruction is that type of instruction in which sensory learning experiences are derived from more than one sense organ. This concept was introduced by philosophers like Francis Bacon, Mulcaster and Comenius and their concept was given a solid Psychological base by Edgar Dale, Bruner, Charles etc. Interest in the Role of SENSES in Learning was already there in Educational circles when instructional media began their ascendency. Research findings of **Cobun** (1968) indicate that RETENTION of what is LEARNED is related to SENSE EXPERIENCE. Multisensory learning is therefore a *psychologically* and *philosophically* valid concept that aims at making learning:
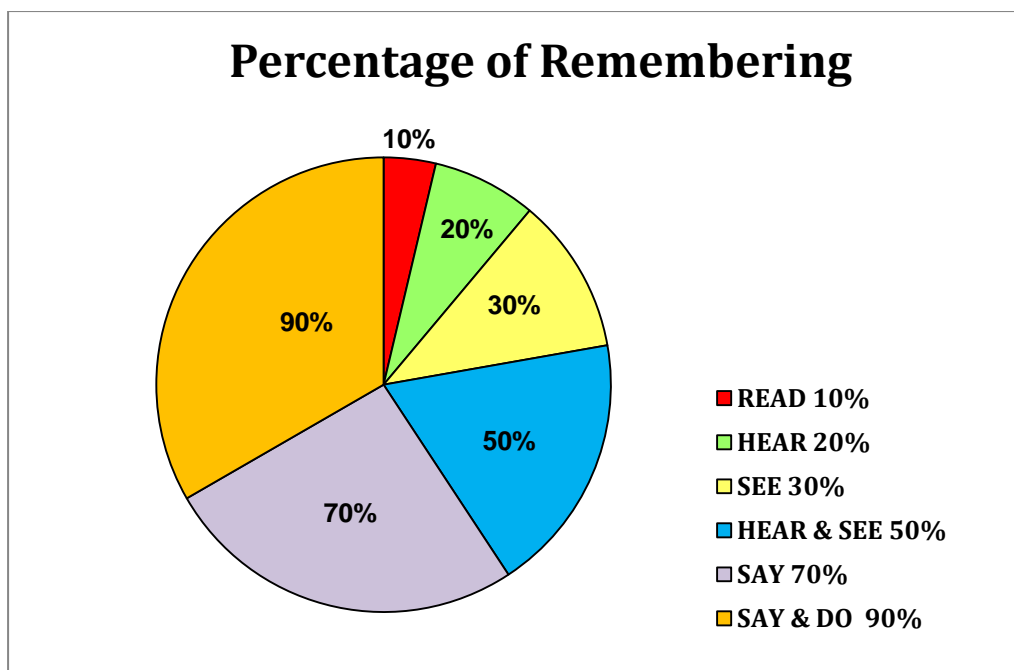
- ❖ Meaningful
- ❖ Speedy
- ❖ Enduring
- ❖ Interesting

Role of Senses in Learning

- Taste 1%
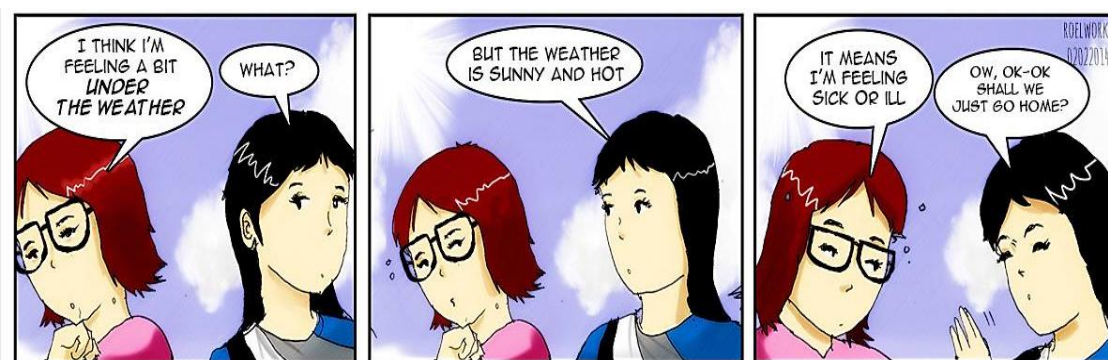- Touch 1.5%
- Smell 3.5%
- Hearing 11%
- Sight 83%
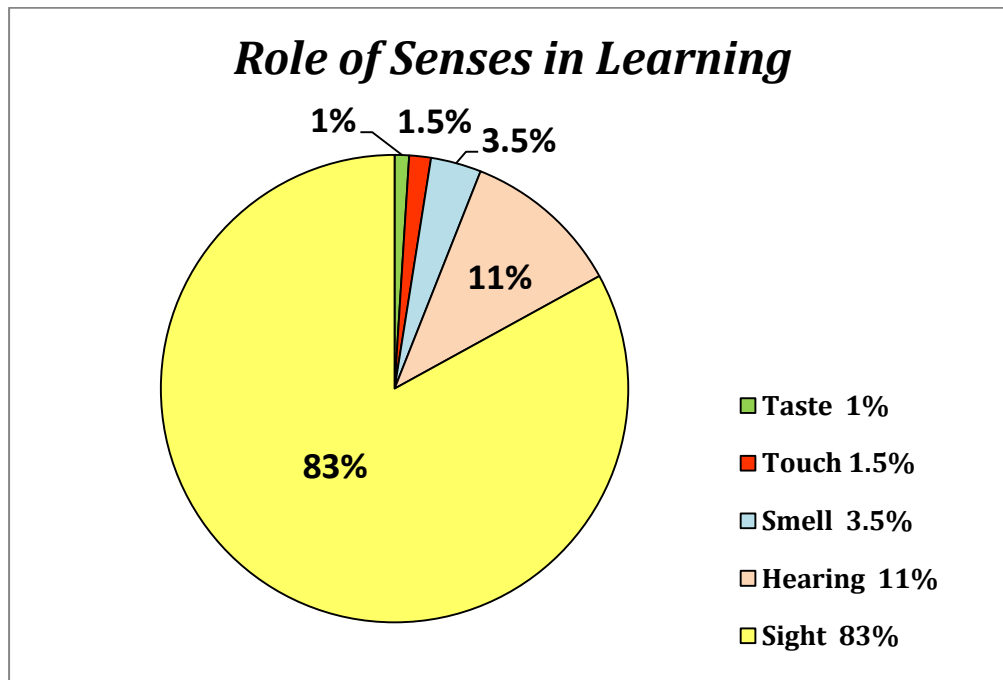
FIGURE 4: PIE CHART HIGHLIGHTING ROLE OF SENSES IN LEARNING (COBUN)

Observation and research by **Cobun** tended to show (holding time as nearly constant as possible) that people generally remember what is shown in the pie-chart below.

FIGURE 5: PIE CHART SHOWING PERCENTAGE OF REMEMBERING (COBUN)

(Idioms based on picture-conversation) (Idiom – Under the weather)

According to Clark and Lyons (2004), two different types of memories are involved in the process of learning viz. working memory and long-term memory. Furthermore, the working memory too has two sub-components; one specialized in visual input and the other one in auditory input. For example, if a graphic is explained by words presented in audio, learning the new information is better than if the words are presented in text (Clark and Lyons, 2004). This pertains to multisensory learning. When the visual and phonetic inputs are perceived simultaneously they are organized to form a cohesive idea to be finally integrated with active prior knowledge from long term memory. The two memories work together in complementary ways, to form what is called an updated mental model that will be stored in long-term memory, where it lasts indefinitely (Clark and Lyons, 2004).

Sociological Rationale

Vygotsky's Socio-cultural theory states that developmental processes take place through participation in cultural, linguistic, and historically formed settings viz. schooling and peer group interactions (Vygotsky, 1986). The crux of the theory is *Zone of Proximal Development* (ZPD), which is defined as a distance between what a learner is able to do independently and what s/he is able to do with a social support. Therefore, learning happens through interactions between an "expert" (teacher) and a "novice" (student), where an "expert" provides guidance and assistance to a "novice."

Kern (2006) emphasized the importance of a pedagogical approach to technology enhanced multimedia instruction by stating that *"technology-based language teaching is not a method but is integrated into various pedagogical approaches"* (p. 200). Technology allows for multimedia instruction and a multisensory learning environment. Research has shown that using technology-enhanced multimedia instruction in the classroom helps to tailor instruction to students with different abilities (Wu & Zhang, 2010) and facilitates quick sharing and building of knowledge within the participatory environment (Asselin & Moayeri, 2011). Technology features viz. interactivity, capacity, flexibility, speed, novelty and numerous automatic functions promote learning and creativity amongst students (Allen, 2003; Loveless, 2002). Visual aids, when integrated into the lesson plan through media, attract students´ attention to the topic presented in the class, enhance and facilitate comprehension of grammar and language, increase students' motivation as well as help students memorize the new vocabulary and structures thereby expanding their syntactic and semantic repertory. To render the acquisition of language more meaningful for the students, teachers must bring the real world into the classroom.

Second Language Acquisition (SLA) research perceives students as active learners capable of creating their own ideas that they can later use to make sense of their own learning (Ruschoff & Ritter, 2001). SLA research implies that language acquisition should be achieved by having plenty of opportunities for communicative language activities that allow for the negotiation of meaning and exchange of information between speakers. Harper, Squires, and Mcdougall (1996) stated that learning should be viewed as an active and dynamic process and knowledge should be viewed as something that students can construct, not something that can be passively received. Teachers often focus on following the beaten track, teaching static knowledge where students are required to consume "packed in boxes" pieces of information rather than produce and create knowledge themselves (Sawyer, 2006). **Ruschoff** and **Ritter** (2001) stated "*traditional skills of information gathering and storing as*

well as the mere learning of facts will no longer be sufficient in order to live, learn, and work… in the society of 2012." Research also shows that technology-enhanced multimedia instruction increases student motivation (Boehm, 2009; Torff & Tirotta, 2010), develops curiosity and makes learning experiences memorable (Allen, 2003). However, SLA research indicates that technology itself is neither effective nor ineffective in the classroom. The pedagogy, that stands behind the use of technology and the way teachers can make use of it, is what makes technology effective (Armstrong & Yetter-Vassot, 1994; Zhao & Frank 2003). It may be reiterated here that technological aids can only supplement teaching and learning, they cannot supplant the teacher in any way. What needs to be emphasized here is that a balance has to be struck between the conventional classroom practices and smart classroom practices. The employment of smart classroom practices must find way both in pedagogy and student learning.

Lam (2000) indicated that merely providing teachers with technology-enhanced multimedia resources is not enough. It is necessary to convince them of the benefits of using it in the classroom. Studies suggest that teachers' lack of knowledge and professional development to prepare them for the integration of technology into the curriculum (Akins, 1992; Lam, 2000; Winnans & Sardo Brown, 1992; Zammit, 1992), teachers' lack of confidence in their skills with technology (George & Camarata, 1996; Winnans & Sardo Brown, 1992; Zammit, 1992), their level of education and the amount of teaching experience (Moore & Carel, 1998) may be some of the factors that stand in the way of the effective implementation of technology-enhanced multimedia instruction. Research found that teachers who hold constructivist views on teaching were more willing to use technology enhanced multimedia in the classroom than teachers who did not hold such views (Becker, Ravitz, & Wong, 1999; Ertmer, 2005; Ertmer, Gopalakrishnan, & Ross, 2001). According to constructivist theory, learners are active participants in tasks in which they "construct" new knowledge derived from their prior experience. Learners also assume responsibility for their learning and the teacher is a facilitator rather than a purveyor of knowledge. Whole language theory embraces constructivism and postulates that language learning moves from the whole to the part, rather than building sub-skills to lead towards the higher abilities of comprehension, speaking, and writing. It also emphasizes that comprehending, speaking, reading, and writing skills are interrelated, reinforcing each other in complex ways. Language acquisition is, therefore, an active process in which the learner focuses on cues and meaning and makes intelligent guesses. *Computer-supported collaborative learning (CSCL)* uses instructional methods designed to encourage or require students to work together on learning tasks, allowing social

learning. Learning takes place through conversations about content and grounded interaction about problems and actions. Advocates of social learning claim that one of the best ways to learn something is to teach it to others. Social networks have been used to foster online learning communities around subjects as diverse as test preparation and language education. According to **Bandura's** *Self-efficacy theory*, individuals are likely to engage in activities to the extent they perceive themselves to be competent at those activities. *Self-efficacy* is defined as the belief in one's ability to achieve a goal or an outcome (Bandura, 1977, 1997). German philosopher, **Alexander von Humboldt** aptly remarks, *"A language cannot be taught. One can only create conditions for learning to take place."* By employing multimedia, one certainly creates such conditions. *"Videos, like other theme-based materials, are effective springboards for other content-based classroom activities. They provide background information and proper stimuli for subsequent reading, writing, speaking and listening activities."* (Stoller, 1993)

Indian scenario

India is a multilingual nation. Although the eighth schedule of Indian Constitution has recognized 22 languages yet two languages have a prime significance viz. Hindi and English. The Constitution of India designates the official language of the Government of India as Hindi written in the Devanagari script as well as English. English being a *lingua franca* is taught as a second language in India. In fact, English is the prime medium of Instruction in convent schools, majority of universities and some acme government schools.

1. **Pre-service teacher-education:**

The teacher-education programmes in India are being run on the traditional lines without any substantial change or modification to keep pace with the changing realities. The '***SKILL'*** development aspect of the programme is the most neglected one. As per two-year B.Ed. curriculum released by National Council of Educational Research and Training, the Curriculum components have been visualized in three clusters viz. *Groups A, B and C*, ending with a 'Final Reporting and Presentation'. Under *Group C (*Section I: Experiences for Teacher Enrichment) use of ICT for Effective Learning has been emphasized. This includes awareness and effective use of ICT as a tool for learning, appreciating the use of audio, audio-visual aids and ICT (Internet and Computer Technology); develop and use teaching aids in the classroom both print and audiovisual material, and ***ICT (Pedagogy of language viz. English, Urdu, Sanskrit)***; ICT applications (Pedagogy of Mathematics) Audio-visual aids, CD-ROM, multimedia, internet (Pedagogy of Social sciences). As regards teacher-education institutions, it is a matter of regret that only a few emphasize the practical aspect in

addition to the theoretical aspect. Most of the institutions do not even take pains to acquaint the pupil-teachers with the effective as well as efficient use of ICT. And a few merely make the students familiar with the basics of ICT only on a half-baked theoretical basis. *It is a matter of irony that most of the teacher-educators teaching pedagogy of language(s) theoretically emphasize the use of audio-visual aids but themselves never use them for their own teaching sessions.*

2. **In-service teaching:**

A majority of language teachers follow the beaten track in that they rely only on theoretical part thus totally neglecting the practical aspect. They are reluctant to use audio-visual aids in their classroom. They lack the true spirit of philosophy i.e. quest for knowledge. School management and authorities also have a lackadaisical attitude in that they are satisfied with *status quo*. Some studies reported that there is a lack of professional development to prepare teachers for the integration of technology into the curriculum (Akins, 1992; Winnans & Sardo Brown, 1992; Zammit, 1992).

Barriers

Some impediments may be listed as under:

- ❖ Adherence to beaten track and aversion to innovation
- ❖ Aversion of in-service language teachers to integrate technology with curriculum.
- ❖ Teacher-educators teaching pedagogy of language(s) themselves not well proficient in the use of ICT based skills.
- ❖ Some language teacher-educators also lack interest in ICT integration and need motivation.
- ❖ Practical use of ICT based skills not being made. Emphasis on theoretical part only.
- ❖ Majority of the pupil-teachers who opt for pedagogy of English language have either half-baked or poor knowledge of ICT.
- ❖ Lackadaisical attitude / vested interests of school management and authorities.
- ❖ Poor infrastructure, non-availability of electricity and the required technology.
- ❖ Teachers / teacher-educators who fail to realize the philosophical and/or psychological rationale(s) as discussed above.
- ❖ Technological advancement in a nascent phase
- ❖ Lack of technological awareness

Glimmer of hope:

The paradigm shifts in Pedagogy of English as second language and advent of ICT have ushered in a new era of language learning. In India too, most of the Convent and English

medium schools and some reputed government schools (KVS) have stated adopting the concept of TELL. Add to this, a majority of esteemed text book publishers in India viz. *Pearson India, S.Chand, Madhuban, Goyal brothers, Frank brothers, Appu series* etc. are also embracing this very concept and have blazed a trail in this regard by means of furnishing interactive CDs (comprising multimedia lessons, quizzes, evaluation exercises, audio lingual text material, slideshows) along with English Grammar and Literature books. However, the concept of TELL in India is in a nascent phase and has a long way to go as regards its generalization.

(Idioms – Multimedia series)

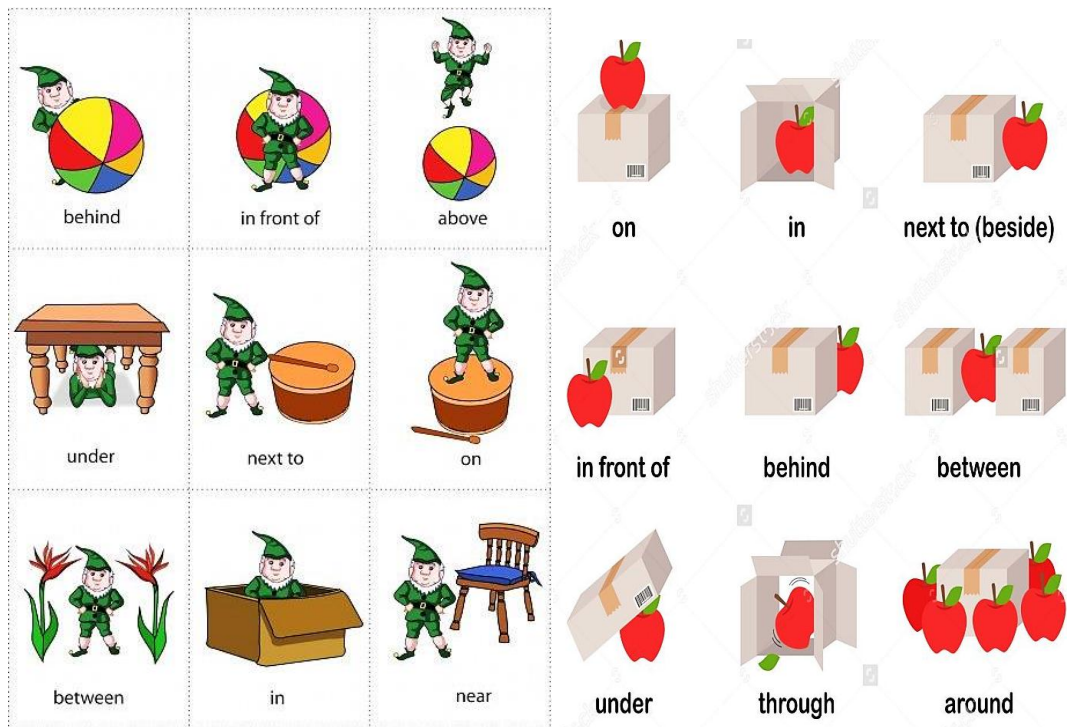*(Idiom – Go the extra mile)*

(Idiom – Let's call it a day)

(Idiom – To be caught red-handed)

FIGURE 6: MULTIMEDIA APPROACH IN ENGLISH LANGUAGE LEARNING

(Courtesy: Appu Series)

FIGURE 7: PREPOSITIONS (VISUAL PERCEPTION + ORAL & WRITTEN WORD)

FIGURE 8: A GLIMPSE OF SOME BOOKS WITH INTERACTIVE CDs

| **Virtual classroom** | **Smart classroom (India)** |

FIGURE 9: A GLIMPSE OF VIRTUAL & SMART CLASSROOMS

Conclusion:

What light is to darkness, language is to the human beings. Human beings are the only creatures on Earth who are endowed with the unique and precious gift of a well-defined structured language. Language has been the basis of existence of human civilization and transference of cultural heritage from generation to generation. Verbal language (oral and verbal) is the basis of human communication. **Wilkins** rightly says, "*Without grammar very little can be conveyed….but without vocabulary nothing can be conveyed*" (p.111, quotes in Lewis, 2000).In a developing country like India, a constant touch with the outside world is indispensable to keep abreast of the latest trends and developments in the fields of agriculture, medicine, industry, telecommunications, transport and basic research systems. Without the adequate knowledge of and proficiency in English language, we cannot train and expect our prospective engineers, doctors, technocrats and researchers to keep pace with current scenario in their respective fields. In consonance with the essence of the philosophy of Pragmatism and the changing needs of the society, teacher-educators and in-service teachers have to keep themselves abreast of the knowledge aspect and the effective as well as efficient utilization of ICT in English language learning. ICTs also provide learners with powerful new tools to represent their knowledge with text, images, graphics, and video. In order to introduce and understand the need of ICT in educational institutions, teachers or students undergoing teacher education must first comprehend and be at ease with ICT. They must be given opportunities for acquisition of new knowledge. This can be made possible by promoting ICT-based training programs introduced in their curriculum.

The following can help in this regard:

- Orientation programmes
- Refresher courses

- Seminars
- Conferences
- Guest lectures
- Workshops

The concept of TELL in India is in a nascent phase and has a long way to go as regards its generalization. A majority of government schools are still either unaware or devoid of this concept reasons being manifold. It is the onus of Government to ensure its generalization and follow up at all levels of school education, recruitment of proficient English language teachers, training of pre-Service and in-service teachers.

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