Papers Presented in the All-India Conference on Multimedia Enhanced Language Teaching – MELT 2009

Editors

L. Ramamoorthy, Ph.D.
J.R. Nirmala, Ph.D.

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Conducted jointly by

R.M.K. College of Engineering and Technology
Puduvoyal- 601 206
Tamilnadu, India

and

Central Institute of Indian Languages
Mysore 570 006
Karnataka, India

Editors

L. Ramamoorthy, Ph.D.
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Foreword

As human beings, we may be biologically programmed to acquire languages we are exposed to but this happens most naturally to us only as children when others around also seem eager and joyful to assist us. As we grow up to become less child-like, we are made conscious of our psychological and societal needs - cognitive, instrumental or integrative - and our motivation levels, often governed by pragmatic concerns of communication, intervene in our performance to limit our competence to functional levels. It is, then, that the matter of non-acquisition of languages becomes as much of an issue of concern as their acquisition and, therefore, to move forward in our quest for learning we need technological and other assistance to revitalize that innate ability.

We, at the Central Institute of Indian Languages, make it our goal to devise ways and means to learn Indian languages as easily as possible. We want to make learning Indian languages a joyful experience. And we also do want to make it possible to learn and use Indian languages within a short duration. This Conference, "Multimedia Enhanced Language Teaching"- MELT-09, is yet another step to reach this goal. It is my earnest hope that the discussions and ideas presented in this volume will help materials producers to exploit multimedia for the teaching and learning of Indian languages including English, as well as other subjects with their own register of language terms with and without translation.

I congratulate all the participants, organizers and supporters of the Conference. I feel the proceedings published now will help stimulate our thinking further and lead us to redouble our endeavour in enriching the availability of language learning materials in various multimedia formats.

Rajesh Sachdeva, Ph.D.
Director-in-charge
Central Institute of Indian Languages
Ministry of Human Resource Development
Government of India
Mysore 570006
Karnataka, India

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Chairman's Message

I am very happy to note that the proceedings of the National Conference on "Multimedia Enhanced Language Teaching"-MELT-09 conducted jointly by R.M.K. College of Engineering and Technology and Central Institute of Indian Languages, Mysore, is now published in Language in India www.languageinindia.com.

The papers presented in the Conference will enable the teachers of languages as well as other subjects to be in touch with the latest trends in the field of Language Teaching and ultimately Science and Technology.

I congratulate the team which worked hard to make the conference a great success.

R. S. Munirathinam
Founder Chairman, RMKCET

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Editors' Note

Let us begin with some basic facts about the National Conference on "Multimedia Enhanced Language Teaching" - MELT-09.

1. The Conference was a joint effort between a leading privately-operated innovative institution of engineering and technology, and a great public institution, leader in research, teaching and materials production relating to Indian languages: R.M.K. College of Engineering and Technology and Central Institute of Indian Languages.

2. The Conference attracted talents from all over the country and also from Japan.

3. 38 insightful papers written by 50 scholars were presented in the Conference. It was good to see that a lot of collaboration went into choosing, designing and writing articles on a variety of topics for the Conference. This, indeed, is good news for the disciplines represented here, since most linguists in India until the recent past preferred to work alone and publish their research. Collaboration, both institutional and individual, brings the best in all of us, and leads to advances in our understanding and application.

4. Papers dealt with wide-ranging but relevant themes relating to the use of multimedia in teaching in general, and language teaching in particular. With several hundreds of languages and four different language families, India represents possibly the pinnacle of linguistic and ethnic diversity in humanity, and is still a great working pluralistic society. That Diversity is not a burden, but a great asset, is continuously recognized and tolerated throughout Indian history, more so since the beginning of our Independence Struggle. So, naturally, the proceedings of a conference that dealt with the teaching and learning of Indian languages and other topics attracted a wide variety, all forming a cohesive whole.

5. It has been our pleasure and privilege to have a number of individuals and groups that cooperated with us in carrying out the needed activities to make the Conference a memorable one. We thank all of you at R.M.K. College of Engineering and Technology and Central Institute of Indian Languages.

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Hopefully, we will also have a series of Conferences for several years to take stock of the developments in the field. So, let us look forward to MELT-2010!

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PART I

MULTIMEDIA IN LANGUAGE TEACHING

In this part, Language Teaching through the use of multimedia receives focused attention. General issues are dealt with by several authors. Authors describe available multimedia and how these can be used for effective classroom teaching and for efficient learning of languages.

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LANGUAGE TEACHING THROUGH MULTIMEDIA

P. Santhi
Coimbatore Institute of Technology
Coimbatore – 641 014
Tamilnadu, India

Language teachers have long been searching for effective and efficient ways to render the learning experience in class as true to life as possible and to assist students in developing the necessary independent study skills. The impact and influence of information technology on education has created an innovative trend for learning language effectively. Computer assisted language learning has made significant advances towards finding a solution and to changing the way that language courses are taught and conceived. Communicative language teaching pays systematic attention to functional as well as structural aspects of language. In addition to the grammar translation and audio-lingual methods, the CLT approach emphasizes the communicative activities that involve the real use of language in daily life situation.

This paper focuses on the similarities and differences of language teaching and learning between traditional classrooms change in the role of teachers and students when they are in different teaching environment and the implications of communicative language teaching approach in the multimedia computer laboratories.

THE SIMILARITIES AND DIFFERENCES OF LANGUAGE TEACHING AND LEARNING BETWEEN A TRADITIONAL CLASSROOM AND A MULTIMEDIA LANGUAGE LAB UNDER THE COMMUNICATIVE FRAMEWORK:

SETTINGS

The instructor did not instruct and guide the English conversation practice in a classroom merely equipped with only desks, chairs, and a large blackboard. Instead, the course was carried out in a multimedia computer language lab (multimedia lab hereafter). There are fifty six Pentium class desktops in the lab. They are all networked. Two computers are set for instructor use only.

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The multimedia lab shares some features with the traditional audio-lingual language lab. The teacher can broadcast the teaching materials by playing audio tapes, video-tapes, or CDs. Students practice with each other in pairs by themselves. The instructor assigns a pair of students as the model group.

The multimedia lab has some features that traditional language lab cannot compete. First, a traditional language lab does not have the function of video on demand. Students can choose an English teaching program they are interested in and learn on their pace of learning. The English learning program will just serve the student's desired goal of learning. In one sense, students easily get the individual attention from the computer. Second, the function of a multimedia lab is multiple. It can not only assume the role of a traditional language lab, but also offer teachers more powerful teaching tools with the aid of modern computer technology.

DESIGN

To be more specific, each session consisted of five stages. First, the teacher oriented students to the basic operation of computers again. Then, the teacher needed to present the simulation software. Second, after students learned how to play SimTown, they must build their own simulation town. Students were required to build the town in collaboration with the partner. They played the role of mayor of the simulated town. At this stage, students merely enjoyed the fun of playing. What they did not know was that they were establishing their own computer simulation environment for language learning. They were allowed to build the city in whichever way they desired. Third, after students finished building their city, the city itself then became the simulation world as students' learning materials. Students were required to practice an assigned topic. Fourth, students presented their simulated town to the class based on the assigned topic. The presentation was oral and in English. The student presentations could be given either individually or in groups. This presentation stage includes two parts: presentation and interaction. In addition to the presentation itself, the other class members might ask questions. It usually took place in a multimedia lab because each group simulation town would be broadcast to every student monitor screen.

As a result, it happens to be very suitable for EFL students at the intermediate level for the following reasons. First, the layout and graphic design are very appealing to students. They will not easily feel bored and keep being interested in the software. Second, the vocabulary in the software is easy to understand.

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Since the software is about a town, it provides several name lists of trees, houses, buildings and the like. Students will increase their vocabulary by playing the software. Third, unlike SimCity, SimTown's counterpart for adults, every creature in this software has its name and personal information such as favorite food and sports. The player can even create his own character and track the character location in the town. It adds more realism to the software.

The challenge of this simulation is that the player must build a town from scratch and then manage it. The town will become a ghost town if it is poorly managed. The computer simulation computes every decision the player makes. The computer simulation will respond to every move the player makes.

First, the CLT teaching in the multimedia lab presents a large impact on the student-teacher communication. The student-teacher communication seemed to be blocked to some extent by the layout of the multimedia lab. Physically, the multimedia lab is larger than the traditional classroom. The physical distance enlarged the psychological distance. It has the tendency that the two-way communication between the teacher and the students turned to be the one-way teacher to student communication.

Second, the student-computer communication is relatively new to students. For most of the students, it was the first time for them to take so much time "talking" to a computer. It is imperative to clarify to clarify the concept of communication with a computer. SimTown is interactive software. By interaction, we mean that the computer software will respond to students' move and every decision will lead to different ends. The computer software and students do not communicate with each other by "words." Instead, students need to learn another communication system. The computers communicate by means of graphic presentation, sound effect, and animated characters. Students have to learn how to communicate with the computer so that they know what move they should make next.

Also, the communicative activities are different. In a traditional classroom, the teacher provides the topic-specific situation for students to make use of language as much as they can. Since the traditional classroom is far from any similarities to the real life situation, the teacher has to tell students to use their imagination and place themselves in that situation. Nevertheless, the multimedia lab offers the opportunity for students to visualize the situation. The computer software creates a virtual world that is very similar to the real world. It is a world that you can see.

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THE ROLES OF TEACHERS AND STUDENTS WHEN THEY ARE IN A DIFFERENT TEACHING ENVIRONMENT FROM TRADITIONAL CLASSROOM

The role of teachers and students apparently change. The teacher assumes the role of coach or director. He or she orchestrates the flow of communication for the whole class. However, the teacher must realize that to some extent a teacher has been shared with the computer. In this study, the computer software is not designed for teaching. Therefore, the intervention of computer in a teacher's teaching is not very obvious yet. In case that learning-oriented computer software is used in a multimedia lab, teachers have to be aware that students no longer depend on the only source of knowledge. The computer software will "teach" students the knowledge that teachers are supposed to teach. As a result, a teacher must transform his role from a coach or a director under the communicative framework to a coordinator. The teacher coordinates the flow of communication between the teacher and the student as well as between the student and the computer.

On the other hand, students should elevate their learning motivation and independence on learning. Students' higher motivation is reflected by the interest of participation. When the communicative task requires the student and his partner to complete the town building task on the computer, the negotiation is initiated. Although they might not necessarily speak English when they negotiate about the town building, some students felt the need to communicate in English. Also, they felt that they could set the pace of learning. They did not have to finish the town building in one hour. Rather, they would discuss with the partner and built the town according to their pace of learning.

IMPLICATIONS OF THE COMMUNICATIVE LANGUAGE TEACHING APPROACH IN A MULTIMEDIA COMPUTER LANGUAGE LAB: First, the choice of appropriate computer software that fits into the setting of a multimedia lab is one of the keys to success. They are still very helpful teaching tools in a multimedia lab. However, the medium of teaching ought to go along with the computers. The other dimension that should be taken into consideration is that the teaching tool is also different in a multimedia lab. Chalks and blackboard are obsolete. The computer is the most appropriate teaching tool in a multimedia lab. Accordingly, using computer software in a multimedia lab should be fun and interactive.

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Second, orientation is import. The problems come from two aspects. One is the computer software itself. One extra job that students have to do is to learn how to manipulate the computer software. For the first few weeks, students have to become familiar with the manipulation of the computer software so that they can begin to make use of the software. Teachers should be aware of the possible frustration resulting from the unfamiliarity of computer software. The student's difficulties in the manipulation of the software usually undermine the students' interest in the class. The computer software is completely new to students. Consequently, negative interactions between students and the computer proved to be very frustrating for most students.

The teacher assistance should help them smooth out the difficulty and they will be very glad to engage in all communicative activities based on the computer software. In a multimedia lab, the management demands not only the fundamental knowledge of computer, but also the advanced the knowledge of computer, which is almost impossible for the majority of English teachers. In other words, you need to be familiar with the computer software you are using in the class, answer students' technical questions, and diagnose the temporary shut-down of computer. In comparison with the work in a traditional classroom, managing a conversation class under the communicative framework in a multimedia lab is relatively demanding.

CONCLUSION

Opportunities for learning with multimedia are changing the focus of course delivery in modern language departments. It can not only assume the role of a traditional language lab but also offer teachers more powerful teaching tools with the aid of modern technology which makes language teaching effective.

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MULTIMEDIA FOR LANGUAGE LEARNING AND TEACHING

R. Udhayakumar
Department of Linguistics
Bharathiar University
Coimbatore 641 046
Tamilnadu, India

Introduction

Multimedia is the use of several different media to convey information such as Text, audio, graphics, Animation, Video, and interactivity. Multimedia also refers to computer media. As the information is presented in various formats, multimedia enhances user experience and makes it easier and faster to grasp information. Presenting information in various formats is nothing new. But multimedia generally implies presenting information in various digital formats. It is also used in visual arts to describe works created using more than one medium. Multimedia finds its application its application in various areas including but not limited to, art, education, entertainment, engineering, medicine, mathematics, and scientific research.

Engineering:

In engineering, especially in mechanical and automobile engineering multimedia is primarily used for designing a machine or an automobile. This lets an engineer view a product from various perspectives zoom in on critical parts and do other manipulations before actually producing it. This is known as Computer Aided Design –CAD.

Multimedia gives grading and sequences of attitudes, abilities, and skills for the students: There is some authority for the following listing of factors for learners in order of emphasis and of importance for language development. Using multimedia, first it deals with attitudes. In attitudes multimedia makes to the student like

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- o Willing to participate
- o To improve and develop language skills.
- o Discover and correct own errors through exercise and worksheets.

Using the multimedia learning, the students could have capable of adopting the vocabulary according to the domain. Not only vocabulary they could use vivid, apt words and phrases. Mostly, learning English through multimedia students will avoid trite words and phrases. In sentence, they can express complete thought, students will avoid gross crudities, They will use variety. In speech as, speak audibly, speak distinctly, correct pronunciation, pleasing voice, deliver speech effectively. The usage of multimedia teaches to students for the use of adverbs and adjective currently, written mechanics, use of correct capitalization and punctuation, use of proper manuscript form and be neat the student work teaching with the help of multimedia.

Learn and Teach English with Video slides for, PC, iPods, mp3 and mp4 devices:

Mp3 & video pod casts, English audio e-books for reading, printable worksheet e-books for educators, PowerPoint presentations, self-grading grammar & vocabulary quizzes and more. English Video slide lessons for use on ipods, PCs or laptops. These videos are lesson presentations built with PowerPoint. Learn new vocabulary, pronunciation, spelling and sentence structures with videos that can be used for self-tutoring or teaching in a classroom. English Video slide lessons for use on ipods, PCs or laptops. These videos are lesson presentations built with PowerPoint. Learn new vocabulary, pronunciation, spelling and sentence structures with videos that can be used for self-tutoring or teaching in a classroom.

Audio books:

English Lessons on mp3 audio. Included in every audio book. This audio book is full of lessons for beginners to pre-intermediate levels of students. There are over 50 English lessons in our books with an mp3 file attached to each lesson. These are great readers for beginners.

Multimedia Variety and motivation:

Multimedia is exciting, frequent combining text, photographs and pictures, animation, audio and video clips. In can provide variety in presenting and practicing English language. Those are contains in CD-ROMs and some other electronic device. Among those device CD-ROM is a powerful learning tool. It

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can be a tremendous support for language teachers. They are many reasons for incorporating CD-ROMs in to English language courses. Many students are motivated by using CD-ROMs and enjoy a technological component in their language.

But the high motivation to study English is observed by using multimedia which gives a variety of forms of teaching from listening to audio records and watching video, up to works with computer programs and dialogue in a chat. As it is known, all these kinds of activity are sources of entertainments of students during leisure time. The process of teaching English becomes interesting, easy and thus, productive.

Learner Independence and authenticity:

Making computers available can encourage students to do extra work outside the classroom, play language games and hopefully, gain extra exposure to the language and improve their progress in the language. Video clips and text can provide exposure to real – world language, which in form can motivate students.

Ways for using multimedia in language teaching:

There are many ways of using multimedia in language teaching either integrated into a lesson or for self study here are some ideas.

- o Presentation of new language
- o Multi-tasking
- o Assigning self study

Presentation of new language:

Using a computer projector, the teacher can project the computer screen so the whole class can watch a presentation. Adding the power of multimedia to a class can make presentation of new language memorable. We need only the one computer! And clicking on objects on the screen for example, enables primary learners to see and hear new vocabulary items. The teacher can then move on to story telling with younger learners, using the on-screen animated stories to reinforce language points.

Multi-tasking:

Taking the learner into a self access room and allowing them to work at their own pace, while the teacher offers support and guide once as and when necessary, allows learners to study something which is challenging for them individually.

Assigning self study:

CD-ROMs can be truly learner – centered assigning different tasks to learner for self – study can give each students learning experience specific to their needs and level.

And pronunciation practice, relaxing in the language, learning to learn, developing language skills help with listening, help with reading, exam practice, topic work, vocabulary expansion, Integrating multimedia

Pronunciation Listening and Teaching:

Practice English pronunciation by listening to tongue twisters. English mp3 tongue twisters are a great way to improve pronunciation. Teach English phonetic pronunciation using IPA. There are number of resources mp3, worksheets, flashcards, charts, video slides, PowerPoint presentations and more to make the teaching of pronunciation very easy.

Example for Video Lessons for easy vocabulary teaching & self-study:

- Prepositions of place(where is, behind, on, under, next to)

- furniture in the office (words about office things- chair, computer, etc)

- Office machines (fax , printer and more)

- Countries of the world lesson (Where are you from?)

- Food lesson(learn food/fruits/drinks vocab., quantifiers, sentence patterns)

- Vegetables (learn and teach vegetable vocabulary easily)

- Daily routines talk(two career couple's weekly schedule)

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- Shopping vocabulary(learn words related to shopping)

- spelling vs. pronunciation (learn how English spelling can differ from pronunciation)

- fruits (teaches you fruit vocabulary)

- Things we drink (learn vocabulary related to things we drink)

- Clothes (learn vocabulary related to clothes)

- continents (learn the six continents of the world)

The success of teaching:

The success of teaching depends on the interest of students to the subject, on their desire to learn it. Sometimes classes pass by, not leaving a trace in education of students. Studying time is whiled away by drawing pictures, talking to the neighbor or sending SMS. In some cases the stimulus is very difficult to create. But the high motivation to study English is observed by using multimedia which gives a variety of forms of teaching from listening to audio records and watching video, up to works with computer programs and dialogue in a chat. As it is known, all these kinds of activity are sources of entertainments of students during leisure time. The process of teaching English becomes interesting, easy and thus, productive. The development of language skills and media skills is carried out not only in the university at the classes of English, but also in the daily life of students.

Conclusion:

The use of multimedia for language learning and teaching is multifarious in the world of science and technology, the role of multimedia in learning and teaching is indispensable .computerized instruction helps to overcome the short coming found in traditional methods, as it is interactive and more friendly closer with the learner which is at the disposal of the learner himself. It also removes psychological atmosphere they feel discomfort. The multimedia programs equipped by sound recording tasks build less stress full conditions. Each student individually has an opportunity to write down his/her speech, to listen to it and compare to the authentic speech. Such kind of work removes the psychological difficulties of speaking, develops practical skills, phonetic skills and media skills without the trauma of psyche of the

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students. So these are the ways available to develop and enrich the language in one who learns English language as a second language. The second language leaner will get fluency and good pronunciation also. Thus teaching English using multimedia is the solution to the demands of the globalize world.

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Language Teaching in a Multimedia Language Lab

A. Joycilin Shermila, Ph.D.
Annammal College of Education for Women
Tuticorin
Tamilnadu, India
jshermila@yahoo.com

Due to the influence of information technology on society and education, computer-assisted language learning (CALL) is becoming the trend in foreign language teaching. Interactive computer network allows students to test the result of learning without the risk of being punished for any mistake. Learning does not have to be a pressure. Computer-assisted language learning can reduce the anxiety of students and turns out to be a positive side of learning (Gates, 1997).

The aim of this study is to explore how students adjust themselves in learning English *vocabulary* with the aid of multimedia computers and the interaction between students and multimedia computers.

The following are the three questions this study would address.

- *What are the similarities and differences of language teaching and learning between a traditional classroom and a multimedia language lab?*

- *Are there any changes in the roles of teachers and students when they are in a different teaching environment from traditional classroom?*

- *What are the implications of the Communicative Language Teaching Approach (CLT approach hereafter) in a multimedia computer language lab in teaching?*

The present study was conducted in January 2009. Subjects were 35 B.Ed. trainees who have English as of their Optional Paper. Since the students have Communicative Approaches to language teaching and usage of Multimedia in language teaching in their theory and practical course this study was made as a

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part of their course. The teacher and students met for two hour session in the Multimedia lab for four weeks.

All the students are Graduates and Post Graduates. Also, students were familiar with the basic operation of computers such as saving and retrieving files because they took a required computer introductory course at the beginning of the academic year.

Setting

The instructor did not instruct and guide the English vocabulary practice in a classroom merely equipped with only desks, chairs, and a large glass board. Instead, the course was carried out in a multimedia computer language lab. There are 25 Pentium IV desktops with LCD monitors with broadband connectivity in the lab. They are all networked. One computer was set for instructor use only.

The multimedia lab shares some features with the traditional audio-lingual language lab. The teacher can broadcast the teaching materials by playing audio tapes, video-tapes, or CDs. Students practice with each other in pairs by themselves. The instructor assigns a pair of students as the model group.

The multimedia lab has some features that traditional language lab cannot compete. First, a traditional language lab does not have the function of video on demand. Students can choose an English teaching program they are interested in and learn on their pace of learning. The English learning program will just serve the student's desired goal of learning. In one sense, students easily get the individual attention from the computer. Second, the function of a multimedia lab is multiple. It can not only assume the role of a traditional language lab, but also offer teachers more powerful teaching tools with the aid of modern computer technology.

The subjects were paired in groups. Students were assigned a topic for every meeting in the class. First, students began to visit the given websites to learn new vocabulary. As an assignment they complete the worksheets provided to them. The following are the websites they visited to learn new English vocabulary –

http://www.vocabulary.co.il/ Games, crossword puzzles and vocabulary quizzes.

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http://www.vocabulary.com/ A website filled with puzzles, games, lesson plans and activities to build vocabulary.

wordnet.princeton.edu

http://www.vokabel.com/ Practice vocabulary

http://www.funbrain.com/words.html Games to strengthen

http://www.cogsci.princeton.edu/~wn/ An on-line tool that groups words by nouns and verbs.

To be more specific, each session consisted of four stages. First, the teacher oriented students to the basic operation of computers again. Then, the teacher needed to introduce the website. Second, after students learned to work on the website they are instructed to fill in the worksheets. Students were required to do the work in collaboration with the partner. With fun they played using the interactive website and they did not know that they were establishing their own computer environment for language learning. They were allowed to take their own time to move on to the next stage. Third, after students finished filling in the worksheets they served as students' learning materials. Fourth, students presented their worksheets to the class based on the assigned topic. The presentation was oral and in English. The student presentations could be given either individually or in groups. This presentation stage includes two parts: presentation and interaction. In addition to the presentation itself, the other class members might ask questions.

To become comfortable with the new words learnt, practice in using the words in writing and speaking is important. Building a personal vocabulary file helps students to keep up with the new words while they practice them. On an index card, they write the word and its meaning, a sentence in which they can use the word correctly, and variations of the word.

An interview was conducted to randomly select five students and unanimously they felt that www.vocabulary.co.in is a highly interactive website where they played many interesting games and also increased their vocabulary power. The following is the information they gave about this website. Vocabulary.co.il is a great vocabulary builder. This educational website is a great way to learn English. Vocabulary.co.il games help to expand English vocabulary, whether we are interested in improving our English for school, business, or personal reasons.

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Not everyone is able to learn English through the immersion method, by moving to an English speaking country and only hearing and speaking English until they are fluent.

Many people learn English through a blend of methods - by taking English classes, reading books and watching movies in English, and studying English with English language software. Playing word and vocabulary games can be a valuable part of learning English.

Vocabulary.co.il is a fun site dedicated to helping you build reading, phonics, or English language skills. They offer Free Online Word Games which are specifically designed to build language skills and motivate people to learn through fun practice in spelling, phonics, and vocabulary.

Learning Vocabulary by Category

Vocabulary.co.il's vocabulary games are separated into hundreds of categories. By making connections between words and ideas, and between words and pictures, we gain vocabulary. Connections make the learning process faster and more efficient. This grouping of knowledge by topic is the cornerstone of the **vocabulary.co.il** learning website.

Word Games for Test Preparation

Crosswords - With 50 categories and a print option, our hi-tech Crossword Puzzle offers two levels of play, floating clues, hints, and a lot of fun. **Crosswords** build skills in vocabulary, reasoning, spelling, word attack and differentiating between similar terms.

Word Search - The word search puzzle can be played online or printed out, includes hundreds of categories, a variety of difficulty levels, and a timer option. Searching for words hidden in a grid of letters requires careful attention to correct spelling, and improves eye tracking.

The Vocabulary Quiz - Educators know that using sentence context to determine the meaning of a word is one of the most effective ways of expanding your vocabulary. The multiple choice Vocabulary Quiz offers 16 topics and over 1600 questions, plus options including skill level, time length, and number of questions.

Match Game - Making the word-picture connection is the earliest step of beginning reading. Like the classic game of Concentration, Match Game builds visual memory skills by clicking and flipping cards to match pairs. Students can also click on the word card to hear it pronounced.

Word Scramble - Choose a word from over 100 topics, select from three levels of difficulty and unscramble words to build skills in spelling, phoneme recognition, and vocabulary.

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Discussion

What are the similarities and differences of language teaching and learning between a traditional classroom and a multimedia language lab under the communicative framework?

The study presents two types of communication in the multimedia lab from the perspective of the CLT teaching. First, the CLT teaching in the multimedia lab presents a large impact on the student-teacher communication. The student-teacher communication seemed to be blocked to some extent by the layout of the multimedia lab. Physically, the multimedia lab is larger than the traditional classroom. The physical distance enlarged the psychological distance. It has the tendency that the two-way communication between the teacher and the students turned to be the one-way teacher to student communication.

Second, the student-computer communication is relatively new to students. For most of the students, it was the first time for them to take so much time "talking" to a computer. Here we need to clarify the concept of communication with a computer. As mentioned above, all these vocabulary building websites are interactive in nature. By interaction, we mean that the website will respond to students' move and every decision will lead to different ends. The computers communicate by means of graphic presentation, sound effect, and animated characters. Students have to learn how to communicate with the computer so that they know what move they should make next.

Next, the layouts of the traditional classroom and the multimedia lab look similar. The seats and computers are all arranged in a matrix. One important difference is that the teacher can easily reach students by walking in the aisle between two columns of seats and initiate the communication. Students can also easily rearrange the seats for the communicative activities in the classroom. It does not happen that way in a multimedia lab. All computers are fixed on the floor in the same matrix as the seat arrangement in a traditional classroom. All of a sudden the teacher has the difficulty reaching students. A multimedia lab is far larger than a traditional classroom. Thus, the teacher needs to talk to students through the broadcasting system.

Also, the communicative activities are different. In a traditional classroom, the teacher provides the topic-specific situation for students to make use of language as much as they can. Since the traditional classroom is far from any similarities to the real life situation, the teacher has to tell students to use their imagination and place themselves in that situation. Nevertheless, the multimedia lab offers the

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opportunity for students to visualize the situation. The computer software creates a virtual world that is very similar to the real world.

Are there any changes in the roles of teachers and students when they are in a different teaching environment from traditional classroom?

The role of teachers and students apparently change. The teacher assumes the role of coach or director. She orchestrates the flow of communication for the whole class. However, the teacher must realize that to some extent a teacher has been shared with the computer. In this study, the website is not designed for teaching. Therefore, the intervention of computer in a teacher's teaching is not very obvious yet. In case that learning-oriented computer software is used in a multimedia lab, teachers have to be aware that students no longer depend on the only source of knowledge. The computer software will "teach" students the knowledge that teachers are supposed to teach. As a result, a teacher must transform his role from a coach or a director under the communicative framework to a coordinator. The teacher coordinates the flow of communication between the teacher and the student as well as between the student and the computer.

Conclusion

In conclusion, on the basis of the discussion, this study does not present enough evidence to show that the communicative language teaching method is more effective than it is in the traditional classroom. However, this study would like to suggest some directions for teachers' reference. First, teachers should prepare themselves for the use of modern computer technology. Second language training will not always take place in a traditional classroom. With the help of a setting such as a multimedia lab, second language training will be more efficient. Teachers should have the clear idea of how a traditional classroom is different from a multimedia lab.

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INTERACTIVE MULTIMEDIA LANGUAGE TEACHING PACKAGE: DESIGN AND DEVELOPMENT

M. Ganesan, Ph.D.
Annamalai University
Annamalainagar
Tamilnadu, India
ganesan_au@yahoo.com

Introduction

Language is the powerful means of communication. It is the vital component in education by which we acquire all kinds of knowledge. Language is the base and primary requirement for education. It is, therefore, necessary for everyone to acquire the basic language skills like listening, speaking, reading and writing and to develop the higher order communicative skills like comprehension, coherence and cohesion in communication, effective presentation, developing analytical faculty and creativity. In precise the language education must aim at in molding the younger pupils with all there skills and prepare them to learn other subjects and to gain more knowledge in different fields. Unfortunately, particularly in India, the language education is not given enough attention both at school and college level. The prime factors are that the givers and takers of education (teachers and students) and the parents emphasize job-oriented education with more knowledge on mathematics, science, computers etc, sidelining language education, particularly the regional language education. English and English learning still maintain rather increase, the social status and English language education gets red-carpeted welcome among all the cross sections of the society. English is the medium of instruction in the professional courses like medicine, engineering, etc. and in most of the courses at post graduation level. The IT (Information Technology) and ITES (Information Technology Enabled Services) demand equal competence both in technical knowledge and English communication. Though the prestige of English glow brighter and the functional utility has been widened to English in our country, there is no mark able charge in teaching of English in our schools and colleges. In this article I have made an attempt to present, in brief, the role of multimedia packages as

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teaching aid for language skills development, the importance of interaction in learning, and designing interactive tutorials, exercises and games. ENGLISHLAB-a multimedia English learning package designed by a team of language teaching experts for school children is taken as sample for the present study to explain most of my views on language teaching through multimedia.

Technology and Language Teaching

The potentiality of computer technology in teaching is enormous. The basic features of computers like speed, memory, computing, accuracy, colour, graphics, animation, randomization, timing, etc. facilitate to present teaching materials more colourful and attractive way, to preserve the materials for future uses, to update them with little effort, to exchange the materials with many users, and there by improve the learning efficiency. The computer aided teaching makes the learning enjoyable; it motivates the learners in learning; demands active participation; keeps the learners vigilant; saves the learner's time; and provides a better learning environment.

Supplementary materials

Any supplementary material is generally prepared keeping the curriculum, prescribed to a specific level of learners and the core materials in view. The objectives of supplementary materials are 1) to reinforce the classroom learning, 2) to provide opportunity to have more drills and practices on the concepts learned, 3) to expose to a variety of similar illustration and 4) to furnish additional information related to the concept. Materials with varieties in presentation can make the learners to enjoy learning. It can be prepared such a way to encourage different activities and promote acquisition of knowledge. The screen design, presentation style, the type and quantum of visuals, sound effects, etc. have to be selected according to the age group of the learners. For the children, who begin schooling, the materials must be with more visuals and audios. In this much attention has to be paid to designing activities, which focus on task that are mediated through language or involve negotiation and showing of information by the participants. The visuals and sound should provide ample opportunities to the children to be motivated to talk among themselves.

Multimedia and interactive learning

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The concept of multimedia came into exist in the early 1990s. It is a combination of texts, graphics, animation, video, sound and voice. It is a powerful mechanism to make attractive presentation and effective persuasion of any audience. One can exploit the features of computers and multimedia and develop more interactive teaching material through multimedia. The technology development in computers and multimedia authoring tools has made the preparation of multimedia is an effective teaching aid due to its interactive capability (Kenning & Kenning, 1983). The teaching aids like blackboard, charts, maps, tape recorders, televisions, etc. are considered as passive media where as computer is an active medium; it cannot only display the contents but also allow the learners to interact with the materials. Computers not only tell the students whether the answer is correct or wrong, but also explain how it is correct or wrong. We all know that the more the interaction leads better learning. "Studies indicate that if you are stimulated with audio, you will have about 20 percent retention rate, audio-visual is up to 30 percent and in interactive multimedia presentations, where you are really involved, the retention rate is as high as 60 percent (Vaughan, 1997:10). One must pay more attention for interaction while preparing a teaching unit. Multimedia packages can be developed for self learning, for reinforcement of concepts learned in classrooms and for using as supplementary tools in the classroom. Or a package can be designed to be used for all the three purposes.

ENGLISHLAB

ENGLISHLAB is a multimedia package which aims at to develop English language skills of school students in the age group of 10-14 years. This package contains two CDs. In each CD there are two units. Each unit contains 4 major components: 1) a story and exercises for listening comprehension, 2) exercises for reading comprehension, model reading, fast reading and punctuation, 3) grammar with tutorials and exercises 4) vocabulary development through games. All these components are designed by paying additional care for interaction. In multimedia packages various features like user friendly navigation, instructions for operation, interfaces, use of buttons (for more information about the word), comments to a response (through text / voice) timely cues for answering a question, special sounds for appreciation / mistake, etc. are valuable interaction. While preparing teaching units the teacher or material producer must keep the features in mind to take the learners along with the flow of materials without boring them. A variety of presentation normally helps to create interest towards the package and to avoid monotony.

The materials for ENGLISHLAB have been prepared with utmost care on each of the above points. Content selection, target audience selection, identifying the difficulties faced in traditional teaching methods, curriculum design, program design, discussion with subject experts and teachers, revision of materials, coding, trial, and final 'polishing up' are the stages of works undergone with ENGLISHLAB.

I) Story: Each unit has a story or a narration of an incident through voice supported with visuals. The purpose of presenting a story is to make the children to listen to a piece of English. The visuals with animated graphics help the learners to comprehend the story easily. Followed by the listening of story a test for comprehension is given in question – answer format. To answer them students have to listen the story carefully. It needed the students can go back to story and listen to it once again. The comprehension questions are presented in the form of multiple choices. If a wrong answer is selected, a special sound is played to indicate the mistake. When the answer is right, the next question will be displayed. Here the learner can use the mouse to move around on the screen and can select an answer by clicking on it. Score is given for each answer and is computed keeping the number of attempts the learner made. If he gives correct answer on the first attempt, he gets full mark. In case he finds out the correct answer in the second attempt, he looses some marks. If he fails in the second attempt, computer gives the correct answer and there is no score for the question.

The comprehension test makes the children to learn the language; he is forced to listen to the story number of times and there by learn new vocabularies and structures. Computer evaluates the answer on the spot and, therefore, the learners can act on the basis of evaluation. The scoring makes the children to know about their performance in that particular task. Therefore this method of presentation encourages the learners to listen more, evaluate the comprehension and make them to know their level of performance.

II) Reading comprehension: There are three modules under reading: 1) model reading 2) punctuation and 3) fast reading. All the three are designed to improve the reading skills of the learners. Under model reading, a passage is read with proper pausing and modulation along with the display of text on the foreground and suitable pictures on the background. Doing so the students are virtually taken to the place of incident. Following the model reading, question – answering section with multiple choice methods is

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presented to test the comprehension of the learners. This exercise is with time constrained. Each question has to be answered in a stipulated time limit. The timing makes the students to be alert and answer it fast. It provides a training to do exercise in time. Scoring with attempt count is also done in this exercise. In the punctuation module, a text with out the punctuation markers is given on the screen and is simultaneously read out with proper modulation. Then the students are asked to insert suitable punctuation marks at appropriate place. The method of insertion is explained to the students in writing as well as through voice. Once marking is over, by clicking on the button 'evaluate' answer will be evaluated and the words are boxed with red colour wherever the punctuation marks are inserted wrongly and in green colour for correct ones. The system permits the user to attempt the exercise again. By clicking the button 'answer' he can view the text with proper punctuations marked. This module and the previous one allow the learners to listen to the voice first then to read the text and there by expose them to improve both the skills. The design to evaluate punctuation markers is novel and makes the learners to read the text again and again in order to find out the suitable markers. This exercise improves both the reading skill and using of punctuations. In the third module, fast reading, a fax machine is taken as interface. Paper moves from bottom to top and four line of text can be viewed in a window on the fax machine. The speed of the paper movement can be adjusted to a range from 1 to 9. Students can select a speed a step more then their normal speed of reading and thereby make attempt to read fast. This module has also a comprehension exercise in multiple choice formats.

III) Grammar: This section is presented in two parts: 1) exercise and 2) tutorial. A number of topics, which have been selected from various syllabus prescribed for VI and VII standard, are presented in the four units. The topics like articles, adjectives, negation, possessive pronouns, degrees of comparison, questions, conditional sentences, direct & indirect, tag questions, past tense, subject – verb agreement, adverb, correlative conjunctions, gerund, active & passive and relative pronouns are included in the ENGLISHLAB. The exercises are presented in the form of multiple choices, fill-in the blanks, modification of text, say yes/no and select the correct one. Under each form of presentations a number of attractive and innovative methods have been introduced to draw the attention of the learners fully towards learning components. For example, in the fill-in the blank, a blank can be selected and the correct answer can be clicked from a multiple choice will appear there in a box, or the base form to be filled in the blank

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is clicked for answering, multiple choices or when the mouse over the blank, the multiple choice will appear on a window for the selection. Similarly a variety of methods have been introduced under each form. Different interfaces, animations, attractive backgrounds, special effect sounds and voice and scoring are the added features of the exercises. They provide more interaction and make the learning enjoyable and interesting.

The second part of the grammar is tutorials. As the package is designed to test and develop English language skills, exercises are given priority than tutorials. When a learner has problem in answering a question, he/she can click on the tutorial to learn more about the topic. The lessons are presented as text on the screen as well as through voice. Texts are displayed with colours and animations, and with special effects to high light some portion of the text need to be emphasized.

IV) Games: Games, in general, are interesting and that too presented through multimedia, which is a medium for entertainment, will, no doubt, be enjoyable not only for children but also for adults. However, making a game interesting or not mostly depends on the design. Language games can be grouped under there categories, viz. 1) simple games 2) adventures and 3) simulations. (see, Ganesan, 2003). Games can be designed such a way that they can be used by fast learners as well as slow learners. Rewards for the players who successfully complete the games may be given in different ways like 1) verbal appreciation, 2) score, 3) time target, 4) goal target and 5) unpredictable reward. Such appreciations encourage the children to play games with more interest and involvement.

The games in the ENGLISHLAB are mainly for vocabulary development. There are four games, one in each unit; 1) Word maker, 2) Scan homoward 3) Scan antiword and 4) Guess my word. The games are self explanatory. In 'word maker' a word at random will be displayed on a window. The user can select letters one by one from the given word and make a meaningful word. The total possible words are displayed on the screen and each word, built by the user will be, a time count. If the student makes words 60 percent and above, he is good at vocabulary. In case he wants to view all the words, he can get the list. One he completes the word making I one exercise; he can go to next word.

In 'homoword' a word is displayed on a window and nine words will be displayed on nine different windows. Out of the nine, only one will be the synonym to the given word. The learner has to find out the one and click on the word. If it is correct, appreciation through voice is played and next word will appear

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on the question window. If the selected answer is wrong, the background design i.e. television will be broken with a voice.

In 'Antiword' fishes carrying words on their back are swimming in a tank. A word is given on the question window and the antonym of the word has to be identified from the words on the back of fishes. If the correct one is clicked, the fish jumps through the ring and successfully swims out; if wrong, the fish hits the ring and falls into the water.

In 'guess my word' computer keeps a word in its memory. If it is a three letter word three columns of square boxes (and if it's four, four columns of square boxes) will be displayed. There are ten choices for a learner to guess the word in the computer's memory. Ten rows of 3 to 4 square boxes are displayed. Learner can have wild guess at first and select the letter from the given alphabets, there appears cup and saucer, in correct position and upside down position. For every guess, rate of correctness is marked under the two columns. If a number (0,1,2 or 3) appears under the correctly placed cup and saucer it indicates that number of letters and their position on the word are correct and the number under the up side down cup and saucer indicates that the number of letters are correct, but not the position of the letter.

All these games are designed to be played by an individual as well as in group. They are fully motivated to involve the learners in the game rather than learning i.e. the learning takes place indirectly. They encourage group discussion among the users; develop creative faculty of the learners. Learners enjoy learning through games.

Conclusion

Multimedia is a medium of entertainment. Teaching through multimedia will be more attractive to the children and effective in learning. The cost of production of a multimedia title is, no doubt, much higher than that of the materials on other media. But the advantage of this media is that the whole material is in electronic medium. It gives way to revise or reproduce the material with no or less cost and which is not, always the case in other media. The growth of information technology and the use of internet make the sharing of information simple with lesser cost. Though the production cost of multimedia title, which is a one time investment, is so high, it can be used by a large number of populations with lesser cost. The way, the Internet spreads in this country gives a rough idea that, probably, in another few years the facility may be available in every village of our country. In that case one has to think of, right now, the

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production of multimedia titles for language teaching, including communicative skills development in English and teaching of other subjects.

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MULTIMEDIA FOR LANGUAGE LEARNING AND TEACHING

M. Collin. P. Rayen
Saveetha Engineering College
teshinajoe@gmail.com

Boon of the day

As language educators, one should not ignore the educational applications of the latest technology. The language experts have explored the potentials of the available sources and exploited them to the maximum to upgrade the instructional strategies to enhance teaching and learning. Undoubtedly, this target has been achieved through multimedia and its manifold usage. These multimedia components are effective in terms of helping the students to elicit, explain and communicate information because they can break down complex concepts into simple, meaningful display. Finally, this module has created a great impact among the learners and it facilitates them to overcome their language deficiencies and thereby make, a number language learning methods have been adopted from time immemorial. The Grammar-translation method, direct method, audio lingual method, the oral approach and situational language teaching method and communicative language teaching are a few of them introduces by the language experts. These methods were introduced at regular intervals according to the standard of the learners, and status, where native, alien, or as first or second language. Gradually, the emergence of new media added new dimensions to English. The necessity of new methods and techniques was felt. Hence, the conventional patterns are gradually being replaced by updated materials, modern curricula and with ever changing syllabi according to the systematic growth of knowledge.

As each improvement in technology became available instructors, who saw themselves as "hip cool and hi-tech" quickly incorporated the new tools, correctly perceiving that sick multimedia presentations have a certain amount of entertainment value for students. Several dozen studies indicate that computer based multimedia can improve learning and retention of material presented during a class session or individual study period as compared to traditional" lectures study materials that do not use multimedia.

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Multimedia can be defined as the computer-delivered combination of a range of communication elements-text, sound, graphics, pictures, photographs, animation and moving video. Language learning is concerned with the development of communication skills and has traditionally and creatively exploited all these communication elements. Each element has its own particular advantage in conveying particular kinds of messages and evoking particular kinds of learner responses. Essentially, however, the ability of the single source, the computer, to combine, link and orchestra all these communication elements of multimedia would be most probably greater than the sum of its individual parts.

The computer based delivery of video, audio, written text, graphics and the integration of all these elements to produce software for communication is called multimedia. Technological advances, which are so closely related to channels of communication and to language, can be valuably incorporated into gamut of language learning tools.

The application of multimedia attempts to combine the state-of –the art pedagogy with state-of-the art technology. The major motivation for the development of multimedia teaching is the potential it offers for the bandwidth for information transfer. This can be made possible using variety of communication channels-textual, sonic, graphic, and tactile and so on.

In the latest educational scenario, computer and its application have been emerging as the trendsetter largely for the benefit it provides in any field. The advent of the high–powered multimedia kept the learner close to authentic situations where learning simultaneously involved listening, seeing, reflecting, doing and participating.

Multimedia additionally provides further and more powerful dimensions to communication when the control and manipulation of this meaningful information is passed into the hands of the learner. The ability to interact with these communication elements via interactive multimedia allows language learners to explore, discover, ponder, search, question, answer and receive feedback. Owing to the rapid development of industry and technology, an increasing need has been felt for improving the communication skills at all levels of administration. However, the available teaching and training materials are not adequate to meet the demand of the industry. Hence, it has become necessary to identify more methods to suit the present trend.

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Undoubtedly, multimedia is capable of bringing authentic, like, real world impressions before the learners to give the maximum insight, or experience in the subject or field in which a learner is interested.

Multimedia-A Flexible Learning Resource

All language learners are different in terms of their requirement, enthusiasm, strength and weakness, motivation, style etc. The ability of the multimedia to be used as flexible self-study resource may be useful in accommodating these learner differences. Learners can focus on the area they are interested or weak and can learn at their own pace. They can take as much time as they like, they can repeat the same module number of times they prefer. Overall, the learner and researcher can use variety of media on offer that they prefer to learn from the media.

The PC based learning center has all the needed, resources. Hence, the responsibility for any learning decision during the use of multimedia is passed over to the learner. The learner only can decide how to study, when to study, how to relate with the other subjects and projects. Therefore, any successful language learner is the responsible for his or her own learning. Multimedia with its wealth of in-built materials and its feedback makes the learning autonomous.

In the multimedia learning environment, the learner need not worry about his mistake or weakness. Working in the computer environment is a private. Only the learner knows the error that too the media points out to the error.

Only if the error is detected and rectified the computer will switch on to the next move. In that case the learner, no need to feel shy or need not to have any inferiority complex about the error or regret feelings in front of the others. Interactive computer network allows students to test the result of learning without risk of being punished for any mistake. Therefore, this non-punishment interference from any sector paves way for the learner to build their self-confidence thereby they develop more interest to learn at a faster rate.

Through participation in multimedia activities, students can learn real- world skills related to technology,

  ➢ The value of teamwork

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- ➤ Effective collaboration techniques

- ➤ The impact and importance of different media

- ➤ The challenges of communication to different audiences

- ➤ How to present information in compelling ways

- ➤ Techniques for synthesizing and analyzing complex content

- ➤ The importance of research , planning, and organization skills

- ➤ The significance of presentation and speaking skills

- ➤ How to accept and provide constructive feedback

- ➤ How to express their ideas creatively

There are, however, some constraints for using multimedia in the classroom, including: Technological resources, both hardware and software

Technological skills, for the students and teacher, time required for planning, designing, developing, and evaluating multimedia activities.

Role of Teacher in the Multimedia Classroom

The role of the teacher in the multimedia classroom is entirely different from the normal classroom environment. Hence, the teacher has the important role to play in the conventional classroom atmosphere where he enters the class with some books and ready-made notes and conducts tests to assess the students. There is no self-evaluation method for the students. However, in this new mode, the teacher is only a facilitator or a coordinator and the teacher should have hands on experience on the computer, with improved instructional capabilities and a vehicle through which to apply the instructional technology skills acquired through training and professional development. The role of teachers and students apparently change. The teacher orchestrates the flow of communication for the whole class. In this study, the computer software is not designed for teaching. Therefore, the intervention of computer in teacher's teaching is not obvious yet. In case that learning-oriented computer software is used in multimedia lab, t

teachers have to be aware that students no longer depend on the only source of knowledge. The computer software will "teach" students the knowledge that teachers are supposed to teach. As a result, a teacher must transform his role from a coach or a director under the communicative framework to a coordinator. The teacher coordinates the flow of communication between the teacher and the students as well as between the students and the computer. Using technology in teaching is highly advantageous to a teacher it gives the teacher the power to create ideas in the visual medium. Technology aids the teacher in many ways like multiple accesses to learning content, tracking performance, offering better solution s even during absence, empowering teaching from any place, breaking the concept of time bound learning and so on.

Technology is the basic tool through which the teacher facilitates the learning of the content and hence it needs to be customized for different curriculum and according to the need of the learning group.

Content for learning plays an important role since it determines the instructional objectives. The level and quality of content and the ability of technology efficiently impart the ideas to help the teacher to teach/train a learner efficiently.

In this regard, as a user of technology as a tool of instruction, it becomes important for the teacher to analyze the different features of the technology that we use to teach the students.

The multimedia lab has some features that cannot compete by any other method. First, the function of video on demand. Students can choose an English teaching program they are interested in and learn on their pace of learning. The English learning program will just serve the student's desired goal of learning. In one sense, students easily get the individual attention from the computer. Second, the function of a multimedia lab is multiple. It offers teachers more powerful teaching tools with the aid of modern technology. High motivation to study English is observed by using multimedia which gives variety of forms of teaching from listening to audio records and watching video, up to works with computer programs and dialogue chat. As it is known, all these kinds of activity are sources of entertainments of students during leisure time. The process of teaching English becomes interesting, easy and thus, productive. The development of language skills and media skills is carried out only in the university at the classes of English, but also in the daily life of students.

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The new multimedia English classroom has made possible the technological innovation need in the department by providing students with access to up-to date equipment and systems. These enhancements include word-processing system for composing, revising, and editing writing assignments using hard and software common to today's environment, they have facilitated student learning with multiple modes of visual and audio instruction, as well as the development of greater technological skills. The classroom has further provided the faculty with improved instructional capabilities and a vehicle through which to apply the instructional technology skills acquired through training and professional development.

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THE RELEVANCE OF WEB APPLICATION IN MULTIMEDIA TEACHING FOR ENHANCING L2 LEARNING

V. Sakthivel & Dr. N. Kavidha
Dr. Sivanthi Aditanar College of Engineering
kavith_n@rediffmail.com   v.sakthivel@rediffmail.com

Technology for L2 Acquisition

Due to the impact and influence of information technology, computer-assisted language learning is in vogue in foreign language teaching. Multimedia includes information content processing devices, such as computerized and electronic devices, but can also be part of a live performance for what is to be recorded and played, displayed or accessed. Today, multimedia has become a part and parcel of our life, whether it is through CD ROM or with Internet or blogs or mails. Modern students spend more time with computers or laptops, which are even 'freely' issued in colleges. CD-ROMs offer an ideal medium for the delivery of specific applications that take advantage of large audio, graphics and video files. The publishing industry is increased manifold in order to meet the demand in the market. But a CD or a CDROM is quite limited in its contents and the learners are satiated when the contents are over. Here comes the Internet with its ever expanding resources and the learners can never feel satiated.

Increasing contact with the target language is one of the most critical factors for successful second language learning. Going to the region(s) where the target language is spoken and immersing oneself in the society and culture clearly remains the best (but expensive) method for acquiring linguistic competence in another language. But, this is not possible for all. Instead a foreign environment can be created to learn the language by using technology which provides the real life situations through videos. "Formal L2 instruction is often unsuccessful because learners receive impoverished or insufficient input in the target language" (Cummins 1998:19). Technology, when used appropriately, can play a major role

in enhancing all L2 learners to get contact with the target language. Technology may provide a crucial avenue for contact with the target language, when it is incorporated in the curriculum.

Objectives of multimedia learning:

The main objectives for introducing technology-assisted language learning system are the following:

(i) To improve teaching and learning by using computer as a tool.

(ii) To promote a self-determined learning instrument that can be used collectively for many learners.

(iii) To create interest among the learners.

(iv) To make the learners more comfortable in the class room while receiving the information or knowledge.

To make these objectives fruitful, designing a suitable course claims more importance. Generally, language teachers are considered to be weak in technology. At the same time, technically sound people may not be good in language expressions. Many software vendors use the language as per their wish and cause an irreparable damage to the student community in order to meet the increasing demand in the market. Errors occur in vocabulary, change of cases – upper and lower, punctuation marks, spacing between words etc. These things should be rectified and if necessary, the teachers can offer an error-free text or software for learning. Hence, a prudent and balanced combination of Language & technology should make the teaching - learning process more effective and interesting.

The Multimedia Lab:

The Multimedia Lab has an edge over the traditional audio-lingual language lab, though it shares some features with it. The teacher can broadcast the teaching materials by playing audio tapes, video-tapes, or CDs. The multimedia lab has some features that traditional language lab cannot compete. First, a traditional language lab does not have the function of video on demand. Students can choose an English teaching program they are interested in and can learn on their pace of learning. The English learning program will just serve the students' desired goal of learning. In one sense, students easily get

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the individual attention from the computer. Second, the function of a multimedia lab is multiple. It can not only assume the role of a traditional language lab, but also offer teachers more powerful teaching tools with the aid of modern computer technology.

Different technology based tools render different advantages for learning a second language. There isn't one technology best suited for language study, but rather an array of technological tools that can be harnessed. More specifically, there are three important technological platforms that provide tools to assist language learning, in order of increasing interactivity: the Web, CD-ROM applications, and network-based communication (i.e., e-mail, user groups, chat rooms etc)

Computer assisted language learning can now provide endless opportunities for interaction with a rich set of media types, characters and cultural information. It can also promote greater autonomy among learners, and is one of few methods yet discovered and is different from the unavoidable rote learning aspect of language acquisition, experienced by second language learners. It also aims to provide a relevant, challenging and non-threatening environment which motivates the students to communicate, to reinforce their learning, and to become familiar with situations and cultural notions that may be encountered in everyday life. To achieve these aims, carefully designed and selected media clips can also be integrated into a wide range of exercises and interaction styles, including:

- crosswords

- word puzzles

- written and aural comprehension exercises

- quizzes

- multi-choice questions

World Wide Web

For a second language learner, ever expanding web pages are the perennial source of providing information. With a little knowledge in software packages a teacher can do miracles in teaching a second language. There are a lot of URLs which display video files and You Tube, Google Video, My Space are popular websites for providing video files. Free software like Free Download Manager or

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Internet Download Manager 5.17 can be used for downloading movie files from the URL. The advantage of Free Download Manager is the downloaded file can be converted as an AVI file and can be viewed in the computer, whereas Internet Download Manager 5.17 software downloads the file from the web as a FLV (Flash Live Video) file which needs to be converted as a WMV (Window Media Video) file or AVI (Audio Video Interleave) file using software like Video Convert Master or Total Video Converter. After converting the downloaded files in the playable format, the teacher can edit those files using software like Xilisoft Video Cutter. Downloading and converting these files are not laborious and they can be done in a few minutes. Thus the course material can be framed by the teachers themselves. Then connecting the computers in a LAN, adequate training can be given to the students.

Similarly, English movies with subtitles, downloaded from websites or extracted from channels like HBO, Star Movies etc can be broadcast in a networked multimedia lab. Subtitles will help learners learn a foreign language easily. Otherwise the teacher should give an introduction or the text can be given as a visible copy, so that the learner will follow the flow of the visual. Contemporary materials which are of interest to the student should be selectively given to enhance fast learning. Course design can be facilitated with a mixture of videos, typing or answering and auto evaluation can be done. If the lab is web-assisted, students can be given access to websites that have puzzles or texts for language acquisition. Computer-based multimedia also helps students to develop technical and research skills that they cannot get from reading a textbook.

With the advent of the Internet and the multiple formats that can be communicated over the World Wide Web, we now have several new and exciting ways to present information. The Web allows the incorporation of animation, moving pictures, and sound into lessons, which extends our abilities to present materials that encourage student interaction with the subject matter. Pictures and animations help bring to life language principles, and multimedia allows students to take a more active role in learning. Multimedia presentations keep students alert and focused. They can watch the live characters in action, zoom up whatever they prefer, and use a mouse or keyboard to navigate images, simulations and interactive material. One of the advantages of using multimedia is to convey information quickly and effectively to all students – and keep them interested in learning and can cultivate their listening, speaking, reading and writing abilities, which are the final teaching aim — developing the students' English intercommunicative ability.

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Web Conferencing is a way to share live or recorded presentation with other people viewing the presentation over the web. The way it works is that the presenter installs software on the computer being used for the presentation, and establishes an account with a web conferencing service. The presenter sends a URL and login information (provided by the web conferencing service) to the people viewing the presentation. The presenter and participants all log in to the web conferencing service, and the desktop of the presenter is displayed via a web browser on all the participants' computers. Some systems allow the presentation to be recorded and posted to a web site, protected by a login and a few also support online whiteboards, text chat, and web cams to show the face of the presenter. Many of the services are free if you need to connect with only a few people, but charge a monthly fee if you need to connect to more people simultaneously.

No matter how powerful the modern education technology is, it is only a kind of technology, and it only provides a kind of possibility. It isn't the proved solution for all the problems and we can't depend on it excessively. We should scan the role of a teacher and a student in a class again. Teachers are mentors and can inspire the students with a strong desire to learn a language. A teacher's idea is far more important than a teaching method. As Fullan and Stiegelbauer (1991) have justly pointed out, integration and implementation of any educational innovation into existing practices depends heavily on the teachers. The integration of the educational software in the classroom environment requires strategic and careful teaching. It should be carefully planned and it should be supported both by a technical infrastructure and by a continuing professional development of the teachers.

Computer technology will remain a key component in the 21st century, the so-called "information age". Language professionals need to capitalize on its advantages and strengths with best teaching practices. Language teachers who wish to remain competitive in the profession should observe and contemplate instances where technology can assist good teaching practices. Today's language professionals must educate themselves to adapt these techniques to the needs of their own respective classrooms.

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Part II

Multimedia and Teaching Indian Languages

Articles presented in this part focus their attention on specific issues relating to Indian languages.

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ISSUES IN CREATION OF PHONETIC RESOURCES FOR SOUTH-ASIAN LANGUAGE PEDAGOGY

Peri Bhaskararao, Ph.D.
ILCAA, Tokyo University of Foreign Studies
pbryok@yahoo.com

[**1**] Language and Multimedia: Sound is the primary medium of communication in ordinary settings in natural languages. Introduction of other media brought in the advantage of storage and retrieval of language where both time and place could be distanced between the addresser and the addressee. The written medium first introduced this advantage. Sound recording techniques over several decades brought in methods for storage and retrieval of the spoken aspect of language. Thus, pedagogical materials consisting of written lessons and corresponding sound recordings could be considered as the first multimedia implementation of language pedagogy. This was possible even in the age of different types of analog recordings (wire recorders, wax cylinders, vinyl records, spool or cassette tapes etc.). Digital techniques of sound recording are the next turning point. Unlike an analog recording of sound, its digital recording is captured as a binary file which can be handled similar to a text file. In parallel, digital recordings of pictures added another facet of representation on a computer. We may list various media (conventional as well as computational) that are available to cater to the needs of language pedagogy.

[1.1] Hand-writing: The medium is a physically visible stable material. It has inherently discrete symbols (letters, aksharas etc.). Its output is a text.

[1.2] Computer Text: The medium is electronic storage space (either on a storage medium in a computer, a computer chip in an embedded system, or the cyberspace). Its elements are discrete and unique code points. Most of the code points of a script correspond to the discrete symbols in hand-writing of that script. The output is its visual representation on any output device (such as a computer screen, print-out, display board etc.).

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[1.3] Human Speech: The major medium in routine language communication is the ambient air. The output is a time-varying analog speech signal produced by a speaker and received and perceived by a hearer. Whether there are discreet elements within the analog speech signal is a fundamental issue that has not been resolved satisfactorily.

[1.4] Computer Audio: The medium is the same electronic storage space (as in the case of computer text). Its elements are quantized chunks of the signal (decided by the sampling rate and bit-depth). Its output is converted into an analog signal which is perceptually very close to the original signal.

[1.5] Computer Graphics: The medium is the same electronic storage space (as in the case of computer text and audio). Its elements are quantized chunks of the input signal (similar to the case of computer audio). The output is a visual representation on any output device (as in the case of computer text).

[1.6] Text, Graphics and Hypertext: The above description clarifies the point that 'multimedia' in computers actually refer to the output media (not so much to the storage media). Interestingly, although both computer text and computer graphics have the same output media, computer text has discreet elements such as letters whereas graphics do not have such discreet elements in it. All the three 'media' (text, audio and graphics) exist distinctly in computer storage space (for instance, for this reason the corresponding files are called text files, audio files and graphic files). One can keep these three media separately in the storage space and invoke their outputs by executing the corresponding files.

'Hypertext' could be considered as the next turning point in the way computers simulate human communication. Before the advent and implementation of hypertext, one could read a piece of text on a computer screen, and separately execute a sound file that corresponds to the text and listen to the output sound and/or execute a corresponding graphic file and see the relevant picture/movie clip. This is the bare-bones multimedia approach. Successful implementation of hypertext protocols (such as html, xml etc) revolutionalized the way humans utilize the multimedia components of computers. Hypertext is essentially 'intelligent' text with functionality assigned to it. Besides invoking files from non-text media (audio and graphic), hypertext can also invoke further chunks of text. For instance, one can construct a chunk of hypertext containing singular forms of some nouns and by clicking on one of the nouns, its correspond plural form, oblique forms, case inflections pop up. Thus, hypertext is text that potentially invokes multimedia operations including text operations.

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[1.7] Hypertext and Multimedia: A piece of text that just invokes another piece of text, does not fully utilize the power of hypertexting. On the other hand a piece of text that can invoke all or some of the three media is more 'energy efficient'. Invoking a response from the computer (and thus generating text, audio or graphic content) is the 'output' aspect of hypertext. Hypertext can also be constructed in such a way that it invokes users' response by inviting them to respond verbally or take a picture of something and store it in computer memory. For these reasons multimedia approach to language teaching can be and is being successfully implemented in hypertext.

[2] Sound Input and Output: In the case of sound that is generated from a stored digital audio file, its output is commensurate with the quality of the inputted speech file. Following the often quoted concept of GIGO, if either the quality of sound source or its acquisition (digitizing) or both are poor, then one cannot expect quality output as the machine cannot dramatically improve its quality. The way speech is reduced to writing involves some type of 'quantization' by humans whereas digital sound recording involves proper quantization by machines. Hence, a written text is readable by humans whereas a recorded sound cannot be directly perceived by humans till it is decoded by the machine. To a large extent writing provides us discrete letters with associated pronunciation whereas a recorded sound does not do so. This difference has a bearing on the selection of units in teaching writing as opposed to speaking. This situation is somewhat different in language which uses logographic writing (as Chinese and Japanese do).

[3] Sound Layer in Multimedia: In a multimedia presentation of pedagogical materials, the audio chunk is conceived as a layer. The physical representation of this layer could be a set of sound files (stored either discretely or strung together as one file with built-in boundaries). Table 1 depicts the nature of various layers in a multimedia presentation. Current technology provides 3 layers which can be strung together by the meta-layer of hypertext. Future technology may provide some other layers (?tactical, olfactory). The script layer is the basic layer (in fact, it is the only layer available in printed materials). Out of the two extra multimedia layers, the sound layer has a more direct relationship with the script layer. This corresponds to the conventional skills of reading/writing and listening/speaking.

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	Conceptual Layers	Physical files	Acquisition	Delivery
Hypertext (Meta-layer)	Script	Pure text portion of Hypertext (=minus the markup)	Fresh data entry / scanning	Visual or tactical (for handicapped)
	Sound	Sound files	Fresh recording / digitization of old materials	Audio
	Graphic (still/movie)	Graphic files		Video
	?	?	?	?

Table 1: Multimedia layers and files

[4] Sounds of South Asian Languages and Authenticity: We have seen above that the Sound layer is more basic than the Graphic layer. Sound also is heavily influenced by 'authenticity' of materials. Table 2 depicts the differences between printed and multimedia materials taking into consideration various features such as language variation. In SA environment, variation in language has a major influence on the selection of pedagogical materials. A typical SA language such as Telugu has both horizontal varieties (regional variations) and vertical varieties (social variations). Conventional printed materials would deliver the 'standard' variety. Multimedia materials can also deliver the 'standard' variety and additionally different voices of the standard variety as well as samples of 'other' varieties. To protect the learner from 'information overload', the designing part of the multimedia system will have to provide for delivery of the materials in a graded or terraced fashion.

	Printed	Multimedia
Language varieties	Standard	Standard and others
Delivery	Instructor	Instructor and/or system
Direct Interaction	Learner-Instructor	Less Direct

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Expandability	More static and less dynamic	Highly dynamic
Authenticity	Instructor-dependent	Potentially high degree of authenticity

Table 2: Differences in the contents of Sound layer in Conventional and Multimedia pedagogical materials

[4.1] Inherent Phonetic features of SA-languages: There are some phonetic features of SA-languages that have a direct bearing on the selection of materials that constitute the Sound layer. They may be examined at different levels.

[4.1.1] *Text-to-sound correspondence:* The usual understanding that SA-languages are spoken as they are written (and vice versa) holds good to a large extent. However, there are certain sets of letters across the languages that do not have a unique matching to the corresponding sounds that they invoke. For instance, in Telugu, the letters {th} and {dh} are usually mapped to [dh] in 'standard' pronunciation and to [d] in some other varieties of pronunciation. All such script-sound mismatch issues need to be sorted out right at the outset.

[4.1.2] *Allophonic variations:* Decisions have to be made about the depth of phonetic realization of the phonemes (which are matched to letters in the text). For instance, the four allophones of Telugu [j] can be collapsed into two groups at the initial level of teaching and the finer distinctions could be brought out at a higher level of learning.

[4.1.3] *Sandhi changes:* The changes that take place in the phonetic structure of larger chunks of language are highly complex in SA-languages. A thorough analysis of these changes resulting in a rule-set will form the foundation for identifying the sound files that have to be incorporated into the multimedia materials.

[4.2] A Checklist: We provide a basic checklist for creation of the sound layer in an SA-language. The whole process is divided into four sub processes as listed below.

   [A] Data identification:

   1. the number of language varieties to be considered

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2. the standard variety

3. the number of speakers to be recorded

4. portions of the text that will carry the sound layer

[B] Data Acquisition:

1. Equipment: Digital Sound Recorder

2. Machine setting: Sampling rate: 44.1kHz, 16 bit, Mono

3. Ambience: Studio or outdoor

4. Log: Strict logging of the whole event

[C] Data Processing:

1. Chunking of the sound files and creation of unique file for each portion (listed under A4 above)

[D] Data embedding:

1. Hypertexting of the files (generated under C1 above) with the corresponding text (listed under A4 above).

[5] Conclusion: Sound is an important component of multimedia pedagogical materials. While graphic layer can be treated as an optional one, exclusion of sound layer from a multimedia file will reduce the file to 'mono-media' status (almost equivalent to a conventional printed text book). While being such an important component of multimedia materials, sound is inherently non-discrete (analog). The whole process of identifying, acquiring, processing and embedding of sound is a complex one. Added to it, the peculiarities and complexities of sound systems of SA-languages and the match/mis-match between script and sound elements in these languages pose enormous challenges in building sustainable multimedia materials for these languages. We have evaluated some of these issues.

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SANSKRIT TEACHING: MULTIMEDIA METHODOLOGY AND TOOLS

Prachi Sinha[1], Girish Nath Jha[2]

1 Linguist, DIT-Sanskrit project, Special Centre for Sanskrit Studies, J.N.U., Delhi-67
psinhac@gmail.com
2 Associate Professor in Computational Linguistics, Special Centre for Sanskrit Studies, J.N.U., Delhi-67
girishjha@gmail.com

India can be considered as a language ocean. There are five languages families- Indo-Aryan, Dravidian, Austro-Asiatic, Tibeto-Burman and Andamanese[3] and around 1,652 languages and dialects spoken in India. When we take a look at 2001 census of India[4], we find that we have about 41% of speakers in Hindi, while Sanskrit though being of so much importance to the India's linguistic community holds less than 0.01% of total population reducing the exact numbers to mere 14,135 speakers. Though a tool like e-learning is fruitful to all the mediums, we find an urgent need to have a digital medium like e-learning to smoothen the ways of teaching.

This can be done manually as had been done since years. But as we can see, we cannot rely solely on these traditional ways anymore. We all are moving at a greater pace with the help of fast and smart technology in our hand, be it any field. Also the traditional process is not widespread and sometimes the same level of facility cannot be provided everywhere. In addition to that we have several inhibitions regarding this. Thus we find a suitable ground to propose e-learning for Sanskrit, which can help us enormously in combating all these problems. Now the question is what we mean by an e-learning tool. This is basically browser based online learning consisting of audio, video and visual medium presented in a comprehendible form to enhance learning. An e-learning tool should comprise of interesting illustrations and multimedia content in accordance with the need of its recipient. It should be highly

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[1] Linguist, DIT-Sanskrit project, Special Centre for Sanskrit Studies, J.N.U., Delhi-67, psinhac@gmail.com

[2] Associate Professor, Special Centre for Sanskrit Studies, J.N.U., Delhi-67, girishjha@gmail.com

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interactive and accept user's feedback and evaluations. It should be connected to Learning Management System. Through this management system we can track and manage the training

There are various advantages of e-learning over traditional way of teaching. First it can learn at the will of user's. There will be a flexible time and there is no risk of missing the classes if one is not able to come at the due time. Also one can learn and relearn if he/ she are not getting the matter properly. The interesting way of presentation will also lure the user to retain interest for a longer period. Also it will be economical than the classroom trainings.

Recent developments in content, medium and pedagogy impose new demands on teachers, especially in the area of on-line language teaching: content through access to the Web creates a tendency to be ever up to date; new media allow for new ways of interaction; and consequently, a new pedagogy is developing that harnesses these media for learning and teaching. Language pedagogy in schools has suffered from a general lack of newer pedagogy methods. So far, there is no research available on applying e-learning techniques for Sanskrit at the school level. The R&D being done at the Language Technologies Research Centre at the IIIT Hyderabad, Centre for Development of Advance Computing-Pune, National Centre for Software Technology-Mumbai, IIIT-Kanpur and Tamil University-Tanjavur have been very important. The group at C-DAC did some preliminary work on Sanskrit M (A) T with some work on processing of Sanskrit (DESIKA). The School of Computer and Systems Sciences, J.N.U-Delhi is doing Sanskrit learning online. Dr. Girish Nath Jha (1993) developed a subanta tutor in Prolog. The newly established Special Centre for Sanskrit Studies at J.N.U has been completed as ambitious multilingual Amarakosa project using Java as front end and SQL server as back end in a web format. The Vaakyapadiya e-text has been recently made available online on the centre'swebsite (http://www.jnu.ac.in/Academics/Special Centres/sanskrit/index.html). this centre is in the final stage of putting several other texts on Indian linguistic tradition online and has also started work on an interactive database system and search engine for the Vedas. Recently the centre is doing the project for R&D department on Hitopodesha and Panchatantra online with animation for the primary level and e-learning project for the secondary level.

The Current Scenario

The realization of such enormous benefits has led to multiple attempts by scholars worldwide. Now we have a huge number of e-content sources available on the web. The e-contents consist of resources like bilingual e-dictionaries, corpora and speech databases, web base educational systems. We take a look of few of them.

Major e-content resources[5]

Sanskrit Wikipedia

- Sanskrit wikipedia (Sanskrit medium wikipedia) http://sa.wikipedia.org

- Sanskrit wikisource (Sanskrit e-texts)

- Sanskrit wiktionary (Sanskrit encyclopedia)

- **Sanskrit wikiBooks (Sanskrit e-library)**

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[5] Jha, Girish N.,2008.

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Sanskrit digital libraries

- DLI project (http://dli.iiit.ac.in/) 1022 Sanskrit books (IISc, CMU,NSF,ERNET,MCIT)

- NSF funded, Brown Univ (http://www.sanskritlibrary.org/)

- Clay's project (http://www.claysanskritlibrary.org) JJC foundation, NYU Press

- INRIA, Paris (technical texts, tools)

- IGNCA (http://ignca.nic.in/sanskrit.htm _

Sanskrit e-documents

- Maharshi Mahesh Yogi (http://sanskrit.safire.com/Sanskrit.html)

- Avinash Sathaye - Sanskrit documents list(http://sanskritdocuments.org/)

- SanskNet Project, Tirupati Vidyapeeth (http://rsvidyapeetha.ac.in/)

- Oliver Hellwig (Univ of Berlin)

- Anand Mishra (http://sanskrit.sai.uni-heidelberg.de/)

- http://sanskrit.jnu.ac.in – 140 samples of ordinary Sanskrit

- ASR Melcote

- CDAC- heritage computing group

Sanskrit blogs

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- JNU students

- Others

Static e-learning resources

- Himanshu Pota (http://learnsanskrit.wordpress.com/)

- http://www.ee.adfa.edu.au/staff/hrp/personal/sanskrit/

- American Sanskrit Institute (http://www.americansanskrit.com/)

- Acharya, IITM (http://acharya.iitm.ac.in/sanskrit/tutor.php)

- Vasudev Bhatt (http://www.ourkarnataka.com/learnsanskrit/sanskrit_main.htm)

- Sanskrit Bharati (http://www.samskrita-bharati.org/newsite/index.php)

- http://sanskritbhasha.blogspot.com/

Dynamic e-learning resources

- Tutorials
- *Mahesh Kulkarni, CDAC Pune (Sanskrit CD)*
- *Sudhir Kaicker (http://www.sanskrit-lamp.org/_)*
- *Prof. G.V.Singh (CASTLE project of DoE)*
- *Peter Scharf*
- *Avinash Sathaye*

Language processing tools
- *Gerard Huet*
- *Amba Kulkarni*
- *Peter Scharf*
- *Girish N Jha*
- *Anand Mishra*

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New Dimension

Among all these impressive efforts, there will yet another important step forward in this direction. There will be carefully structured tutorials in Sanskrit for Indians and foreigners. Also we will be keeping in mind the interest of the user based on their age and their proficiency in the language. In addition, we will be adding interesting animated stories from various Sanskrit texts like *Panchatantra, Hitopadesha a Jataka* these stories will help to give rich information regarding culture and heritage of India.

Introduction

E-learning is basically computer based learning on any electronically delivered learning-video, audio. Today it has been synonymous with on-line learning or any time anywhere learning. It also browser based learning it is a subfield of Advance Learning Technology (ALT). E-learning uses multimedia computer technologies generally driven by web to enhance 'anywhere anytime' learning. A typical e-learning system,

1. is web based and is always 'on',

2. is highly interactive,

3. has multimedia content,

4. understands users' needs,

5. accepts user feedback and does evaluations,

6. works with a Learning Management System (LMS).

Language learning and linguistic pedagogy is crucial to not only meaningful learning in all the subject areas but also to the learners' emotional, cognitive and social development. Through e-learning mechanism we can teach basic components of Sanskrit

Primary Level

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The structure of primary e-learning is mainly focused for kids aged 4 years and above. Here the interface will be very lively consisting of lots of illustrations and multimedia content. In this form, instead of exercise or the ways to test one's proficiency we will have various interesting ways in forms of games to test levels of understanding. In comprehensive form, the Primary e-learning will be having information like pronunciation and writing of alphabets and the related script, classification of alphabets as vowels and consonants , formation of an *with a multilingual dictionary which will help language of various speakers to learn efficiently.*

Currently at *Special Centre for Sanskrit Studies*[6] we have developed the writing and pronunciations of alphabets[7] in animated form with the illustrations. The next level will comprise of addition of glossaries and other features as mentioned above. Our aim is also to be aware of the type of learner's i.e. whether they are aware of the script, the language and the medium in which they can be taught. At the preliminary level, we will try to be at the maximum basic level. The language we will be dealing with will be Sanskrit, Hindi and English. They will be working as-

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[6] Under Project funded by DIT

[7] Animation has been done by Rajkuamar Rana and conceptualization and dubbing by Prachi Sinha.

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This e-learning tool has been developed as a result of a grant from DIT, program of Ministry of Information Technology. Here the system will also get enhanced with the tools developed by our research scholars. At primary level we will be concerned with the elementary use of our software. This helps us to know better about *Sandhi* by training the users for the basic sandhi or the conjugational process that happens during the formation of an *akshara* and a word. Progressing to the next level we will be need help of *Sanskrit Sandhi Generator*[8] which generates sandhi from two give words?

Sanskrit Verb and Subanta Generator

This is complemented by *Sanskrit Verb Generator*[9] which can give verb forms in all ten tenses and aspects. It also comprise *of Subanata generator*[10] helping the user to be aware of various forms of a pada and thus facilitating the process of learning.

Secondary Level

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[8] Developed as a result of the dataset prepared by Sachin Kumar and Diwakar Mani (research students of the center under the supervision of Dr. Girish Nath Jha) and later by Rajneesh Kumar Pandey (M.A. student of the center). The Devanagari input mechanism has been developed in Javascript by Satyendra Kumar Chaube, Dharm Singh Rathore and Dr. Girish Nath Jha.

[9] This application is being developed as a result of the MA and PhD students, of the centre and Sudhir Kumar Mishra under Dr. Girish Nath Jha

[10] This application is being developed as a result of the dataset prepared by Subhash Chandra and Diwakar Mishra (research students of the center under the supervision of Dr. Girish Nath Jha). The programming in Java/JSP has been done by Dr. Girish Nath Jha, Diwakar Mishra and Vertika Verma.

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Apart from this in the secondary level to this mode of learning, we can provide a larger variety of information, if one wants to know they can have the links they can click on. Secondary level will be compromised of language, comprehension, the exercises related to them and the evaluation of the performance. Over all each alphabet will be packed with semantical, syntactical. Phonetic and morphological information helpful for advanced learners

In addition to these there will be a kind of demonstration consisting of following to assist in general awareness of Sanskrit like

1. Every day conversation in usable forms, such as

   - Greetings

   - Home domain

   - School domain

   - Official domain

   - Other suitable domains as the research evolves

2. Shlokas/suktis

   - Selection of shlokas/suktis for younger kids with audio and translation (language to be decided)

   - Will have lessons of day to day life

Multimedia content

To make the learning more interesting we will be coming up with the animated form of various stories .In India we have ample of stories in form of *Ramayana, Mahabharata, Pancatantra, Hitopadesa, Jataka* stories and so on. Our plan is to spread this rich knowledge by the medium which is light and fun filled.[11]

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[11] Conceptualized by Prachi Sinha and Dr. Girish Nath Jha , animated by Rajkumar Rana and dubbing done by various students of the SCSS, JNU.

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This animated story has been developed as a result of a grant from DIT program of Ministry of Information Technology.

Conclusion

The authors have attempted to present an e-learning approach to the teaching of Sanskrit and its heritage for primary and secondary learners. The need for such an effort for Sanskrit is more pressing than any other language in India due to the importance of Sanskrit in India's cultural gabric and the fact that there has been significant reduction in the number of Sanskrit speakers. The paper also presents some of the applications developed and research done in this area at the special center of Sanskrit studies, JNU, and hopes that today's digital India will pay more attention to save this very important language.

Majority of persons being multilingual instead of reducing the scope of technical medium increases that as now we need the more of the devices to aid us in knowing other languages in addition with our second and third languages. This also brings the so called diverse socio-cultural backgrounds to a single platform. This also will help us in spreading the information to a much wider scale. A speaker of Tamil can easily comprehends what a speaker of Punjabi is trying to explain him. Hence we can say that the right time has come to bring out and experience new ways of learning.

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A MULTIMEDIA BASED SELF-CENTERED LANGUAGE LEARNING SYSTEM FOR SANSKRIT

Pravin Pralayankar, Ph.D.
AU-KBC Research Center
MIT Campus of Anna University
Chrompet
Chennai
Tamilnadu, India
p.pralay@gmail.com

1.0   Introduction

Like any other field of modern life, the rise of technological development in the field of computer has influenced the educational system to very large extant, resulting into abundance of research on educational technologies ranging from motion pictures to computer based tutoring system. Now a day we can see many computer assisted special programs designed for almost every educational domain. The language teaching, especially the second language teaching is not far behind. With the rise of multimedia and e learning today we see a more scientific and learner friendly method of language learning. Eventually this has proved to be more effective than teacher based mode of instruction.

2.0   Technological Development in Language Learning

Technological development in the field of language learning, especially second language learning refers to the use of multimedia and e learning approach, which are learner- centric in nature. Let us take their salient features and see the way(s) in which language learning is regulated within the technological framework of multimedia and e learning.

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2.1 Multimedia and Multimedia Learning

The term multimedia (multi-media) is commonly used for the different media used to convey information; text together with audio, graphics and animation. Richard Mayer, professor of psychology at the University of California, Santa Barbara, defines multimedia as presentation of content that relies on both text and graphics. This definition, in my opinion, is a good start, but it doesn't provide deep enough insights about the essential factors that can make multimedia effective for learning. Mao Neo and Ken T. K. Neo, faculty at Multimedia University in Malaysia, extend this definition. They say that multimedia is "the combination of various digital media types, such as text, images, sound, and video, into an integrated multi-sensory interactive application or presentation to convey a message or information to an audience." So it is an integration of multiple forms of media, including text, graphics, audio, video, etc.

Mayer [2001] describes multimedia learning as an umbrella term used to describe different cognitive theory of multimedia learning like, modality principle, redundancy principle, spatial contiguity principle, temporal contiguity principle, coherence principle, individual differences principle etc. Proposed by Paivio and later applied to multimedia by Richard Mayer and his associates, modality theory believes that verbal information if encoded auditory, reduces the cognitive load of the learner and they are better able to handle that incoming information. According to redundancy principle; students learn better from animation and narration than from animation, narration, and on-screen text [Paivio, 1971]. Spatial Contiguity Principle believes that students learn better when corresponding words and pictures are presented near rather than far from each other on the page or screen [Mayer, 2001] while temporal contiguity principle is based on the assumption that students learn better when corresponding words and pictures are presented simultaneously rather than successively [Mayer, 2001]. According to coherence principle students learn better when extraneous material is excluded rather than included [Mayer, 2001]. The individual differences principle believes that design effects are stronger for low-knowledge learners than for high knowledge learners, and for high-spatial learners rather than for low-spatial learners [Mayer, 2001]."

On the basis of above theories we can say that within multimedia based cognitive method we do not have a single principle and similarity between them are that they all are leaner centric. But at the same time we can say that in Multimedia Learning (ML) the learner are engages in three important cognitive processes, selecting, organizing and integrating. This can be seen below:

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- Selecting, is applied to incoming verbal and visual information to yield a text and image base respectively.

- Organizing, is applied to the word base and image base to create a verbally-based model of the to-be explained system and visually-based model of the be- explained system.

- Integrating, occurs when the learner builds connections between corresponding events (or states or parts) in the verbally-based model and the visually-based model.

2.2   How Multimedia Works in Learning

A well-designed multimedia can help learners to build more accurate and effective mental models than from the text alone. Alessi and Trollip describes how effectively designed learning environments (including multimedia learning environments) effects include these four elements:

- Presentation of information

- Guidance about how to proceed

- Practice for fluency and retention

- Assessment to determine need for remediation and next steps

3.0   Development of S-to-S

In the beginning, let me make it very clear that because of this very fact that people learn in many different ways and at different times so **no single e-learning method is best for every learning need.** You will need to use several e-learning technologies as well as traditional learning methods. A blended learning program combines e-learning and traditional learning methods. Blended learning can provide the convenience, speed and cost effectiveness of e-learning with the personal touch of traditional learning.

3.1   Designing S-to-S

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In designing S-to-S, the purpose kept in mind is not just to incorporate multiple media, for language learning but to use each medium to its advantage so that the potential learning is greater and more effective than using single elements alone.

Instructional Purposenstrctional Purpose	Media Types and Tools
Navigate	Buttons, links, image map, site map, table of contents, navigation tree, search, help
Document (narrate / Explain)	Text (explanation, instruction manual, text of narration)
Show Models	• Photo • Diagram • Flowchart • Chart • Graph
Show changes over time	• Animation • Video • Simulation

3.2   Feature of S-to-S

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The development of S-to-S is based on the proved finding that multimedia instructions can enhance individual's problem-solving skills and improve learning effectiveness (Carville and Mitchell, 2000; Gross, 1998). So a mixture of text, graphics, animation, audio and video will be core component of S-to-S. Other components are:

- Interactivity: An instructional strategy that helps a learner practice what they have learned.

- Book-marking: Lets the learner stop the course at any time and restart it from the same point.

- Tracking: Report the learner's performance within a course to a Learning Management System (LMS).

- Simulation: Providing practice with a mock-up of a real system.

- Search: Search through a course to find information required to complete a task.

- Notes and Highlights: Mark one or more parts of a course that contain the most important information.

- Discussion group: to provide expert answer to a large group of people because a single answer to a common question can benefit many.

- Content Management: this will take care of the support provided by the S-to-S. This will include:

    - A library of media elements

    - Templates

    - Development tools

    - Project management tools (assignment, completion reports)

    - Quality assurance tools (reviews, approvals).

- E-learning facility: it is learning via the computer and internet. Although it covers a wide range of applications and processes, such as web-based learning, virtual classrooms, computer-based learning, and digital collaboration, following e learning facilities will be provided:

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- E-training: for acquisition of practical knowledge, skills used in carrying out specific tasks.

- Learner-Led e-Learning: consist of the delivery of learning experiences to independent learners through web pages.

- Facilitated e-Learning: adds the benefit of having an instructor guiding the learner. This requires the use of e-mail, discussion forums etc.

- Instructor-Led e-Learning: makes use of technology to deliver traditional classes real-time. This is done via the use of teleconferencing, audio conferencing, chat, or even via the telephone.

- Performance Support: provide users task guidance and support when they need it (just-in-time). This is done via the use help, reference information, guided instruction, and searchable banks of subject matter expert advice on how to perform a task more effectively.

- Instructional videoconferencing.

3.3   Challenges before S-to-S

To use S-to-S successfully, you will have to overcome some challenges. Many people need external motivation to take and complete a course of study. Since S-to-S can be offered without a teacher and without a required completion time there may be many learners who will not enroll or complete the course work. *Secondly*, some people need help to understand the learning material presented in a course. Since self-paced courses can be offered without teachers, those people may fail to learn. You will need to provide experts who can answer their questions.

3.4.   S-to S at Present

At present all the aspects of S-to-S is not available as it is still in its infant stage. In this starting stage, I have prepared a list of grammatical terminology of Sanskrit and tried to describe them from English and

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Hindi perspective, by giving example from these languages, so that learner can understand the Sanskrit grammar better.

Based on my personal experience as teaching Hindi as a second language to non-native speaker of Hindi, where I bought a grammatical terminology of English and Hindi at one place and designed English influenced grammatical explanation of Hindi grammatical terminology, I am of firm belief that this will give satisfactory result to Sanskrit learner within a short period of time. This is a completely new direction in this area where we see that most of the Sanskrit learning; e learning programs starts with teaching Panini. At present grammatical terminologies taken for learning are:

Under Verb section:

The Verb, An introduction to the verb √as 'be' Verb inflection; active and middle forms of the present tense, Present active participles in –ant, Present System: thematic and athematic conjugations, Present middle participles, Past Participles, and Future Passive Participles, Present Middle Participle, Past Participles, Future Passive Participles, The Future System, Perfect System: Perfect Tense, Moods of the Perfect System, Perfect participle, Perfect active participles, Perfect middle participles.

Introduction to the Aorist System: Aorist Tense,   Simple Aorist, Reduplicating Aorist, Participles and Moods, Aorist Imperative, Aorist Subjunctive, Aorist Optative, Aorist Passive.

Mood: Imperative, Imperfect, Subjunctive, Optative.

Derivative verbs: Causative, Intensive, Desiderative. Denominative

Under Noun Section:

Noun, Nominal stems in *-i* and *–u*, Nominal stems in *–a,* Nominal stems in *–tra*, Stems in *-as*, *-is*, and *–us,* Secondary stems in *-a*, *-ya*, and *–tva,* Secondary stems in *-vant* and *–mant,* Secondary feminine stems in *–ī* , Nouns in *-man*, *-an* and *–van,* Primary stems in -ī and –ū, Primary stems in –ā, Nouns of one syllable ending in consonants, Compounds with irregular double accentuation, Simple nominal compounds

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Under Others:

Pronoun: personal pronoun, demonstrative pronouns, Interrogatives, Relative pronoun yá and use of yát as conjunction.

Adjective: Adjectives participial in form: mahánt and brihánt, Comparative and Superlative, Adjectives with pronominal declension.

Prepositions and Case, Word order in the sentence, Numerals, Negation

Similes: iva and ná, iva, va, ná 'like', yáthā and yathā.

.4. Conclusion

The S-to-S system has not come to public domain for Sanskrit language learner and still it is in at primary stage so at this point of time, I am not able to say how people will adopt it but so far the views given by the colleagues are very encouraging. I hope to see more and more comments and suggestions so that I can improve the system in right direction.

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ENGLISH LANGUAGE TEACHING & THE INTERNET

V. RAJASEKARAN & A. PALANIAPPAN

K.S. RANGASAMY COLLEGE OF TECHNOLOGY
RSKARAN2003@YAHOO.COM PAPPANCHANDRU@GMAIL.COM
DEPARTMENT OF ENGLISH, K.S.RANGASAMY COLLEGE OF TECHNOLOGY, TIRUCHENGODE - 637 215
TAMILNADU, INDIA

Introduction

The Internet is very useful for teaching English. Teachers can use it for gathering information for their classes, including teaching plans and materials for classroom use. They can subscribe to mailing lists related to TEFL/TESL, and exchange information with other teachers. They can subscribe to electronic journals or newsletters either by e-mail or using the World Wide Web and keep up with new trends of English teaching, finding new or interesting publications. They can consult with publishers on teaching materials.

There are a wide variety of ways that the Internet can be used in the classroom. Teachers can organize "keypal" exchanges, and students can exchange letters with their keypads and have the experience of corresponding with people from all over the world. Students can use a mailing list, IECC-Survey, to conduct surveys for class projects. They can subscribe to student lists to exchange ideas with other students around the world. There are many learning materials on the World Wide Web, and students can use them to study English. They can read news in English using either by e-mail or on the World Wide Web. Students' newspapers or newsletters can be posted on the World Wide Web.

Using the Internet for English teaching is new, and there are few books and papers on the subject, though there are many resources on the Internet. We need to explore ways to find materials on the Internet and experiment with using them to improve our teaching. This article gives some information about using the Internet.

The Internet for Teachers

Teaching Materials and Teaching Plans

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Teachers can use the Internet for gathering information. For example, Martin Luther King is the topic for a class, you can use search engines*1 to look for information related to him. There are many sites that have information about him, including ones with his photos, information about his life, and the texts of his speeches. There is a huge amount of material for listening, reading, writing, grammar, vocabulary, and culture.*2 you can select appropriate materials for your students' interests and level of English proficiency. There are some teaching plans which include materials may help you to teach your students.*3 It is a good idea to go over those materials when you have free time, and classify the ones that interest you according to their topic or how you might use them. Since there is a huge amount of material available on the web, there should be many useful materials for your students, if you look for it.

Useful information for classes you obtain on the World Wide Web is easy to present to the class, if you have a computer which can access the World Wide Web and a large monitor or device to show it. The World Wide Web makes use of multiple media, and many resources are very realistic, colorful and attractive.

Professional Resources

Teachers can subscribe to mailing lists or electronic journals and read journals available on the web.

Lists.

There are many lists for TEFL/TESL, but the largest one is TESL-L (listserv@cunyvm.cuny.edu). You can obtain concrete information about it in "Using TESL-L for Research and Teaching English," (http://ilc2.doshisha.ac.jp/users/kkitao/online/list/lis-tesl.htm). It is good to subscribe to TESLCA-L with TESL-L, since you will receive information related to computers, e-mail and the web.   In Japan, JALTCALL and EFLJ are two fairly active lists that discuss English teaching in Japan. The IECC has several mailing lists, and teachers can participate in various projects, look for key pals for their students, or discuss intercultural issues for teaching. There are some specific mailing lists for second language learning or acquisition (SLART-L) and "writing and computer" (WRICOM).

By subscribing to those lists, you can get useful information on conferences, new products, materials, etc., but if you really want to benefit from a list, YOU have to participate in discussions. Ask questions, if you want information. Bring up issues that concern you, and find out what other people think. If you just wait until something useful drops into your lap, you may wait a long time. React to what other list members post, and answer their questions if you have the information. Also if you subscribe big

lists or many lists, we strongly suggest setting them to digest mode, so that you receive only one file for each list each day with all the messages for that day, rather than many individual messages.

Keypals

Teachers can arrange keypal experiences for their students, and the students can exchange e-mail with key pals individually or as a group, like corresponding with pen pals. IECC is a good mailing list to find key pals for K-12, and IECC-HE is good for university students. There are of course other places teachers or students can find key pals.*8

Survey

Students can subscribe IECC-Survey to conduct their own surveys for class projects. If they are interested in wedding customs in certain countries, they can make questionnaire to ask various questions about wedding customs and post it to the list. They will probably receive some answers, and they can use them as resources for their projects.*10

Student Lists and Kid link

Students can subscribe to student lists. There are ten different lists, and students can participate in general discussions for low and high level English students, or discussions on business, economics, current events, movies, music, sports, science, technology, and learning English.*12 You can give students assignments to obtain certain information on lists, and students can bring the information back to the class. Just telling students to subscribe to these lists may not work well. Student Lists are for college students, but there is Kid link, which is for teenagers. Teachers need to take greater care for orientations, since students are younger and their English proficiency is lower. Kid link is at http://www.kidlink.org/.

Materials

There are many learning materials to help students to study English. Some of them are just traditional drill types, but some are very creative and attractive, so that students will have higher motivation to learn English. Of course, you can make your own materials and post them on the web. Simple web pages are easy to make, but complicated and artistic web pages are not only difficult but also time-consuming to make.

Journals and Newsletters

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Students can read journals or newsletters for students of English. Many of them have readings and fun activities to do as well as useful information. It is worth investigating these and making plans for what your students read, and how you can use the materials for your class.*13

News

Students can get news from various sources on the Internet. One source is of news by e-mail is Daily Brief, a daily summary of U.S. and world news. The Daily Brief is a 2-3 page news summary sent out by e-mail every weekday morning. Included in the Brief are summaries of major news events that occurred during the 24 hours prior to distribution. To subscribe to the Daily Brief, send an empty e-mail message to incinc@tiac.net with "db" (without quotation marks) in the subject line.

Teaching the English Newspaper Effectively (http://www.aitech.ac.jp/~iteslj/Lessons/Kitao-Newspaper.html) is useful, if you are thinking about using English newspapers to teach English. It has some exercises which you can use with any newspapers.

Many Japanese newspapers have English news on the web. Newspapers. TV and Radio in Japan (http://ilc2.doshisha.ac.jp/users/kkitao/online/www/teij.htm#news) has many links to Japanese newspapers, as well as other mass media. They are much easier for Japanese students to read, since they are familiar with the contents.

It is possible to read hundreds of newspapers in English around the world through "News Sources" (http://ilc2.doshisha.ac.jp/users/kkitao/online/www/referenc.htm#mass). You can read not only major newspapers around the world, but also countless minor newspapers as well.

Web Pages

A simple web page is fairly easy to make. It can be accessed by anyone in the world. Thus, it is a good device to publicize information, for example, making newsletters for students, local people or even people from all over the world. We show how to make simple web pages at http://ilc2.doshisha.ac.jp/users/kkitao/online/www/kitao/int-www.htm. We have made web page that serves as a bulletin board to present class syllabi, announcements, homework, reading materials, exercises, etc. We have used them to present students' compositions to show to the class.

Conclusion

As we have shown, the Internet, both e-mail and the World Wide Web, has a great potential to change our language instruction and students' learning of foreign languages. The Internet itself is absolutely free to use if your school has terminals connected to it.

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There are many resources on the Internet already, and teachers and students have tried to use them in various ways. However, there has been little research done on how to use the resources most effectively. We need to continue to investigate ways to use the Internet for better language.

QUEEN'S ENGLISH

Vasanthi Ranganaathan
Management Consultant & Corporate Trainer
vasanthiranganathan@hotmail.com

CALL

Computer Assisted Language Learning is evolving as a new branch of learning and teaching methodology. The focus of the paper is "How well can CALL be used to teach Spoken English?" The program design for spoken English using CALL is called Queen/s English. This paper discusses the possibility of teaching spoken English using computers and web based technology.

Computer with internet connection is required, at both ends. Webcam can be of great help at the teaching end, in order that the teacher is visible. While teaching spoken English with webcam computer assistance, learners can watch lip movements. Lip movements are an essential part of pronouncing sounds such as 'o, v, w'

There has been an increase in vocational training and learning throughout the world. With the spread of globalization has come the increase in use of English as the language of international communication. People are using English in large numbers in more and more occupational contexts. Students are starting to learn and master general English very early in their life. Even in English speaking countries governments are launching initiatives to help economic migrants obtain the practical English skills necessary to function in the workplace. For example, the new ESOL for Work Qualifications in the UK is designed to help employers and employees access courses which offer them the functional language skills required across a variety of employment sectors.

CALL facilitates a virtual classroom where the teacher and learner are present at the same time, though they may be in different locations. It saves time normally spent in traveling to a place of learning.

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Learning is possible even across time zones. Internet access should be available in all learning locations. Time is set up at the convenience of all involved

Location is not restrictive. Both teacher and learners can switch on their computer , avail net connection facility , anywhere even in a car parked by the roadside. With computers holding charge for two hours or more and electricity connection available in the trains, one can teach or learn while travelling.

Communication Skills

In the area of receptive skills, listening and reading, the effect of technology has been tremendous. The Internet has provided a vast range of material, offering extensive opportunities for exposure to authentic materials, both audio and text.

The influence of technology on the productive skills of speaking and writing has been comparatively less. Also, if you wish to improve fluency, many students would argue that nothing would be better than a face-to-face language lesson or a discussion class with the teacher.

Can the same be said about taking a Spoken English fluency class in the virtual world?

1. Not all learners wish to learn from one another. They would prefer a teacher than a peer to correct their language.

2. If the teacher in a virtual class has to correct participants during the class very little learning would take place due to the interference in the structure of the class.

3. What could be the manageable size of a virtual class?

These constraints were in my mind as I designed my virtual class. The entire module, Queens English consists of 20 sessions of 3 hours each or 60 hours. The focus is on spoken skills. Language is English. I present the design with samples from the 1st lesson.

A. Repetition ensures listening

while the teacher speaks the same things again and again, the learner listens and while repeating is trained to listen to self. Practice of the sound or repetition by the learners is important to help learn the

appropriate pronunciation. Let us start with repeating sounds in the beginning, middle and at the end of words.

1. ai as in light, fight, kite, sight, might, plight, right

   ai as Aisle, ice, eyebrows, eye lashes, Iceland

   ai as Try, sigh, cry, ply, die, dye, buy, by, fly

2. ei as in state, played, Case, place, trace, mace, daze

   ei as eight, ace, age, ape, aging, alien

   ei as Tray, play, say, day, gay, way, may

Repeat for yourself. Think of more words with similar sound and read aloud. Write them down. Are the sounds correct? Listen again. Think of more words.

Ei	Ai

B. Structure

Make sentences with all the words you have learnt today and say them again and again. This will help the learners in the virtual classroom, listen, say, repeat, make more words , practice and learn.

C. Grammar - Adjectives - Description – Introduction, Vocabulary

It is important to introduce yourself, at all times. If you are applying for a job, you write an application describing yourself. All words used for describing are adjectives. Here is a list of words which are used for describing. These words are adjectives.

Active	Dark	bright	Fair	Cheerful

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Gloomy	Tall	Short	Ugly	Small
Handsome	Beautiful	gloomy	Sad	Happy
Helpful	Plump	Monotonous	Selfish	Thin

I am tall, dark and handsome.

She is

Sandra is

Kathiravan is

Look at the words in the table. Choose words which describe you. What are the occasions that have led you to believe that these words describe you. Narrate to a friend. Keep learning adjectives. You can present yourself better

D. Motivation

a. Self esteem – Self esteem is a good motivator, Very often it is the lack of self esteem which hampers confidence levels. Helping the learner believe that he can actually speak in English is an important aspect of getting him to learn.

b. Practicality – practical use of language has become an essential part of communicative language. Today there are several texts which can be used as material for these classes. Practicality not only helps learners use the language in places other than the classroom, but it also motivates the learner to keep going on his own. It is like learning how to fish rather than getting one. Queen's English lessons allow you to practice in the real world. It is not a set of sentences that you memorize and repeat.

Factors which are important while teaching using a webcam, a computer and a headphone

Should the teacher be on the screen all the time? In a real classroom, the presence of a teacher is a requirement. In a virtual classroom it is not so. The screen can have video clips, texts, power point presentations, material written on the pen tablet and there is also a provision to invite a participant on the

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screen. It is web based teaching which allows the teacher to be present but is not on the screen all the time.

No recorded cassettes are used. This will ensure the personal touch, the availability of both the teacher and learner at the same point in time. If interaction is required, we may use a pen tablet and write, or have icons which can help us ascertain the learners' points of view.

It is not only talk, present, converse, read and so on. Power point presentations on key factors are made and loaded in the computer. Since it takes a little time, it is necessary to keep them ready and accessible. These are displayed as and when required. Visuals leave better impressions compared to spoken words. Web cam provides a combination of screen and talk. It is like our chalk and talk method that has always been practiced by teachers. Hence teachers will enjoy teaching through CALL. It is better than the chalk and talk methods since all the material can be stored. It provides a visual tool to the learners even if they are away in distant locations. Even if the sound takes a little longer to travel, the visual is available immediately for the learner. This visual can be used for learning and saying the words.

The program can be standardized. Standardization ensures scalability. More teachers can be trained to use the same format and resources. Where class size is very large, we can have several sessions in small batches since both time and travel are not roadblocks.

Use of slides – A few slides used in Queens English. The 4 Cs stressed as part of the learning model are,

Confidence

Competence

Context

Conversation

Confidence

Comes from within you

Look into yourself, you will find a small baby,

Once afraid of the dark, but now can walk in the darkest lane

Not knowing how to eat once but now the parents complain that he does not stop eating

Not knowing how to walk once but can now go trekking on the mountains and dance a salsa

Competence

Comes only with practice, and no there are no short cuts

Comes with trying the language in new situations

Comes with listening more to English

Comes with speaking in English

Comes with reading newspapers in English

Context

You will make conversation in real life situations in a context you are familiar with. You will converse with people you are familiar with, your friends, family and create a neighborhood where you can confidently practise your communicative language in daily life situations.

When you book a ticket across the counter

When you buy a dress

When you ask for information

When you give directions

When you plan an outing

When you plan a menu for the day

When you talk to your friend about attending a party

Conversation

Greetings, how are you today?
Very well thank you, how about you
I would like to buy a saree for you, What color would you like ?
Something soft, I like all colors but prefer green
How about polycotton or would you like a particular fabric ?
I like pure cotton, traditional wear, something that is not costly, maybe less than Rs. 300

Use of links from movies – Lucy Show, Rajnikanth

Links from the movies may be used to convey the importance of what you are attempting to share with the learner. I use a Lucy show piece for 3 min to help the learners understand the importance of opening one's mouth widely in order to pronounce properly. This is also true of carnatic music where the most renowned vocalists, open their mouths wide. Using these clips helps learners understand the importance of lip movements. It will also help in imitating and removing inhibitions to learning spoken language and practicing the sounds right.

The teaching methodology is use of Choral drill. The assumptions are that,

Hearing the sound and mechanically repeating the same will help learners develop the sense of sound. Repetition and practice will develop unconscious competence. Speaking right without thinking is of great importance. All thinking is on the feet, this given an aura of confidence and competence. When there is more than one learner at the venue, pair work can also be facilitated. Choral drill allows you to learn at your ease in your own pace and space.

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Student control

The design of the program needs to be explained clearly, a number of times and in many ways, explained many times in many ways, during the entire program, and in all the sessions. Control of the class in a computer assisted learning session is tough. If the learners found the session boring or demanding, they could switch off the teacher in the literal sense of the word. The demand on the teacher to make the session interesting is considerable.

Learner motivation is significantly important.

Here is the introduction to the class plan

There are seven days in a week. What happens then on a Tuesday, Thursday, Friday, Saturday and Sunday? We practice what we learn. At the end of every lesson, there is a practice session, specifically designed to allow for practice of the inputs given during the lesson for the day. Down load the lesson and Do practice.

The next session will open with a review of what we learnt in the previous class. Those who can really spare time will go to the dictionary and other resources and learn more. Those who want to see themselves speak good English will also find time to learn more than what is prescribed. But I am sure all of you will do what is required because we are getting together for 16 hours to earn English and to speak better English.

Some aspects of language learning in terms learners can actually understand. There is logic or reasoning required to learn a language. The logic will help increase the responsibility for learning on one's own, using technology. Here is the input.

Head - Your reasoning to logically believe that you can actually speak in English – remember you are in a country where many know English as a 2nd language. You have TV and Radio channels which air English programs. You have print media in the English language.

Heart - There is heartfelt need for knowing something. Even when the head says no, it is the heart that convinces one of the possibilities of learning and doing. You have a heart that tells you, you can do it. Here is a PPT.

Want – want is much greater than can. You must want to learn.

To reach somewhere you can be or want to be, you must start somewhere and make a small beginning,

To convey, you must speak well

To impress everyone, you must speak well

You must want to speak in the English language, communicate and reach out to others. If you have the head and the heart in place, content is in everyday life.

Spoken language is about sound

Spoken language is about voice control

Spoken language is about pauses

Spoken language is about intonation

Spoken language is about appropriate vocabulary

Spoken language is about opening your mouth wide and saying the letters and words properly

If they have learnt the words, how do they learn how to form sentences? Make some sentences using the words that have been introduced for practising a sound, in this case, ai

I like to sit

I like to fly kites

I like my kit

I dislike my kit

I cry like a kid

I eat a slice of bread

I sit in the kitchen

I went to the site

What is the learning at the end of the session on pronunciation? What did you notice?

The sounds do not depend on the spelling.

It is interesting to think of new words, words which are spelt with i but pronounced as ai

You can form many sentences with the words, like I have

Maybe you can even write poetry. Start with saying the sentences along with me

There are a few things that teachers and trainers need to keep in mind when teaching and learning spoken language using computers.

It is important that the teacher has proficiency or competence in the use of technology. A number of practice sessions are required to help the trainer/ teacher develop a level of competence.

Confidence in using technology – it can come only with practice

Lessons have to be written to allow simple models of delivery

Repetition of key points is required at various times during the session

Responses can either be through the written or spoken modes. One needs to call for minimum kinds of responses in order to ensure that the content intended for delivery goes through. Eliciting responses or interaction depends on,

Size of the class

Location of the learners

Learners located in the same space with a big screen

Learners located at various geographical areas, (Chennai, Japan, Guhawati) with their desk tops or laptops connected through internet

Let us look at an expert point of view

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Controversies in using technology in language teaching - submitted by Pete Sharma on 8th April 2009

"In his first article for Teaching English, Pete Sharma considers some of the controversies surrounding the use of technology in and out the classroom.

'Interactive whiteboards are great!' 'Interactive whiteboards are expensive!' There are many controversial issues in the area of technology-enhanced language teaching. This article explores some of these areas of disagreement; it concludes by revisiting four key 'principles' which can help teachers incorporating ICT (information and communication technology) in their courses.

Terminology
Terms can have different definitions. Mouse? For example, the phrase 'blended learning' means different things to different people. In language teaching, the classical definition is a combination of face-to-face classes (same time, same place) and web-based training. However, this definition excludes using CD-ROM, since they are not delivered over the internet. Let us for the purpose of the paper define blended learning as web based learning, face to face where possibilities exist for using web cam.

Connotation – learning in a virtual classroom

The students who love the classroom do not contribute to the knowledge-building, they are learners.

The students who spend their time on-line hate crossing the busy city to attend the face-to-face classroom sessions.

The course ends up pleasing no-one, if there are delays at the teacher or learner end!

So, when someone mentions the 'virtual' classroom, what connotation does it have? For one person it's exciting; for many, it's scary.

Using Technology for different areas of language study

While technology has had a major influence on the teaching and learning of languages, a lot of disagreement surrounds areas such as the teaching of grammar, vocabulary, language skills and testing.

Grammar

The increase in the number of interactive exercises on CD-ROM and the web has undoubtedly benefited the analytical learner. Students can practise 24/7 and receive instant feedback. However, many teachers and material writers would argue that this kind of practice is based on an outdated, stimulus-response methodology. These grammar exercises 'skewer' the language, so on-line practice focuses on 'crisp' areas of language at the expense of 'fuzzy' areas. Here's a good example of this distinction:

Crisp: Is 'I went there': (a) Simple past? (b) Present perfect?

Fuzzy: What's the difference between (a) 'I did it' and (b) 'I've done it'?

Vocabulary

Arguments are currently raging about the use of electronic translators. These provide many benefits, allowing students to cross-check between bi-lingual dictionaries and mono-lingual dictionaries, and encouraging them to review language. Yet, when used for production, they seem to encourage the selection of the wrong word in English, and teachers can quite easily spot an essay written with the help of one of these small machines.

Testing

There is an explosion of on-line testing in the last few years. Such test materials use the same formats as multimedia materials: gap-fill, multiple choice etc. Is this a match made in heaven? Some would argue that on-line tests actually favour students who use computers, and ignore the assessment of 'affective factors' such as personality and learner type.

The digital divide

Almost no other technology symbolizes the 'digital divide' as much as the interactive whiteboard (IWB). Those with access to this technology are currently exploring how best to exploit it in the classroom; detractors suggest it can be a way of going back to 'teacher-centered' approaches. In some parts of the world, using such technology is a distant dream.

Theory vs. practice

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This is a world which is driven by technology. The innovators innovate, and later, pedagogy plays catch-up, as teachers try things out. The world of theory (of evidence and research) is, arguably, lagging behind what is happening in the classrooms. In other words, if you wait for a case study to justify whether or not Twitter has value, you may be waiting a long time, and the technology will have moved on by the time the research has been done."

Keeping the above observations by Pete Sharma in mind, the following conclusions are made.

Separate the role of the teacher vs. technology

It is important to understand the respective roles played by the teacher and the technology in the learning process. Teach using emerging methodologies. Methodologies surely demand teachers to learn and acquire new skills. Whenever a new technology emerges (such as, say, pod casting), it is important to go beyond the 'wow' factor and think about the pedagogical reasons for using it.

Let us look at some observations in the Eltecs sites "Technology is part of our Argentinian students' lives and we can't put off any longer taking profit of it in our teaching English. However, I am aware I need to work more on my skills to deal with it, before working together with my students and using it as one more teaching-learning resource. Thanks Eladia Thanks for sharing this thought. One word I often use in connection with technology is 'appropriate' - an appropriate use of technology. This seems to echo what you say about relevance.... I notice with envy that you work in Brazil - I was lucky to be in Sao Paolo to do the technology plenary at LABCI-ABCI two years ago. Many teachers were very technology-savvy - a most exciting trip. Good luck with your teaching! Pete "

Use the technology to complement and enhance what the teacher does 'It's not what it is, it's what you do with it.' (Jones 1986) So it is not the interactive whiteboard per se which could improve the learning experience, but how it is used.

Conclusion

Queens English is designed keeping three factors in mind,

Teacher

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Learner

Technology

Some of the questions that helped us design the program are,

What do students need to do with English?

Which of the skills do teachers need to master and how well in order to participate in CALL or computer assisted language teaching?

Which genres do they need to master either for comprehension or production purposes?

How specific and detailed are the language, skills and genres that the learners need to learn?

Curiosity - The teacher should be interested in the subject area and want to learn more.

Collaboration - Teachers should seek out subject specialists, show them their work and ask for their feedback.

Confidence will grow as teachers explore the new subject matter, engage with subject specialists and learn from their learners.

Use contexts, texts, situations from their subject area.

Use authentic materials and make the tasks as authentic as possible.

Motivate the students with variety, relevance and fun.

Take the classroom into the real world and bring the real world into the classroom.

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On-line Teaching and Testing of English Grammar at College Level

R. Gowrishankar, Ph.D.
Mrs. Karpagam & S. Sukumari

ENGLISH LANGUAGE IMPORTANCE

English is the most widely spoken language in the world and it stands out as the most popular language on earth. "English is being spoken by about 280,000,000 people as a first Language ; by some 120,000,000 as a second language and by an unknown about ever increasing number as a foreign Language" (Encyclopedia Britannica,2004). No language, ancient or modern can be compared with "English in the number of geographical distributions of the homes, shops, factories and offices in which the language is spoken , written or read"(F.G.French,3). Apart from being native or first language in countries as widely apart as the United Kingdom, The United States of America, Canada, Australia, New Zealand and South Africa, English is an important second language almost everywhere in the world.

The whole world has accepted English language as the medium of intellectual exchange for the following three reasons,

1. The commercial weight
2. The technical importance
3. Translation from other languages

English has been caught in that ceaseless flux which is Indian life and thought at the present time. English, therefore, will continue to enjoy the status of an associate official language of the Indian Union for an indefinite period. The teaching of English   should continue to be promoted   from the school stage. The **National Integration Council (NIC)** in its meeting at Chennai, clearly pointed out that the teaching of English must be allowed for the following purposes have been recognized by all.

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i. English as an international language
ii. English as a national link language
iii. English as a library language
iv. English as a 'Gateway of Knowledge'.

CONDITION OF ENGLISH CLASSROOM MANAGEMENT

The teaching of English in our schools is far from satisfactory. The students who learn English for about six periods in a week for six years hardly know 150 words by the time they join a college. This means they have not been able to learn English words at the rate of one word per period. They do not know how to use the commonest structures in English. The conditions of teaching English are different from State to State. The performance of the students in urban schools is better than the students in the rural schools. Likewise, the attainment of students in public schools /model school is better than that of their counterparts in ordinary schools. For this we can enlist some of the shortcomings as follows**.**

LACK OF CLEAR–CUT POLICY

After independence, the place of English in India has not been well – defined. It has been changing from time to time. In some of the States in India, English is not a compulsory subject. It is not necessary to study English to get through the high school examination. Hence the students are not serious about the study of the language.

AIMS ARE NOT CLEAR

The teachers who teach the language have little understanding of the aims of teaching the language. The only aim is to make the student pass the examination. The students depend more on memory rather than to master the skills of the language. The aim is on the percentage of pass only.

COMPETENCY OF TEACHER

All teachers of English are not similar in their capacity to teach the language. In other words they are not fully competent to do full justice to their assignment. The **UGC** Committee has remarked that **"There is a**

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shortage of Teacher"(UGC Report, Vol.3,7) . This statement refers to not only the number but also the quality and competency. In the high school level, most of the teachers who teach English have just passed school final examination through rural schools. They themselves do not know the correct usage and pronunciation and their vocabulary is limited. It is awful to note that many teachers who did not offer teaching of English in their training period teach this subject. It is wrong to say that any graduate can teach English language to secondary level. Most of the teachers are not in a position to know the latest developments in their subjects. On the other hand, considerable mass of teachers are not interested in improving competency and other relevant skills.

IMPROPER METHODS OF TEACHING

In most of the high schools of Tamilnadu the subject & language '**English'** is taught by the science teacher since the teacher studied a Language paper in his Teacher Training Programme. So most of the teachers use translation method. They teach **English** through **Tamil**   (First and the official language of Tamilnadu State). This translation method enables the pupils to understand the parallel & equivalent terms of both languages whereas the different types of grammatical functions of those terms become big troubling–factors. Students are rarely allowed to express/ speak in the class which makes the process of learning, a dull one.

OVER - CROWDED CLASSES

In the Government schools of Tamilnadu, a teacher is expected to manage 100 students. Within the time slice of the period (45 Minutes) a teacher is expected to check the attendance; verify the given home- work; keep up the discipline of the class then the teacher is expected to give a general introduction to the topic followed by lecture/ demonstration and feed-back . Hence teachers cannot pay individual attention to students.

UNSATISFACTORY SUPERVISION

Speaking practically, there is no supervision on the work of the English teachers. So teachers have no opportunity to get any guidance from experts. No symposium /seminars are conducted for the teachers to update and enrich the subject knowledge.

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LACK OF TEACHING – AIDS

Most of the government schools do not have the facilities of Audio –Visual aids as, Linguaphone records, Filmstrips, Radio, Television and other latest tools to teach English. Even the schools that have some aids, do not make use of them.

ROLE OF COMPUTER IN TEACHING

A computer is a power- driven machine equipped with key – boards, electronic circuits, storage compartments and recording devices for the high speed performance. The National Policy of Education has emphasized the use of computer and new technology in English language teaching. As mentioned in the report,*" **Some specific programmes are to be taken up for implementation as mentioned in the programme of action"** (' Programme of Action', **National Policy on Education, 166**).** The report says that,

1 Research in the methodology of effective teaching and learning of languages with particular emphasis on the use of computers and other communication media.

2. Infrastructure facilities of language and other training institutes for training of teachers and experimentation in Computer assisted instruction and the use of new communication technology.

3. Development of textual materials for ensuring attainment of specified language abilities

The Central Institute of Indian Languages (**CIIL**)**,** Kendriya Hindi Sansthan and Dakshin Bharat Hindi Prachar Sabha have been provided with BBC micro computers for undertaking experimentation in computer assisted language instruction and learning.

The Central Institute of English and Foreign Language **(CIEFL Now it is known as TEFLU)** has set up an educational media research centre for English Language Teaching (**ELT**)**.** The researcher has chosen the device ' **Computer** ' for his research. He wants to make a research on using computer to teach English grammar for engineering students. The following are the questions which focus the main objectives of the study.

1. Will a computer assist a language teacher?
2. Will a computer be used as a teaching aid?
3. Will a computer be effective in class room ?
4. Will a computer be comparatively more effective than the conventional teaching?

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DESIGN OF RESEARCH – LESSON, INSTRUCTION AND TESTING

Stage -1 Develop a lesson Package to teach prepositions in English.

Stage -2 developing an evaluation module to conduct achievement test

Stage – 3 Linking lesson package and Testing Module

CONCLUSION

This method of teaching ensures freedom, privacy for students and they are free from peer pressure. This method is successful at all variable levels and creates innovative experience and exposure for both teacher and student. This kind of method can be adopted for teaching English sounds, pronunciation and accent practice. Researchers are still going to explore the best possibilities of internet based learning (WALL – Web Assisted Language Learning) which will motivate young learners to excel in their language skills.

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ENHANCING SPEAKING SKILLS IN ENGLISH THROUGH CREATIVE WRITING SUPPORTED WITH INFORMATION AND COMMUNICATION TECHNOLOGY

Jayashree Jagadeesan* and N. Balasubramanian**
*Research Scholar, Department of Educational Technology
**Director, School of Distance Education, Bharathiyar University, Coimbatore-641 0 46
Tamilnadu, India

The ICT revolution has been presented and accepted as the epitome of "progress" by almost everyone – individuals, corporations and governments alike. Education systems throughout the postindustrial world have not been excluded from this process. ICT has been automatically identified with progress, and governments and educational authorities have invested increasingly large amounts of money in equipment and software that have to be constantly upgraded or renewed, and in the training of personnel. Over the last two decades, many billions of dollars and a lot of energy,   good will, and time have been invested by otherwise economically constrained education systems, into introducing several generations of computers, multimedia and the Internet.

 The field of ICT has revolutionized the whole world but still it has not been widely integrated into education system throughout the industrial world and further more, there is less evidence that ICT leads to the improvement of the students' outcomes, enhances desired modes of learning or teaching of desired social values or brings about desired changes in approaches to teaching. (Alexander, 1999; Healy, 1998: Melamed, 1999). In this context, it is argued that education system cannot abstain from joining the ICT race. In contrast to this, in the present study, the role of technology in improving speaking skills among students through integrated skills is compared to the conventional method. Furthermore, the introduction of ICT into education has often been carried out with vague and confused conceptions of the desired model of learning which the new technologies were supposed to enhance and without clear conceptions of

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any guiding educational values (Postman, 1992; Healy, 1998; Aviram, 1999a, 1999e; Agalianos, 1997: Agalianos & Whitty, 2000).

Schools should be computerized not because of evidence that computers do the educational job better, but because new ICTs are both the representation and the medium of the new way of doing things in the modern world (Negraponte, 1995; Tapscott, 1998), and schools, if they want to survive, have no option but to adapt themselves to the era in which they function (Hough, 2000). However, successful adaptation requires a well-formed strategy based on a clear understanding of the new emerging culture and explicit values and educational aims. Currently, computerization processes in industrial societies suffer acutely from total ignorance and lack of such a strategy (Aviram, 1999, 1999a,b).This study was undertaken to find out whether there is any difference among the technology based instruction and the conventional method. The speaking skills of the students in Group Discussion, Role-Play & Debate were compared between the two methods.

Through Random Sampling Method 82 students studying in the ninth standard of a Matriculation Higher Secondary School were selected as the sample population based on the mean and SD on the scores of their scholastic achievements in English. At random 6 students were selected at first to form 3 Experimental Groups and 3 Control Groups. The remaining sample was randomly assigned to each of the 6 groups each comprising of 14, 14, 13 in the Experimental Groups and 14, 14, 13 students in the Control Groups. The Mean and SD of the scores of the replicated tests were measured.

This Study led to the following conclusions:

1. Though these skills were oral skills yet **Power Point** presentation played an important role in boosting the level of **confidence** in the students where **none stammered** in between when they presented a slide show to support their ideas during :

    ❖ **Debate** (team-wise).

    ❖ **Group Discussions** represented by heads.

    ❖ **Role-Play** (individual show).

Computers are now playing a major role in assisting teachers in upgrading their professional tasks. The important aspect of it is to check whether it is true for all cultures, societies and genders. Many more

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detailed studies are necessary to learn the impact of ICT in educational systems. In line with this thought the present study was taken up.

OBJECTIVES OF THE STUDY

The objective of this study is to design and evaluate an integrated skills project, which would serve as an effective tool to kindle the creativity in children which will enable them to improve their speaking skills.

The following are the objective of the study:

1.   To make sure whether students are able to make the best use of limited resources in technology to improve their speaking skills as in Group Discussion, Role-Play and Debate.
2.   To verify whether students are able to integrate Computer Technology through integration of skills.

HYPOTHESES OF THE STUDY

The following hypotheses were set for the study:

1. There is no significant difference between the means of the Control Groups I, II & III and the Experimental Groups I, II & III in exhibiting their speaking skills in Role-play through the use of computer technology.

2. There is no significant difference between the means of the Control Groups I, II & III and the Experimental Groups I, II & III in exhibiting their speaking skills in Group Discussion, through the use of computer technology.

3. There is no significant difference between the means of the Control Groups I, II & III and the Experimental Groups I, II & III in exhibiting their speaking skills in Debates through the use of computer technology.

TOOLS USED

The following tools were used in the study:

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1. *A project work in creative writing was taken up and validated by the investigator*.

-An Integrated Skills Activity on Creative Writing

2. Criteria for Creative Island

Intel's Project Evaluation Rubric Tool was used to evaluate the project

3. Rubric for Graphic Organizers - Inspiration Diagrams

a. Criteria for Creative Island's Write-up, Letter Writing and Advertising

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b. *Criteria for Debates, Group Discussions, Role-play*

Powered by TeAch-nology.com- The Web Portal for Educators! (www.teach-nology.com)

c. Criteria for News Reporting & Story Writing

Powered by TeAch-nology.com- The Web Portal for Educators! (www.teach-nology.com)

METHODOLOGY

THE TREATMENT

The **Random Replication Design** has been adopted by the investigator to highlight the effectiveness of integration of subjects, language skills and Computer technology to develop creativity in students of the adolescent age group in the experimentation. Adopting Simulation Method, an Integrated Skills Activity on Creative Writing was given to both the Experimental groups I,II,III and the Control groups I,II,III which involved creativity and **development of an Imaginary Island**. The 3 **Control Groups** were allowed to do the activity with **paper-based materials** whereas the 3 **Experimental Groups** did the same project work with the help of simple basic knowledge of **Computer Technology**. With the help of the already acquired knowledge the students were able to create a new land of their own with necessary ideas obtained from integrating all the subjects like History, Geography, Science, Trade & Commerce, Economics and Language which they have already learnt in separate compartments. Having completed

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the tasks on creating the island and doing a write – up of the island, the project turned its discussion on certain important issues of the island - Establishing an Air Port.

REPLICATION OF TASKS (TREATMENTS)

From this point onwards the students of the 3 Experimental and Control Groups were given three different tasks like Group Discussion, Role-Play and Debate where, one task at a time was administered to each of the groups replicating the treatments till all the three groups took turns to complete.

SPEAKING SKILLS: EXPERIMENTAL AND CONTROL GROUPS

The speaking skills were developed through Group Discussion, Debate and Role-play given as a replication treatment. Having completed the tasks on creating the island and doing a write – up of the island, the project turned its discussion on certain important issues of the island - **Establishing an Air Port.**

Experimental *& Control Groups*	*Test No. 1-3* *Speaking Skills*	*Topics*
I, II, III	Group Discussion	*AirPort*
II, III, I	Role-Play	AirPort
III, I, II	Debate	AirPort–for/Against

GROUP DISCUSSION

A Group Discussion was arranged on the issue of the airport for the Experimental Group I. The Experimental Group I was divided based on the interests on the island and then the pros and the cons of airport in general and of possible airport sites on the island were discussed. The major interest groups on the island were elicited and then the groups were divided equally between them. There were two possibilities here. The groups were allowed to decide or their own attitude towards the airport scheme, preparing their arguments in groups before the actual meeting. This had the advantage of allowing students to express their own feelings more freely, but sometimes lead to session's imbalance of opinion for or against the airport. Alternatively, role cards were handed over prepared in such a way as to

represent a broad spectrum of opinion. This ensured that there were conflicting opinions at the meeting, leading to argument and maximizing discussion.

The Experiment Group I was allowed to use PowerPoint/ Star Impress to support their ideas by presenting a slide show about their islands. Each pupil was able to bring out the advantages and disadvantages of the airport whereas the **Control Group I** also had a Group Discussion but the speakers **were conscious** and **had some inhibitions** while speaking unlike the **confident Experimental Group Me** who were **highly expressive.**

ROLE-PLAY

The Experimental Group II was divided into six Categories as follows:

1. The Holiday trade   In favour of the airport.

2. The unemployed   In favour of the airport

3. The urban residents   undecided

4. The Government   undecided

5. The conservationists   opposing to the airport idea.

6. The farmers   opposing to the airport idea.

The airport was accepted by the meeting, the group then decided where it should be built, and on this subject the role cards divided the interest groups into different factions as those mentioned above.

1. The Group was divided into six sub-groups each representing a different interest where extra 2 members were allotted to the government group as the government representative chaired the meetings.
2. Each interest group met to read its role card to develop further arguments to support its opinion. The group then met for the main meetings so that there were 2 persons representing each interest group at each meeting. The government representative was the chairperson at each meeting, called other representatives to speak in turn.

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3. All representatives at each simultaneous meeting presented their arguments, which were given the opportunity to criticize other representative's opinions.

4. Each group then voted whether to accept the airport plans or not. Votes were counted for the entire group and a final decision was taken in this research.

5. The groups then met to discuss and decide where the airport should be located; a decision again was made on voting basis. Throughout this procedure the investigator acted as an organizer and provider of language when needed.

The Experiment Group II was allowed to use PowerPoint/ Star Impress to support their ideas by presenting a slide show about their islands. Each pupil was able to bring out the advantages and disadvantages of the airport whereas the Control Group II also had a role-play but the speakers were conscious and had some inhibitions while speaking unlike the confident Experimental Group II who were highly expressive.

DEBATE

The Experiment Group III was assigned a debate. An important foreign power had offered to provide financial aid to build an airport on the island, provided that it would use the airport for refueling its military aircraft. The Experimental Group III was called for a meeting of representatives of the island's various interests to D**ebate** on the matter and decided whether or not to accept the offer.

On prior intimation about the topic the group divided into for and against. They had prepared a slide - show gathering information and pictures to substantiate their views for and against the topic and **spoke confidently**. The Experiment Group III was allowed to use PowerPoint/ Star Impress to support their ideas by presenting a slide show about their islands. Each pupil was able to bring out the advantages and disadvantages of the airport whereas the Control Group III also had a Debate but the speakers were conscious and had some inhibitions while speaking unlike the confident Experimental Group III who were highly expressive.

The replication of the treatment was given as in the table that all the three groups covered the entire treatments one each at a time. This took 3 hours to be completed within a week. The data for the speaking skills were collected for evaluation.

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MAJOR FINDINGS

The collected data were subjected to statistical analysis and the results obtained were interpreted and the following are the major findings:

It is found that there is significant difference at 0.01 levels between the means of the Control Groups I, II and III and the Experimental Groups I, II and III in the **Oral Skills** of the students. It is also found that the mean value of the Experimental Groups I, II and III is higher than that of the Control Groups, which can be because of the impact of computer technology in the experimentation in exhibiting the speaking skills with the help of PowerPoint/Star Impress slide show except for the Group **III** in **Debate** which is **not significant**. This may be because of the individual difference in them which **gave confidence to speak in a group than individually** and also because of the interest created even among the Control Group towards the project work which is clear from the means which are higher than the means of the other tasks.

Debate/ Group Discussion/ Role-Play:

Though these skills were oral skills yet **Power Point** presentation played an important role in boosting the level of **confidence** in the students where **none stammered** in between when they presented a slide show to support their ideas during **Debate** (team-wise) and also to support **Group Discussions** represented by heads, and also during **Role-Play** (individual show).

The same tasks were carried out by the control groups without the aid of computer technology where most of the time pupils were diffident to speak whether in groups or individually. Hence the null hypothesis is rejected and the alternative hypothesis is accepted. It is concluded that computer technology has effectively supported their speaking skills to enhance their skills in Role-play, Group Discussion, and Debates.

CONCLUSION

Thus in the present study an attempt has been made to study about the role of technology in enhancing the creativity of the students. It also brings out the impact of integrated skills along with computer technology on the creative writing of the students in enhancing the skills of language learning. In conclusion it can be said that there is still much more to be learnt about the way children think about computers and the factors

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that influence their conceptions. This study has shown that experiences of ICT have an impact on the technical knowledge and understanding children have of computers in the world around them.

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ROLE OF MULTIMODAL SOFTWARE FOR TEACHING ENGLISH TO THE RURAL CHILDREN: EXPERIENCE IN WEST BENGAL

Anupam Basu, Sunandan Chakraborty, Tamali Bhattacharya
IIT Kharagpur, West Bengal, India

Introduction

A large segment of the rural children in India either do not attend schools or form the large segment of dropouts from the schools. Besides the economic factor, one of the major factors leading to this scenario is the paucity of good teachers who are willing to stay back in the villages and serve in the rural schools. The second factor is the lack of learner motivation. The third factor is the insufficient time, resources and mundane study material. Such materials are developed in a routine manner, without keeping in view the individual needs of the children. The overcrowded classes is a major problem in rural schools. Under the no detention policy, followed by State Government, a child is not even tested on the learning outcomes for many years after entering the school.

Teaching English to the rural students turn out to be even more difficult, since after the school classes, the students go back to an environment, where English does not find a place. Also, the parents are not in a position to provide the required guidance to the children. Consequently, among all the subjects, English turns out to be the most difficult one for these children. The result of the Grade X examination in West Bengal (and the trend is the same for most of states) that the percent failing rate tends to be the maximum for English, followed by Mathematics. The school boards often take an escape route for shifting to objective type and over simplified questions to enhance the pass rate.

Multimodal software for supplementary education support provides a powerful alternative to the situation, where there is a paucity of good teachers. The efficacy of Multimedia for education has long been advocated and championed internationally, through psychological and pedagogic studies. Since multimedia software activates the auditory and visual segments alike, the cognitive process is much better

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supplemented. Besides, from the perspective of the rural children the following advantages are of crucial importance.

- Self paced learning: The pace at which the students learn is not uniform. Multimedia based stand alone teaching systems allow the students to cope with the study material at their own pace and repeat through the study materials at will.

- Fear free interactions: The students may write the tests through the test ware provided along with multimedia courseware. They can do this at the time they choose and in the form of a self test. It has been observed that the students feel more comfortable to participate in these tests interacting with the system than with the teachers.

- Feedback: Multimedia systems can help the students learn from the mistakes by providing suitable examples.

- Adaptive tutoring: It is possible for the systems to be made adaptive while delivering the courseware based on the state of an individual student.

In this paper, we present the architecture of a possible multimodal tutoring system, which has been developed at IIT Kharagpur, and also present the development experience of some contents made for teaching English

Shikshak: A multimodal tutoring system

The overall structure of Shikshak shown in Fig. 1 is divided into three major modules – *Domain Model, Student Model and Control Engine.* Apart from them there are interfaces for communications with the users. In this section we shall discuss in details about each of these modules and their functionalities.

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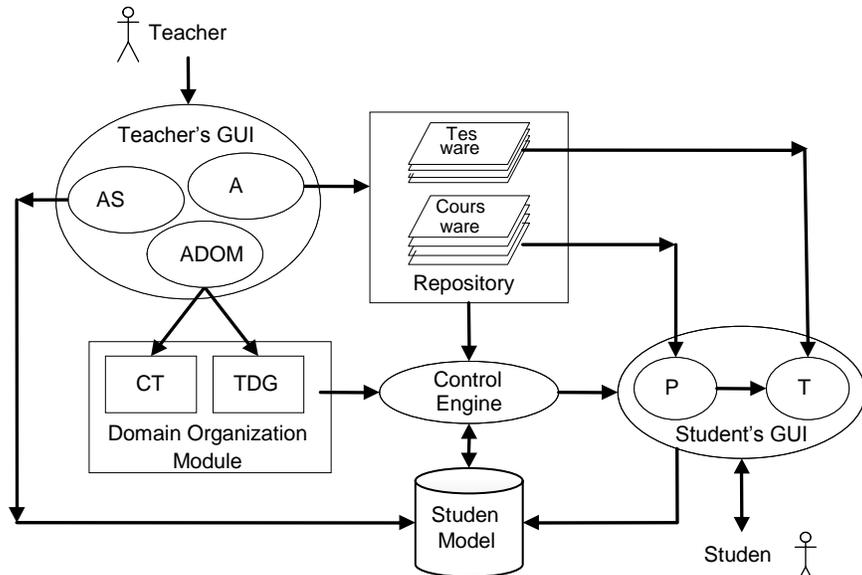
ASM: Authoring student model, AR: authoring repository, ADOM: Authoring Domain
Organization Module, CT: Content Tree, TDG: Topic dependency graph

Fig. 1. Overall System Architecture of Shikshak

Domain Model

Domain model is the knowledge base of the system. Here the domain knowledge is organized for all the subjects to be taught by the system. There are two sub-modules within this module.

- Domain Organization Module

- Repository

Domain Organization Module(DOM)

DOM is a structural representation of the different courses and their components stored in the system. Two major data structures are used for this purpose.

- **Course Tree (CT):** CT is a hierarchical structure of a course stored in the system. The root of the tree keeps the name of the course, and is called course node. Subsequently, in the lower parts of the tree different sections/subsections and topics of the course are kept. The leaf nodes of the tree are called topics and are the minimum teachable units. Topic nodes are also associated with some features – *Concepts (sub-topics), prerequisite topics, threshold score, difficulty,* and importance. A sample CTfor English is shown in Figure 2.
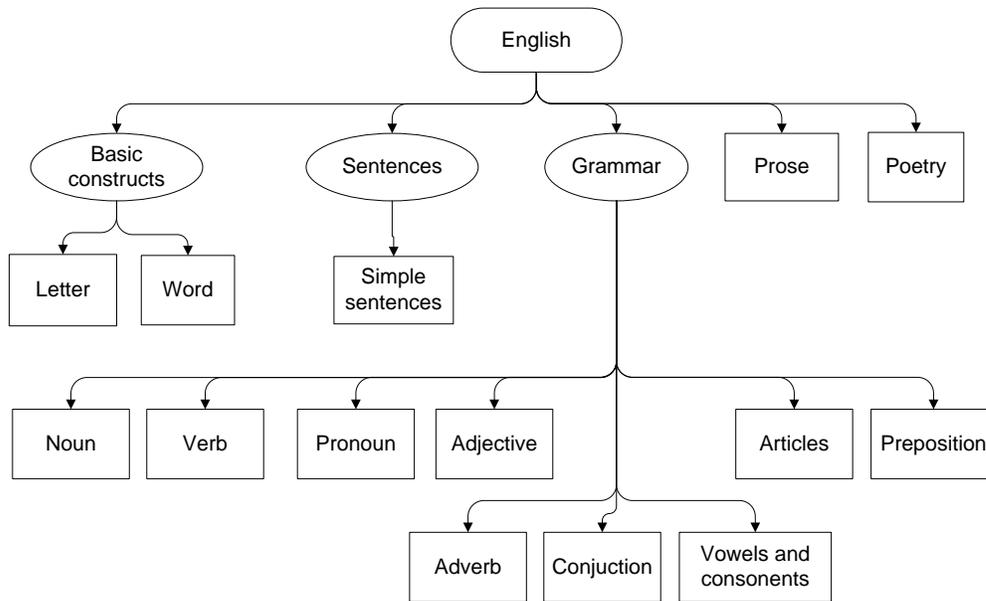
- **Topic Dependency Graph (TDG):** The nodes of TDG are constituted of the topics from the corresponding CT, whereas the edges in TDG depict 'prerequisite' relation between the nodes (topics). Every course stored in the system will have its own pair of CT and TDG.

Repository

The second part of the domain model is the Repository. This is a pool of learning and testing materials. For efficient access of materials from the repository the materials are tagged with various features. These features provide a graphic description of the documents, which helps the material selection agent of the system in efficient and customized retrieval of the materials for

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the students. In order to tag the study materials a subset of the standard set of tags specified by IEEE LOM is used. In addition some extra features are added locally to incorporate some system specific information in the document description.

Student Model

In this model each state is a composite state, representing the student's cognitive state. The present state of a student is the reflection of the current condition of the student in the course. The state is constituted of,

- Coverage: List of topics covered by the student in each course at any point of time

- Performance: Performance of a student is measured through her

    o Comprehension-ability (C)

    o Problem-solving skills (P)

The performance of a student is computed by combining the individual values of the above parameters. The combined value is fuzzified using a set of fuzzy terms **{Excellent**, **Very Good**, **Good**, **Average, Poor}**.

Control Engine

In a classroom, every student is compelled to follow the same sequence and pace of teaching followed in the classroom. However, a classroom comprises of students with different capabilities and requirements. Following a single teaching plan may not be successful for all the students. Hence, for better learning outcome from the students this system devises separate plans for each student. Moreover, if a particular plan cannot produce desired results or the system finds excessive flaws in the student's performance it is capable of re-planning the teaching method to improve upon the drawbacks and maximize the student's performance. Such planning and adaptation is performed by the Control Engine of the system.

Content Preparation and Deployment

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Experiments conducted by ASMA, an NGO in IIT Kharagpur, in some selected rural schools have shown that the interest, attention, involvement and participation of the students are largely enhanced when they are provided with multimodal educational contents in vernacular, with images of their social reality. To achieve this, ASMA works towards imparting primary school education through multimodal approach and using multimedia contents in English delivered through low cost computers.. ASMA's experiments have revealed that this approach is very effective to teach English language in an interesting manner. Monotonous, teacher-centric methodology is one of the identified obstacles to attract and retain learners in the system. Children of rural West Bengal are severely deprived, compared to their urban counterparts, in terms of access and facilities in education. The lack of proper and attractive teaching interfaces makes the process of learning monotonous and this enhances the drop-out tendency among the rural school going children. One significant factor is the unimaginative and uninteresting teaching interfaces that make learning very monotonous, resulting in the steady rate of dropout kids. .

So there is a need to develop an attractive, affordable and effective teaching platform that will capture the attention of children. In view of the large number of children, who remain uncovered by present formal and nonformal educational programmes, it is felt that useful innovations are needed in primary education to provide quality education, which would ensure high attendance and retention as well as a high rate of success. To determine whether the addition of interactivity to computer-based learning packages facilitates deep learning (as opposed to mere factual recall) by actively engaging the learner, incorporation of interactivity as a design principle should be adopted to enhance the language learning process. The term interactivity is used to describe a variety of learning activities including interactions between students (student–student interaction), interactions with the tutor (teacher–student interaction), and interactions with the teaching material itself (student–content interaction) ([Moore, 1989] and [Schrum and Berge, 1997]).

Methodology

Our focus is to motivate a learner of class 3 student of the rural background to learn the English language. For this, software called **Khelapara for English Class III** has been developed. We have used the ADDIE model to design the structure of the **Khelapara** software**.** The ADDIE model is a generic and simplified instructional systems design (ISD) model. ADDIE is short **for Analyze, Design, Develop, Implement, and Evaluate.**

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Khelapara, is a multi-modal Computer-Aided Learning System .It is software that would have an animated graphical interface making the learning process attractive, minimizing the fear-factor that comes automatically with the human teacher. Secondly this would serve as a teaching aid to teachers, making their life easier particularly in schools with poor student teacher ratio. It has been designed keeping in mind some basic psychological features of a child in general.

- Children are generally attracted by colorful pictures and facts that are full of fun.

- Their attention can easily be grabbed by the animated graphics.

Providing education through interactive games helps to overcome the monotonous nature of the conventional text based mode of education

We first analyze the background of the rural children, their English language skills. Given that the group in question belongs to class III of the primary section of schools in rural West Bengal, teaching them the English Language is a challenging task in itself. There are various factors that pose a hindrance in learning the language. Firstly the language is completely foreign and unfamiliar in the rural scenario. Secondly there is no intuitive learning background at home. In most homes, parents are illiterate and are themselves de-motivated. Thus they are in no position to provide their children and environment for studies. Another factor that plays an active role in de-motivating the child is the initiation study material, which are incredibly unimaginative and drab. In addition to this, they are not equipped to build adequate word power. Also teaching quality and style are very poor. This is owing to the fact that the teachers themselves are not motivated and also the skill required to help students grasp the new language is very poor. Use of mother tongue, in this case Bengali, to explain new English words and expressions is also rampant. This results in a situation where the student cannot retain the English counterpart of a word they know in Bengali. Teachers do not try to develop writing skill of the students. Instead they provide ready answers to exercises, which the children learn by rote. Even these answers in a majority of cases are wrong. Virtually no emphasis is laid on speaking or communicating in this language. An English teacher communicates with the students in the vernacular in the English class. Thus communication skill in English never develops. All these factors contribute to a tremendous lack of confidence and an overpowering inhibition in reading, writing or communicating in English.

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Analyzing the problems in English language skills of rural school children of class III, we **designed** the software in agreement with the pedagogical rules. Here we focused on the architecture of the software, flowchart design, making the storyboard and constructing the Lesson Plans of each chapter of their syllabi.

Given that a student of Class 3 has already learnt the English alphabets in the previous classes, the next step is word-power building. The design of the software is such that it guides the student through various levels of word power building and subsequently helping the student construct very basic sentences. Children are made familiar with the English words for objects of everyday use and environment that the child can relate to. Like for example things that they bring to school, objects, flowers or animals that they see in and around their homes everyday. The introduction of the child to these words is done with the help of colourful pictures, animations accompanied by voice over Voice over to teach correct pronunciation. This introduction is followed by multi-level do-it-yourself exercises which helps the child recapitulate and thus retain in memory the new words that they have leant. Secondly at no point of time is the child admonished for making a mistake, which is mostly the case with a human teacher. When a child succeeds in a level, his or her effort is duly applauded. Thus the sense of achievement automatically urges the child on to the next level.

The next step in the design is developing the child's curiosity to know new unfamiliar words. The aim is to urge the child to ask the question "What is this?" Visuals are presented to the children and the child can click on parts of the picture to find out what the object in the picture is called in English, thus receiving the answer to the question "What is this?" This not only increases the child's word power, but also effectively prods and awakens the child's natural curiosity to know more. Rhyming words in the next step also develops their reading and pronunciation skills.

The next feature in the design of the software is making children familiar with categories. Words are arranged in categories. This helps children recognize the relation and difference between words. Related practice exercises are presented to help child retain the concepts.

After the child crosses multi -level word power building, he or she is initiated to the sentence construction stage. Sentences here are very basic constituting 3 or 4 words. While teaching the child sentence construction, examples are drawn using words that they have learnt in the word level. Practice exercises

are similar to examples to build confidence in the child. Again the child's success is applauded while the child is not admonished for errors.

 The third phase is development. In the develop phase, materials are produced according to decisions made during the design phase. The main objective of the design of the software is to develop the children's curiosity to know more. This will automatically spur the children on in their learning process. For this purpose, development goes through several stages. Several outputs are obtained in the process. A Visual Script is a detailed plan and guideline for the development of the software. The effectiveness of the software largely depends on how well researched a visual script is. Thus a visual script and story board is developed. Computer based instruction i.e. the voice over is a very important factor in the development stage. The instruction should be audible, meaningful and unambiguous so that the learner can understand the topic in absence of the human teacher. The audio visual feedback of exercises is another important factor in the development of the Khelapara software. Through this instrument, the child is encouraged to go to the next stage, or identify the error and correct it. The child's performance is measured by a score. Depending upon the score, the child rises to the next level if he/she crosses the threshold.

The **implement** phase includes the testing of prototypes (with targeted audience), putting the product in full production, and training learners and instructors on how to use the product.

The evaluation phase consists of two parts - formative and summative. Formative evaluation is present in each stage. Summative evaluation consists of tests for criterion-related referenced items and providing opportunities for feedback from the users.

Results and Observations

The system presented has been deployed at a few schools in rural West Bengal, with educational contents for the primary level (Grades I to IV). For evaluation of the system we are carrying out experiments at some of these schools. To illustrate the efficacy of the system, we present here some results from the experiments conducted at a rural school, called Disha, in Hijli, Paschim Medinipur, West Bengal. The experiment was performed on **56** students of grade III..

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First, the students were taught in standard classrooms and were evaluated through some tests. Then the same students were taught the different topics of the same subjects using our system. Care was taken to see that the degree of hardness of the topics were same as before. Again they were evaluated through a separate on-line test of the same degree of difficulty as the previous one. We found a marked improvement in the average performance of the students. The results and observations are summed up in the following figures and tables. We found an improvement of **7.5%** in the test results when our system was used to teach these students. The comparison of the average performance before and after the use of Shikshak is shown Fig.3.
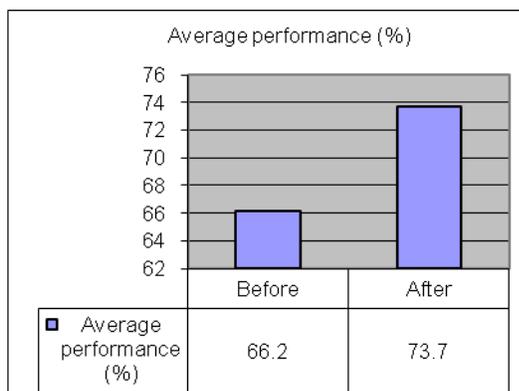
Fig. 2. Average performance (Before and After)   Fig.4. Net improvement and deterioration, after Shikshak was used
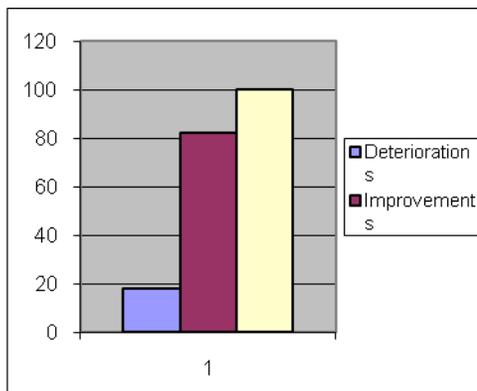
We also observed some notable features. Only **17.8%** of the total student's performance decreased during this experiment, i.e. **82.2%** showed improvement using our system. The result is summarized in Fig.4.

We tried to conduct a study about which medium of material is suitable for which type of students. Three kinds of electronic contents were used for teaching.

1. Text documents

2. Power Point Presentations

3. Flash Presentation (with animation).

First of all, it was found that text document could not hold their attention. In the case of PowerPoint and Flash presentations with animation, some interesting results emerged. In the case of High Achiever category, their performance was near about the same after seeing both kinds of presentation. In the case of Slow and Medium Achiever category, it was found that, their performance showed a mixed response to the PowerPoint presentations compared to a significant improvement in performance, after seeing the Flash presentations. From the above observations, the following inferences can be drawn,

a) Animations may distract the students with higher capability. For them plain text format might be more appropriate.

b) For the students, belonging to the other categories, contents with animations and visual explanations can be more effective. These formats may attract them more to the learning process.

Thus, we can get an idea about which types of contents are preferable to which categories of student.

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THE EFFECT OF COMPUTER ASSISTED LANGUAGE LEARNING ON THE TERTIARY LEVEL STUDENTS OF ENGINEERING

E. SUGANTHA EZHIL MARY
MAAMALLAN INSTITUTE OF TECHNOLOGY
VADAMANGALAM
SRIPERUMPUDUR
TAMILNADU, INDIA

Introduction

Language teaching is rather a difficult and complicated process that requires gradual work. Instructors in the field of language teaching always try hard to make language learning enjoyable and interesting for the learners. Different activities, games, and interesting stories help language teachers to achieve their goal through many years and they still do it . However, at the beginning of 1980s, technology came into use in the language classrooms with films, television, and language labs having video tapes and audio cassettes. As technology developed, new programs came into use to create a more interactive and interesting environment for language learners and teachers than what was previously available in the traditional language classrooms. Many researchers, in search of the best way to acquire second language, now use CALL in language classrooms to find out its effects on language learning. The enrichment of language teaching and learning process through CALL can be achieved through empirical research including learners' attitudes and opinions. Therefore, one of the aims of this study is to give language learners an opportunity to reflect, whether CALL has helped the learners. These reflections may provide insights for both language teachers and learners.

Advantages of CALL

Chavez (1990) determined that technology together with meaningful tasks and interact ional purposes promoted a positive second language learning environment, stressing the importance of learner autonomy (as cited in Liu, Moore, Graham and Lee, 2003). Similarly, an analysis by Ying (2002) indicated that network-assisted environments provide learners with autonomous training and learning. These studies

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contributed to learner autonomy, which means that learners can learn according to their own pace and review what they have learned easily. This is the most widely benefit of CALL in educational settings.

Considering the suggestions made by the authors discussed, the following list can be outlined to indicate the advantages of CALL in the classroom:

- Learner autonomy

- Repetitive practice

- Immediate and detailed feedback to learners as regards their progress, mistakes etc.)

- Flexible learning (anytime, anywhere, anything learners want)

- Non-linear learning

- Increased motivation

- Less frustration

- New types of exercises

Considering the suggestions made by the researchers discussed, the following list can be designed to indicate the disadvantages of CALL in the classroom:

- High cost of equipment and software

- Low capacity of the equipments

- Lack of CALL software of high quality

- Lack of trained teachers

- Computer anxiety among students and teachers

- Not suitable for all learners (different learning styles)

Purpose

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This study aimed to answer the following questions as regards the effect of computer-assisted language learning on the learners' test scores. The main problems of this study are stated as follows:

1. Which instruction method is more effective as measured by the learners' pre and post test results on the test or traditional instruction?

> 1.1. Is there a statistically significant difference in regard to the gain scores on the structure section of test between the learners instructed by CALL and the learners instructed by traditional instruction?
>
> 1.2. Is there a statistically significant difference in regard to the gain scores on the reading section of test between the learners instructed by CALL and the learners instructed by traditional instruction?
>
> 1.3. Is there a statistically significant difference in regard to the gain scores on the listening section of test between the learners instructed by CALL and the learners instructed by traditional instruction?

2. What are the learners' perceptions as regards the use of CALL?

Methodology

The study was designed as a quasi-experimental study since it did not include the use of random assignment. It focused on using computer-assisted language learning and traditional instruction to prepare the participants for the exam. One class was taught using computer-assisted instruction in a language laboratory (the teacher was in the class just to make sure that participants were working with the computers and to help if anything went wrong with the computers), while the other class was taught using a traditional method of instruction in a traditional classroom setting. The training lasted for 8 weeks and the same instructor met the two groups three hours every week.

Participants

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The participants in the study were 120 students in the Department of mechanical engineering. The students were assigned to the three sections of the school experience course alphabetically at the beginning of the semester by the department. Participants were chosen from the third section, which were available for the study). They were aged between 18 and 20 and they were mostly graduates of Anatolian Teacher Trainees' High School where a year of English preparation program was required. Of the participants, twenty-nine were females and five were males. The participants were randomly assigned to the experimental and control groups using a table of random numbers. Experimental and control groups consisted of 17 participants each (three males and fourteen females and two males and fifteen females respectively) since the language laboratory for experimental group accommodated that number.

Variables in the study

Computer assisted language learning, as defined for this study, was provided in a language laboratory where learners worked alone on a computer using the provided programs and learnt at their own pace. The instructor did not participate in the learning process, but he made sure that learners were working alone on their computers. Traditional instruction was given in lecture format and as information going from the instructor to the learners. Participants had to follow the instructor's schedule and they could not learn at their own pace. All the materials used in the groups were identical.

Data collection procedures

With the consent of the participants, the study was conducted after the regular classes in the department are over (after 4 p.m.). On the first day of classes, an informed consent form was presented which was adapted from the sample consent forms given in *How to* After participants signed the form, the instructor administered the pre-test (paper version) to the control and experimental groups in the same class. Then, both groups received instruction through different media for eight weeks and three hours each week by the same instructor. During the eight weeks, for classroom practice, English Grammar in Use and Cambridge Advanced Learner's Dictionary were used. The CD versions of these materials were used by the learners instructed by CALL. In addition, was used by the participants. For participants instructed by traditional instruction, practice tests on this CD were converted to paper tests. The participants in the experimental group worked alone on a computer and learned at their own pace. They studied any section as much as they liked. The instructor did not participate in the teaching/learning process, but he made sure

that that the participants were working alone on their computers. The participants in the control group met the instructor three hours each week during eight weeks. The same materials (printed and paper versions of the practice tests) were used according to the schedule set by the instructor. Participants studied structure, reading and listening (one hour was devoted to each) during three hours. On the last day of classes, the instructor administered the same test as post test. The scores obtained by pre-test and post test were statistically analyzed. In addition, after two days following the post-test the participants in the experimental group were interviewed one by one as regards their opinions about CALL. The interview took place in the office of the researcher without a time limit, but took approximately, 7-10 minutes. The interviews with the learners were tape recorded and the researcher took notes. The participants were interviewed in English.

Conclusion

Based on the results of the study, it is suggested that CALL be integrated into the traditional classrooms where the instructor is also available for further assistance and questions and teachers help students practise reading passages or articles on a computer and some activities should be provided in order that students become familiar with reading and accessing to reading materials online. It is also suggested that CALL is a great help in learning/teaching situations where repetitive practice is required.

However, a word of caution is due here. It must be taken into consideration that these results may have been influenced by a number of extraneous factors. The participants in the study were not selected randomly, and a convenience sample was used. Therefore, the study should be repeated with a number of similar samples to decrease the likelihood that the results obtained were a one-time occurrence. The study continued for eight weeks. This duration could be extended to one semester in a year and also be incorporated into one of the courses in the department. This would relieve the pressure of time and the other responsibilities of the participants. Moreover, speaking and writing skills were ignored and were not taken into consideration in the study because of the lack of software, lack of time and workload of the participants in their department. Indeed, speaking and writing skills could have been included in the study since they are accounted in the

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THE EFFECT OF RECAST TIMING ON EFL ERROR CORRECTION

Arezoo Farazandeh & Donya Farazandeh
Islamic Azad University of Iran (Karaj)
a.farazandeh@gmail.com

Introduction

Undoubtedly, feedback accounts for one of the important features in language teaching. According to Ur (1996), feedback is information given to the learner about his/her performance of a learning task, usually with the objective of improving this performance. Chastain (1988) believes that the type of feedback language authors and teachers provide students reflects their view of language and their objectives. If they view language as a perfectible grammatical system, they focus students' attention primarily on language, and they correct all the errors the students make when they speak it. If they view language as a functional communicative system, they focus the students' attention on meaning, and they respond to the content and the comprehensibility of what the student say.

Lyster & Ranta (1997) proposed six different types of feedback which recast is one of them. Feedback accounts for one of the important features in language teaching. There are various types of corrective feedback used by teachers in response to learners' errors.

Definition of Recast

According to Lyster & Ranta (1997), recasts involve the teacher's reformulation of all or part of a student's utterance minus the error. Among corrective feedback types, recasts have received the most attention from researchers. There are several reasons why recasts have received so much attention from researchers.

Recast is a type of corrective feedback that is generally defined as "involving the teacher's reformulation of all or part of a student's utterance, minus the error" (Lyster & Ranta, 1997, p. 46).

Examples (from Ellis & Sheen, 2006):

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E$_1$ T: Where you were in school?

   S: Yes, I stand in first row.

     T: You stood in the first row? (Recast)

     S: Yes, in the first row, and sit, ah, sat the first row.

E$_2$ S: Korean is faster.

     T: Is faster. (Recast)

     S: Is faster than English.

Method

The main objective of this study is to determine whether recast timing has an impact on EFL learners' speaking skill. Researches on the recast timing enable teachers to choose the proper time which help the students to correct their errors, and this study aims at showing the significant relationship between recast timing and error correction.

Subjects

The subjects are all Iranian female Persian-speaking of Kish Institute (Pasdaran Branch). They were all considered to be at the elementary level according to a homogeneity test given. The subjects are from 17 to 24. Sixty students were selected. There are one experimental group and one control group.

Procedure

In order to have two homogenous groups, the homogeneity test was administered on the first session. The subjects were given thirty minutes to complete the test. The researcher explained that they would get one point for each correct answer, and they would not be penalized for the wrong answers. The sixty students were divided into two groups. There are one experimental group and one control group. Our procedure consists of three separate parts: pretest, treatment, and then post test. In order to meet the inter-rater

reliability of scores, the rater judged the students speaking skill three times. The researcher in this study prepared a scale and according to this scale, the speaking skill is divided to four sections: fluency, accuracy   (structure, vocabulary, pronunciation). The rater gave the scores out of 20 and at the end the researcher took the average of these scores. In the experimental group, the teacher should give delayed recast to the learners' errors and in the control group; the teacher should give immediate recast to their errors as it was done traditionally.

Statements of Problem

There are two moments when teachers may choose to deal with correction:

(1) Teachers may correct learners immediately after the error.

(2) Teachers may decide to delay correction until after an activity is completed which is called delayed feedback.

There is a research question in this study: Is there any significant difference between the error correction of learners after immediate recast and delayed recast?

The main objective of this study is to determine whether recast timing has an impact on EFL learners' errors correction. To that end, the following null hypothesis is presented.

HO: There is no statistically significant relationship between immediate recast timing and delayed recast timing.

Results

Standardizing Nelson Proficiency Test

To have four homogenous groups participating in the study, Nelson test was used as proficiency test in this study. This test included 50 multiple choice questions. The test was given to 66 participants to assess their English proficiency. The following table shows the summary of the item analysis for standardizing

Nelson Test. As it is known the items with Ifs that fall in range between 0.30 and 0.70 are usually considered acceptable and with the IDs upper than 0.30 are good items. As it is shown in table 4.1 no item was omitted.

Variable	Descriptive Statistics (FarazandehFinal.sta)							
	Valid N	Mean	Median	Minimum	Maximum	Variance	Std.Dev.	Standard Error
NELSON	66	31.95	33.00	15.00	44.00	55.92	7.48	0.92

As data shows in table 4.2 the mean of the final scores of 66 participants in Nelson Test was 31.95, the standard deviation was 7.48, and the standard error was 0.92. So, the participants were selected within one SD above and below the mean.

$$X+1SD=31.95+7.48$$

After achieving two homogeneous groups, the pretest was used in order to compare the results with the results of posttest to find out the degree of improvement in students' speaking skill.

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APPLICATION OF HUMAN LANGUAGE TECHNOLOGY (HLT) IN ACQUIRING ENGLISH FOR SPECIFIC PURPOSES (ESP): PROBLEMS AND PERSPECTIVES

S. Gandhimathi
Kongu Engineering College
Erode
Tamilnadu, India
emugandhi@rediffmail.com

Introduction

Human Language Technology (HLT) is the advanced term in the context of teaching and learning of English for Specific Purposes (ESP). The success of this process of teaching and learning lies with how capable the learners are in making use of the language aspects in the proper situations. Through the adoption of human language technology, human beings are able to discuss and find out a language solution with the help of the system. They need not seek the help of other human beings in identifying better words and grammar in varying context leading decision—making.

Human language technologies

Human language technologies refer to the research computer systems that understand and or synthesize spoken and written language. It includes speech processing system (recognition, understanding and synthesis), information extraction, handwriting recognition, machine translation, text summarization and language generation.

Application of HLT in academic context

HLT can be applied in the teaching and learning of English for Specific Purposes. This application is expected to be posing less work to the participants (both teachers and participants). The participants are expected to interact with the system in learning new words, contextual meanings, grammar in situations

and other need based linguistic phenomena. To facilitate the teaching and learning process in the classroom as well as outside of it, the HLT comes handy.

Components involved

There are various components involved in acquiring language through the employment of HLT. For the flood of ESP information, web growing to petabytes online, web intranets, e-mails, chat rooms, new, propriety data are used. Different types of text are being utilized; unstructured and semi-structured, multi—lingual, non—English text growing rapidly. In addition to this, variety of system formats like txt, html, xml, PDF, images, audio and video play a vital role in the teaching and learning of ESP.

Voice recognition

Speech between the human and the machine must have been properly recognized for better interaction. In this process of interaction, the machine has to recognize the human voice. For this, there are two kinds of expectations: one the ability of software to act as an accurate and responsible scribe and the other as something that can really analyze the language.

Machine translation

Machine translation (MT) is a useful tool in learning and acquiring a foreign language or second language. It saves time and energy on the part of the learners in ways to seeking text based materials for line to line translation. However, MT is not able to do much better in its output for it involve run—on sentences, awkward phrasing, poor punctuation and simple spelling errors. It is so because MT lies with line to line translation of language materials. As a whole, MT never replaces the human translator but it can do a lot that people cannot.

Human translation and machine translation

Human translation is expensive, slow, aims for perfect translation of sentence while the machine translation is inexpensive, on demand and fast, aims for comprehension/gist of paragraph and provides

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automatic adaptation to users' domains. It enables native speakers to extract knowledge from foreign language content.

Optical character resolution

Optical Character Resolution (OCR) consists of symbols mixed with letters. Only if the learner is able to program the algorithm for operating misrecognized character strings, the OCR tool will prove to be fruitful.

Grammar and spell checker

Grammar checker will be able to assure the right use of grammar and will identify the accurate use spellings of words. It is also used in OCR to analyze a sentence with an ambiguous character string.

Study design: *Method*

This study is executed with the help of the available human language technologies in one of the institutions in Tamilnadu. It consists of two levels of analysis. First level deals with the adoption of different technologies for ESP teaching and learning and the second level consists highlights the problems that teachers and learners faced while adopting such technologies and the result.

Participants

The participants of this study were 5 first year learners belonging to a specific field of ESP study. They were between the age of 17 and 21. They were from schools where both mother tongue and second language were given importance responsively. Some of them knew the basics of the system operation while the others not.

Procedure

Learners were introduced to what is human language technology. They were asked to take notes whenever they were listening to new terms and meanings. They were given individual systems. For three days, they were asked to adapt themselves to HLT resources. In the mean time, teachers were taking care of the functions happening in the laboratory.

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Results and discussion

Teachers felt that they could not maintain the proper functionality of the learners and their use of language. The participants were found to be improving the language acquisition process but were not able to improve their skills. It is obvious that only when learners are practicing language aspects with the other human beings, they will be able to enrich their knowledge of ESP. There are disadvantages in relying upon the system based language acquisition that the text encrypted through translation is inaccurate for the system does not think and relate ideas and produce a new sentence out of this combination. This result creates misunderstanding in the learners' employment of language for official purposes.

Conclusion

Voice recognition, MT and OCR are much helpful in acquiring a foreign language but they will never replace human brain. Machine based learning will not long last and never be equivalent to human performance in speaking, text identification, understanding, analysis and interaction. Technologies can be made use of for certain purposes but they cannot be depended solely especially in the learning of a foreign language. The reason is that they will cater to the development of cognitive skills of the users. Let the technology be ruled by human beings and not vice versa.

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Part III
Designing Multimedia Materials

Designing materials for Multimedia use is the focus of the articles presented in this part.

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MULTIMEDIA ENHANCED LANGUAGE TEACHING CAN NEVER BE A SUBSTITUTE FOR CLASSROOM TEACHING

G. Immanuel
Aalim Muhammed Salegh College of Engineering
Chennai
Tamilnadu, India

Introduction

There is an argument that e-teaching with all multimedia components is the innovative and inspiring way of maintaining a learning process. Traditional models are considered to be inferior or less efficient. There is no finding to support this argument and this paper tries to show that classroom teaching / Traditional teaching methods are more permanent and natural than the e-teaching methods.

Classroom teaching is not a new practice, Even before the traditional school setting was formulated, many children were educated in large groups from a family member or friend. Although this form of education is widely understood and used, there is another form of education that has recently come into practice within the last century and has started to receive great recognition and popularity; this is Multimedia enhanced teaching. Inspired by rapid development of technology from the 1980s, computer has now become an influential component of language teaching and learning pedagogy. Educators do consider that utilizing computer technology and its attached Language Learning and teaching programs can be convenient to create and collaborative learning environments to students as they move through various stages of second Language acquisition.

Twenty five years ago, there were no personal computers. Today, almost 30% of the households own a PC, and more than 60% of the students use computers in schools and colleges. There seems little doubt that the personal computer will become as prevalent around the world as the TV and VCR, perhaps in some form replacing these appliances by the beginning of the new century. The past two years have seen greatly expanded access to the Internet, a global telecommunication networks using satellite and ground

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relays, especially since the advent of easily used graphical software (referred to generically as the World Wide Web). The search for effective teaching and learning methods has progressed through the use of various media, including text, radio, broadcast TV, audio and video tape and early incarnations of the Computer Assisted learning. Multimedia enhanced language teaching has been part and parcel of education and Training in the western countries for many years now. Recently internet took the world by storm in the field of education and online teaching and learning has become accessible to people in various parts of the world. The advancement in technology and communication has made teaching and training possible anywhere, anytime.

This brings me to the following Questions:

- How relevant traditional methods of teaching like classroom teaching are in the modern world?

- Will multimedia enhance teaching replace traditional classroom teaching?

- In this world where independence and individualism is much sought after, will a teacher or a trainer become dispensable?

This study tends to answer the above mentioned questions.

Learning

Learning is nothing but acquiring new knowledge, behaviours, skills, values, preferences or understanding, and may involve synthesizing different types of information. Human earning may occur as part of education or personal development. It may be goal-oriented and may be aided by motivation. A person who undergoes such acquisition process is called a learner. Here Learners are divided into two categories;

1. Motivated Learners
2. Unmotivated Learners.

Teacher Vs Motivated Learners:

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Motivated learners refer to those who have a drive to learn and an unquenchable thirst to acquire knowledge. The function in these learners enable them make optimum use of the available resources. Motivated learners are mostly independent or less dependent on others when it comes to a learning scenario. It might seem like these learners do not need any external facilitation. But that's not true. It is the teacher who scintillates the metaphysical, unfamiliar, concepts or areas through which even those learners fathom amazing ideas and substances that are useful for growth, development and progression. When it comes to the technological arena of learning these learners find absolutely comfortable with technology and learning through multimedia but I feel their learning is incomplete. How is it incomplete? The further study explains.

Teacher Vs Unmotivated Learners:

Unmotivated learners at the outset need motivation. These learners either never start learning or finish learning language through online teaching. When these learners find it difficult to cope with the ordinary traditional teaching / learning environment where is the question of them feeling comfortable with learning language through multimedia. These learners lack adequate computer knowledge which at first level has to be taught exclusively by a teacher in a traditional class room for which, it is necessary that a teacher must be familiar with computers. A teacher who doesn't possess computer knowledge, if kept away from teaching these learners, telling, this is a technological era and no room for traditional learning – What will happen to these kinds of learners ? What will be their future?

E-Learning

E-learning is a relatively new form of educating students/ learners through the use of computers as an instructional medium. E-learning is used to educate people of all different stages. It has been around for 20 years and is used for students in primary school, secondary school, and even university level courses. Once you have reached a higher level, the students are expected to be able, in some ways, to teach themselves from the materials they are given. Often these materials include Multi-Media Online

activities, print materials, Web, e-mail, Internet, CD-Rom, computer software, audio / video conferencing, audio/video tapes and TV or radio.

E-Teaching

E-teaching or electronic teaching is a method of teaching using the internet, computer networking or computer enhanced teaching. The learners are accompanied by the teachers into the computer lab multiple times a week and engage the students in different subjects.

Loose ends in E-teaching

Despite many advantages, the loose ends that are going to be numbered are the most important / most crucial aspects in learning and teaching which the e-learning or e-teaching couldn't encover.

1. Special skills needed.

2. Minimal Social interaction

3. Satisfaction

4. Handling Situation

Special Skills Needed: In order to achieve success in learning or teaching, the learner or the teacher requires special skills. As discussed earlier, through the software's used are user friendly, still it requires relevant talent to operate it so a person (a teacher / a learner) lacks such special skills, may find technology not only to be intimidating and overwhelming, but also confusing or frustrating. Although some teachers may prefer e-teaching to classroom teaching, they may find the resource they need to be out of reach. In this situation the teacher or the leaner may become demoralized or in other words such teaching or learning method would create a demoralizing effect.

Conclusion

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Rich Environments for Active Learning (**REAL)** is most crucial in the present world scenario. A teacher is the person responsible to create an environment rich with knowledge acquisition and presentation. It's a well known fact that the students need an environment to learn or in other wards it is the teaching environment that adds meaning to the learning process of the students. I personally feel that a classroom teaching provides a real environment for natural growth of an individual in the language learning process. Facing life is nothing but encountering real time situations in a natural environment as discussed earlier.

Computer will not replace teachers because they cannot do most of the significant things teachers can: Lesson planning, individual counseling, preparation and selection of materials, evaluation of process and product and so on. Likewise Multimedia enhanced teaching cannot replace traditional way of teaching because e-environments cannot provide a realistic natural setting which makes learners to become active participants enhancing experience of day to day living through various exposures.

In this era of rapid growth in science and technology, whatever may be the degree of advancement it could be said that nothing could substitute a classroom teaching and the efforts of teaching community. Teachers and trainers are indispensable forever.

The greatest danger in modern technology is not that machines will begin to think like people but that people will begin to think like machines. **Patricia Fripp**

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DESIGNING LANGUAGE LEARNING EXERCISES FOR MULTIMEDIA

N. Nadaraja Pillai, Ph.D.
Central Institute of Indian Languages
Mysore 570 006
Karnataka, India

Exercise is one of the important factors that enrich the learning without which the learning and the skills developed will definitely be hampered. The place of exercises can be reiterated with the objectives proposed in the syllabus. Normally, the teaching and learning process expresses the place of the exercises.

CURRICULUM	SYLLABUS	TEACHING MATERIALS

EVALUATION	ACHIEVEMENTS	LEARNERS	TEACHER
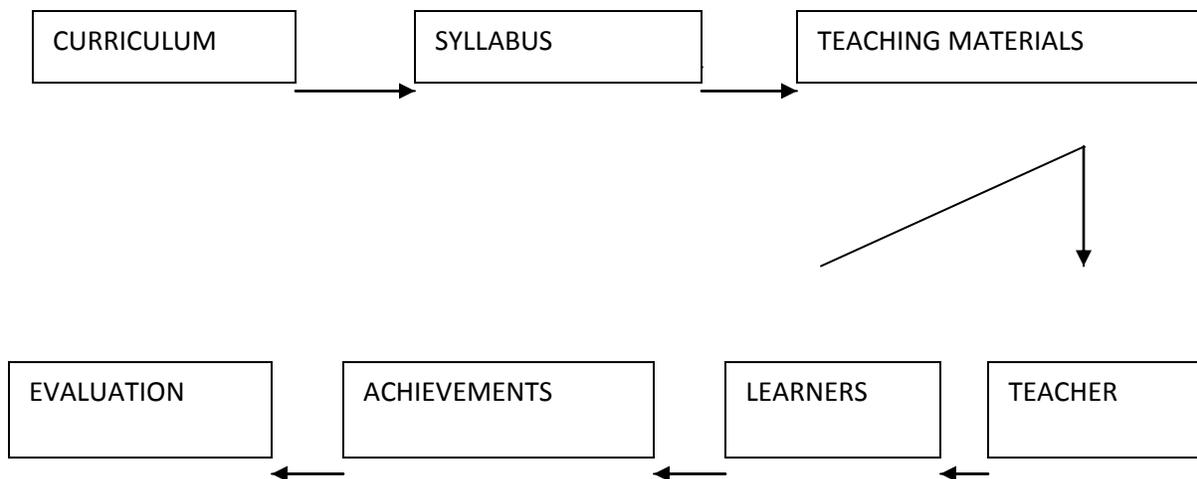
The syllabus gives the following details

1. Gives a list of basic objectives to be achieved

2. Gives the objectives at each levels of learning depending on the need, context, etc.

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of the learners

3. Gives the details of the lessons in the teaching materials

4. Gives the roles of supplementary and supportive materials in the form of audio,

   video or multimedia.

5. Gives details of what should go as text or audio or video or multimedia

6. Gives details of the contents

7. Gives details of the language structures to be used; may be structurally graded list

   or situation based or communicative competence based.

8. Gives the list of approaches to be followed by the teachers to enhance their

   teaching

9. Gives the list of teaching contexts

10. Gives a list of activities or exercises to be followed and the details of them to help

    the teachers and materials producers

11. Gives a list of language skills, sub-skills, communicative skills, etc. to be

    imparted to the learners

12. Gives a list of structures, words, etc. lesson-wise and class-wise

13. Gives a list of common errors, the ways to analyze them and the remedial lessons

    if necessary to eradicate the errors.

14. Gives a list of features to be tested

15. Gives the ways to analyze the errors committed by the learners, etc.

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These steps are possible only when the teaching takes care of the activities or exercises to be administered in the class or added in the textbooks or materials given in any media, since the exercises play a vital role in the development of the language skills. As has been shown in the diagram, the exercises depend on the content as well as the language objectives proposed by the syllabus. It says that there will be two kinds of exercises to fulfill the objectives, namely, exercise for the content of the lesson and for the language used in it. This may be represented as:

```
            ┌──────────────────────────────┐
            │  Teaching methods & techniques │
            └──────────────────────────────┘
                           │
                           ▼
  ┌─────────┐                      ┌─────────┐
  │ Errors  │                      │ Skills  │
  └─────────┘          ▼           └─────────┘
                 ┌──────────┐
  ┌───────────┐  │ Syllabus │
  │ Exercises │  └──────────┘
  └───────────┘                    ┌────────┐
                                   │  Time  │
                                   └────────┘

                                   ┌──────────┐
                                   │ Content  │
                                   └──────────┘

  ┌─────────────────────┐
  │ Language structures │
  └─────────────────────┘


                ┌────────────┐
                │ Objectives │
                └────────────┘

  ┌─────────────────────┐        ┌─────────────────────┐
  │ Language Objectives │        │ Content objectives  │
  └─────────────────────┘        └─────────────────────┘
```
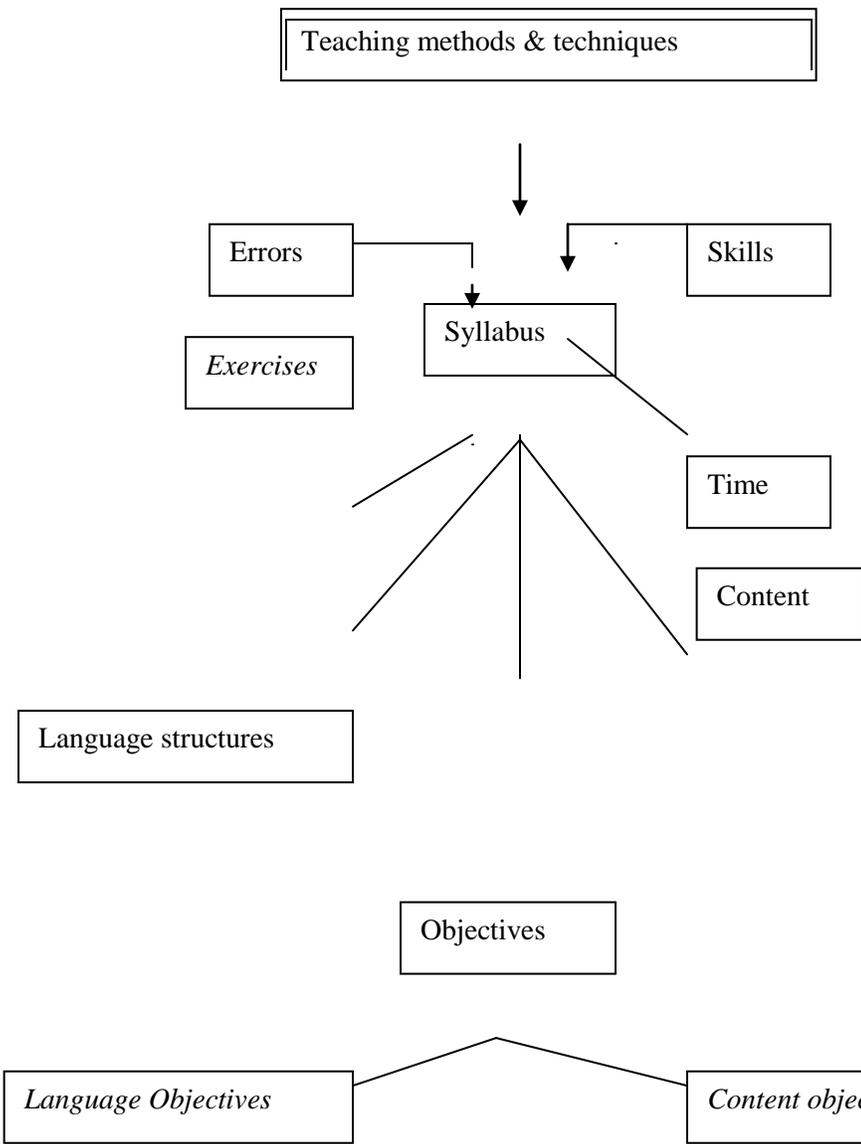
Keeping the above facts in mind exercises are prepared for the textbooks in print media. However, the same for the other media like audio and video or multimedia differ in their design, instructions, and expected result also. Unlike the printed exercises where the instructions say what is to be done by the learner and the correction depends on the time available to the teacher and the manner in which the teacher corrects, more often the correction carried out is a failure. They are not that much attractive. The exercises designed in the multimedia materials have surpassed all these hurdles and facilitate the learner very much to acquire and develop his skills. As every one of us knows that multimedia is a combination of text, graphic art, sound, animation and video delivered to us by computer. It may or may not have interactivity component. The combination of all these components electrifies the thought and reactions thereby the materials given center around the learners' mind. Multimedia excites all the senses: the eyes, the ears, the mouth, the body and most importantly the head. Hence the exercises given in multimedia have more effect on the achievement of the learners.

Design

Exercises in the multimedia are designed under the simple philosophy that the materials are edutainment based. It has both the educative as well as entertainment factors in equal proportions. The learning is done in an entertainment way rather than rote memory, or doing exercises with out any interest.

As has been discussed elsewhere a good exercise should have the following features. The *language of the exercises* should be easy for the learners to follow. We expect the learners to notice the following while doing the exercises. Since all the possible facilities are given in the multimedia exercises, the learners are expected to *notice* the form, the sound, the visuals, the meaning, the instructions given etc., to complete the activity. Henceforth we call the exercises as activities since the learners' show more interest in doing activities rather than exercises.

It is also to be noted that in a multimedia package one can have a *bank of activities* unlike the printed book where there are lot of restrictions.

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In order to express oneself the learners have to develop all the four basic skills. There can be lot of activities on the development of these skills. Take for example:

For developing or for testing listening skill the following items are to be given with them the learner will be able to

1. Recognize sounds, words, phrases, etc.

2. Get the general idea, remember salient points, predict what's coming next.

3. Understand the discourse type.

4. Get used to listening to different voices and different length of time.

5. Get the ability to screen out what is not necessary for the comprehension of the passage.

6. Deal with dialects and accents.

7. Interpret the message against the background

For developing or for testing speaking skill the following items are to be given with them the learner will be able to

1. Make individual sound and combine them.

2. Produce correct pronunciation of the words, phrases, etc.

3. Use intonation

4. Work with appropriate rhythm and pace

5. Bring out ones own style of speech

6. Interact with people appropriately, correcting the messages to be conveyed

7. Describe, agree, argue, plead, etc.

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For developing or for testing speaking skill the following items are to be given with them the learner will be able to

1. Know letters, words and phrases

2. Recognize different formats such as headlines, styles, genres, etc.

3. Skim, scan, predict, guess and remember

4. Relate what is read top the experience of the own

5. Read and comprehend

6. Read aloud

7. Interpret what is said

Though writing can also be developed through multimedia normally checking makes the activity difficult hence it is often avoided.

Since there is ample scope for the use of all the features of multimedia, the activities are so designed that they not only attract the learners and involve themselves, but also the opportunity to do more and more on the same language feature is given.

Opportunity for self correction is given in the multimedia. Errors are often corrected giving encouragement and the correct answer is appreciated then and there. This psychological approach gives them encouragement to do further and improve their skills. The visuals are given not only to attract them but to give them clues also. It is needless to say about the impact of the visuals in the learning materials.

Take for example a word building exercise the clues are given in the form of visuals or by giving different word clues. Once the word is formed there comes an appreciation. The design of the exercise/activity, normally, is done keeping day to day situations or environment on effaces in the life. To design the activities the following are followed to suit the situation

1. Integration of all the four skills class wise and lesson/unit wise

2. How to integrate the skills: how on the same content different skills may be developed, etc.

3. The integrated approach may contain some focus activity also.

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4. The language skills thus framed should contain some process skills also. In other words these language skills will have sub skills focusing on how these skills may me integrated to the surroundings and life.

5. The style of the language used in the activities must be learner centered.

6. List of activities and their objectives are to be given directly

7. Details of the techniques to be used in completing the activity should also be given.

There is no limit for the focus themes but it all depends on how many lessons and how much time available, etc. matters much. Under each focus themes we may have different exercises/activities designed. An essential consideration when looking at activity is the mental effort it encourages. There may be some uniformity as far as weight ages to different themes are concerned.

There may be a list of activities to be done. Take for example:

1. obeying to instructions
2. recognizing speech sounds
3. practicing pronunciation
4. knowing the details given in
5. listening to different kinds of speeches
6. describing things
7. narrating incidents
8. giving opinion
9. role play
10. creative listening

11. giving summary
12. observation and giving decision
13. planning
14. analyzing points before judgment
15. Reading with comprehension and answering questions
16. exchange of information
17. analyzing the text
18. processing information
19. using dictionary

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20. dictation

21. paraphrasing

22. guided writing

23. creative writing

24. finding solutions to problems

25. free writing

26. games after some activities are completed

27. self correction

28. knowing about grammar and the related activities

29. using punctuation marks

30. constructing stories – text construction- based on themes given

These are only a sample of activities. Imagination and experience in the field can bring a lot of activities for every level of learning.

Keeping these in mind when we try to utilize the same for the teaching of a language, we need organizing, predicting and problem solving skills. That too it is really a challenge to produce an interactive multimedia, which requires lots of imagination, predicting what the users need, the area of errors committed by the learners, knowledge of both the grammar and language use, etc. and the skill of providing a structure of linked elements through which the user can navigate. This will make the activity materials a hypermedia.

Although the definition of multimedia looks a very simple one, making it to work will be very much complicated. Unless one has an idea of how to use the multimedia tools and technologies to weave them together, the materials and activities so produced will not be of any use.

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MULTIMEDIA BASED LEARNING THROUGH MOBILE PHONES

K. R. Ganesh Ram
Founder & CEO, MobileVeda
ganesh@mobileveda.com

Mobile Learning, the Concept

Recent developments in the field of Information and Communication Technologies (ICT) in general and global wireless technologies in particular that includes 3G networks, GPS, GSM, GPRS and satellite systems

And other communication technologies including Wi-Fi, WiMax and Bluetooth have created a wide array of new possibilities for the common man. When these technologies are used in the learning paradigm, mobile learning emerges.

Mobile learning, or mLearning, has been defined as learning that takes place via such wireless devices as mobile phones, personal digital assistants (PDAs), or laptop computers. In the different definitions encountered in the literature, it is only the employment of specific types of technology that seem to differentiate mobile learning from other forms of learning. However, when considering mobility from the learner's point of view rather than the technology's, it can be argued that mobile learning goes on everywhere – for example, pupils revising for exams on the bus to school, doctors updating their medical knowledge while on hospital rounds, language students improving their language skills while traveling abroad.

All these instances of formal or informal learning have been taking place while people are on the move. A definition of mobile learning should therefore be widened to include:

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"Any sort of learning that happens when the learner is not at a fixed, pre-determined location, or learning that happens when the learner takes advantage of the learning opportunities offered by mobile technologies."

Mobile Learning, Technology and Applicability

There are numerous platforms, standards, specifications and technologies involved in Mobile Communication domain, right from the underlying operating systems, the application layer, Graphical User Interface (GUI) and so on. The interactive applications can be developed in J2ME (Java 2 Micro Edition) for most of the GSM mobile phones including Nokia, Motorola, SonyEricson, etc., (running on Symbian OS) whereas for smart-phones and PDAs, it would be required to develop applications using .net (for Windows CE OS) and on other proprietary iPhone SDK (for iPhone) and so on.

Hence, there would be more complexities in porting for compatibility of applications among different vendors and device platforms.

To overcome this situation, many recent studies suggest use of Mobile Web for developing mLearning applications. Since this is similar to our regular web (but strict standards has to be followed), the site will be accessible through a mobile web browser (in most of the current generation devices, a browser is inbuilt within the phone itself, apart from that we could use Opera Mini the leading Mobile web browser). LMS systems that are deployed on a web server could be connected through the mobile web browsers to deliver adaptive / blended learning solutions.

This is practically easier to deploy when compared to applications. But still there are certain limitations in this approach which are noted below.

- Internet connectivity (GPRS / EDGE) service has to be enabled as a separate data plan (or else 10 paisa per 10KB bandwidth is charged) which is costly for an average learner in India.

- Even when data plan is subscribed, the current speed of 2G / 2.5G Networks would not be sufficient to deliver any multimedia content through browser. (only text and images along with questions / tests can be provided)

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The limitations are based on current generation networks. Once 3G services are launched, complete learning solutions (including live streaming of lectures / classes and live interactions / tests) can be provided through mobile web standards based implementations itself.

Mobile Learning, for Today

There has been too much hype in the launch of 3G networks and it is clear that in the initial stages of launch of the services, the charges would be more (similar to the launch of mobile services 10 years ago). So time taken for the data plans through 3G and prices of compatible handsets to be reachable to common man's pocket would anyway between 2 – 3 years from now.

So, for Today the optimum solution would be to prepare multimedia learning materials in the forms of short video clips, animations (optimized for small screen) and even small images that would serve as reference on subjects. Such content can be packaged as normal video clips (3gp / mp4 formats) that current generation mobile phones support and mLearning should be kick-started in our country in a large scale. This approach would not require a bare minimum investment and an appropriate delivery mechanism can be deployed.

The task in hand is to use the existing open source and other technologies to build such mLearning content repositories that could be packaged in any form that could be delivered through any standards, technologies and networks of today and tomorrow. To achieve this, developing guidelines and standards on mContent (similar to eContent guidelines set forth by many institutions recently) creation should be our current focus.

Mobile Learning, applicability for the billion people

In the initial stages, there are number of criticisms on limitations of mobile learning especially about the limited screen / display size of mobile phones that poses a challenge on setting up right standards on content creation and optimization. But the fact that the mobile is the 7th mass media (ref below list)

List of Mass Media

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1. Printing Press	5. Television
2. Recordings	6. The Internet
3. Cinema	7. Mobile
4. Radio	

There are five unique benefits of mobile as a mass media

1. First truly personal mass media	4. Media with a built in payment channel
2. First always-on mass media	5. Offers point of thought
3. First always-carried mass media	

It is quoted that "Mobile is the only mass media that can do EVERYTHING the previous six can do"

A right approach in mLearning would be certainly beneficial to the billion people in enriching their knowledge.

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METHODS TO EXPLOIT AND DISSEMINATE AUTHENTIC MULTIMEDIA MATERIAL FOR TEACHING

J. R. Nirmala, Ph.D.
R. M. K. College of Engineering and Technology
Vijainir2000@yahoo.co.in

Multimedia: What it is and what it can do for our students

Whatever our views on the use of software for teaching language, it is clear that advancements in technology will affect current teaching practices and challenge our perceptions of the use of computers in the classroom. Parallel Multimedia is the digital integration of

- Text (written)

- Graphics (the interface of the program)

- Animation

- Audio (dialogues, stories, sound effects)

- Still images (pictures and visual stimuli) and

- Motion video

Through the integration of all these media, the learning experience becomes an interactive one mirroring everyday experiences.

In the context of the language classroom, teachers would already be familiar with all of the above teaching tools. This leads us to a natural point of comparison between multimedia and more traditional teaching materials.

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In this article the discussion is made how to design features of authentic multimedia materials and disseminating of interactive multimedia packages for language learning/ teaching. Different approaches may be employed in the design of interactive multimedia packages. Multimedia materials, however, combine all these media providing teachers with a package offering flexibility and ease of use as well as more "realistic" contexts for language practice.

The authentic interactive multimedia packages

- ❖ create a rich learning environment by increasing students' exposure to the target language and make use of authentic contexts.
- ❖ emphasize on experiential, individual learning makes the learning process more natural.
- ❖ provide contexts and allows for the integration of sub skills; learners can listen to texts as they read and exercises are often multi-skilled incorporating listening, reading and speaking tasks.
- ❖ can make the whole process of language learning involvement and motivation by providing an exciting, dynamic and autonomous learning environment. The shift in control from teacher gives a sense of liberation to the students
- ❖ cater to a wider band of learners than other classroom materials, as students are encouraged to work at their own pace and to make choices according to their preferred learning style.
- ❖ have clear implications for top and bottom layers of the class and the combination of sound, visuals and interactive tasks appeal to students to have different learning styles.

While good multimedia applications will do all these things and much more, this may result in a feeling of waste of time and energy in the case of mediocre students leaving a sense of loss which could have been gained more effectively by using other methods and materials.

Therefore, the teachers are needed to develop their own criteria for evaluating multimedia materials.

When we are preparing multimedia package based on authentic materials for learning any language, the package must include several modules related to educational, social and cultural issues as well as language activities. The package should have the following components

- ❖ a video program with a related workbook,

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❖ a CD-ROM with related audio-visual activities and

❖ a computer disk with CALL activities

Before preparing the package, the authentic video and newspaper materials should be recorded/ collected, analyzed and selected in order to develop a product, which should be based on solid principles. Also to realize the importance and the objective of the material, we have to offer the possibility of 'doing things with words' for real communicative purposes.

From the language acquisition point of view in particular it is important to combine tasks: viewing, listening, understanding and speaking combined with reading, understanding and writing. By viewing and listening, the listener/viewer tends to recall the background situation better. The social context and the gist of the story, its actions and the related conversations are also understood better. In addition to this the listener/viewer can make inferences which can be critical to the comprehension of the discourse as a whole such as interpretation of explicit/implicit meanings of the speakers' sentences whilst by reading the reader recalls more of the structural features of the sentences. Reading can lead to an understanding of the sentence while viewing and listening can lead to an understanding of the speaker's intentions. If learning a language means using a language for specific functions, then the combination of viewing and listening with reading are important skills not only for speaking but also for improving writing skills.

Therefore, combining the four linguistic skills in order to augment oral and written competency is important, when preparing the authentic materials. The content of a written message and its linguistic forms (Syntax & Semantics) can be improved by an accurate analysis of both the oral messages and the written texts. Moreover the sense of identification between the viewer/ listener/ speaker/ writer and the interpersonal involvement in the learner can create an oral/literate band. With these principles we can develop a flexible set of procedures and activities for

❖ Different learner needs: independent as well as guided / class room learning/teaching.

❖ Different levels : Beginner / Intermediate / Advanced

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However both the teacher and the learner should be aware of a set of general principles which can help the educational as well as the linguistic approach to authentic materials.

- ❖ Using authentic multimedia material to teach language & culture.

- ❖ Analyzing language in context.

According to these first two principles audio- visual as well as written material has to be used to present a culturally relevant context, to recognize/identify/focus on linguistic forms in that context. And to develop the ways in which those forms are connected within the text.

For Promoting the language awareness, the learner should be made aware of the way the forms are interrelated and how they work to create meaning. At the same time the materials should stimulate interaction. What is needed is the ability to organize ideas/sentences in oral modes (listening/speaking) in real time and in a normal conversation/ interaction between the sender and the receiver of a message -the process of producing a reply must be instantaneous.

The materials of the course should be designed by the language teachers with the suggestion from the multimedia experts.

THE BORED OF EDUCATION

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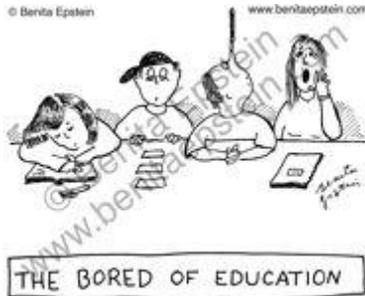
TO STIMULATE THE LEARNERS

Language Expert

COURSE CONTENT

Course Designer

Multi Media Expert

Material preparation group
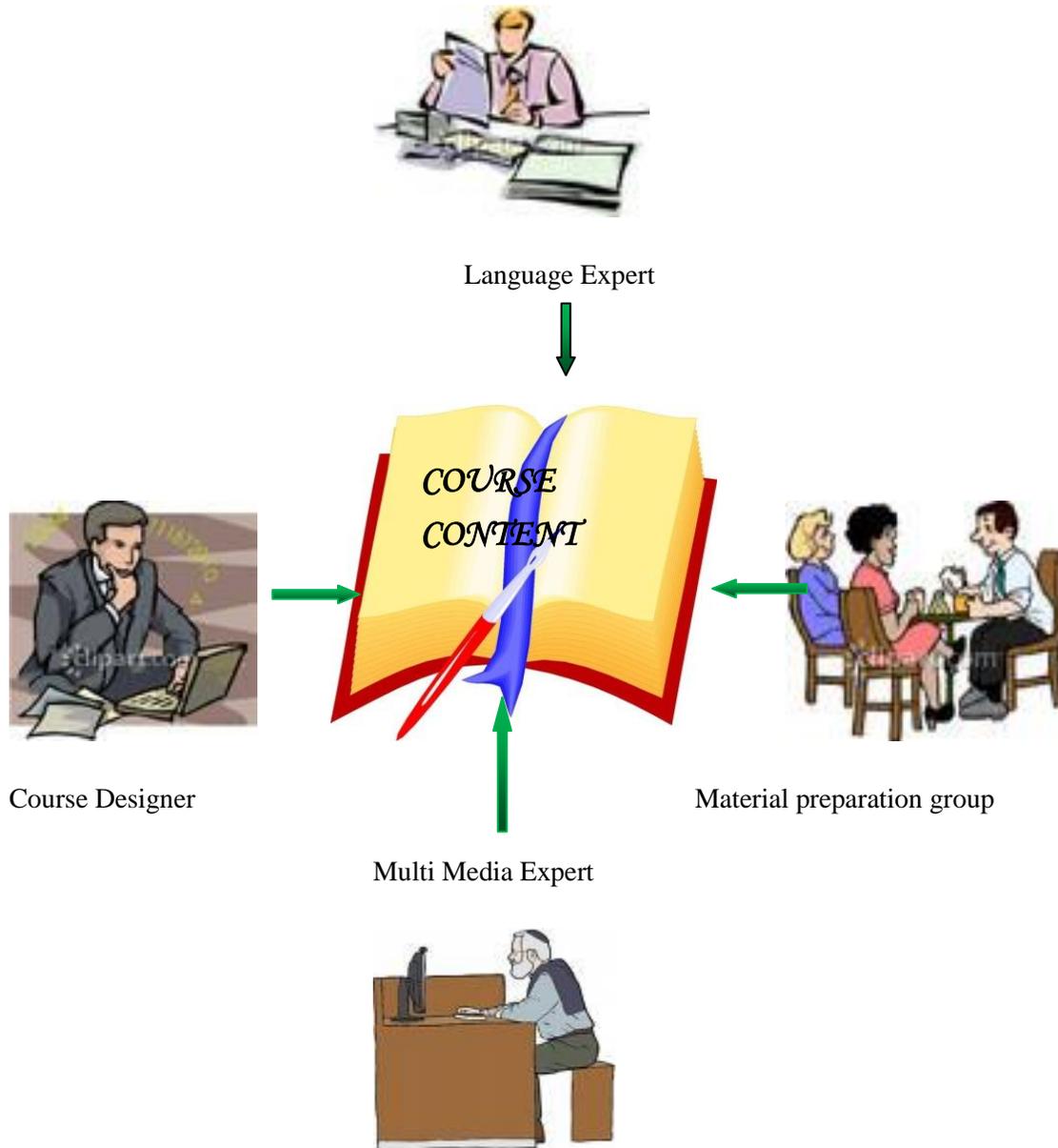
This kind of interactive multimedia materials is the challenge to use its potential to meet learner needs even more fully.

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Freedom to opt out of the technological revolution may in future become more limited. As Ray Clifford stated in 1987, "technology will not replace teachers, but teachers who use technology will replace teachers who don't." Nowadays, modern computers with sound card and CD-ROM drive permit a form of language learning in which interactive multimedia programs serve as a partial substitute for teacher guided learning.

Sample Teaching Materials

This is a very simple task language teachers can create on their own using multimedia. Sample Multimedia Material for Story Telling Activity

Enormous quantity of teaching material developed by linguists and technologists are available in the web world. All the language teachers has to do is to search, locate, choose, download, edit and use it judiciously to cater to the needs of the learners.

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THE INFLUENCE OF TECHNOLOGY ON ENGLISH LANGUAGE TEACHING

D. David Wilson, Ph.D.
Karunya University
Coimbatore 641 114
Tamilnadu, India

1. Introduction

The widespread availability of computers are causing tremendous change in English language Teaching. Asian countries in general and India in particular are at the heart of this change. This paper briefly examines the way in which computers have contributed to English Language Teaching with pedagogical applications and by helping us to understand the nature of the language. It is also to be noted here that the Internet and the resulting computer mediated communication (CMC) has reached a stage even to change the language itself. The implications of such changes are then discussed in two perspectives in this article. 1. English as International / Global language- That is, English is no more a foreign language or Second language. 2. Promoting task-based approaches by shifting away from traditional notions of curriculum and syllabus.

2. The Growth of English Language Teaching

The advance in technology has made it possible to use modern facilities for language teaching and communication. The growth of ELT is fuelled by today's technological advancements such as Internet, e-mail and websites. According to David Graddol (2000) in the year 2000, there were about a billion English learners and he ensures that this number will have doubled within a decade. It is also to be noted that over 80% of information stored on the Internet is in English. There are more non- native than native users of English Language. The diversity of context in terms of learners' age, nationality, and background has become a defining characteristic of ELT today.

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The technological advancements have played a greater role in the growth of English and the way in which the language is used on Internet has largely facilitated the growth of English language especially when the computer is widely available to many in affordable price. Warschauer (2002) explained this change in terms of conflict between local identities and globalization of the English language while Jarvis and Atsilarat (2004) stated that the Internet might be a contributory factor in shifting away from a communicative towards a context- based approach to language teaching pedagogy. It is the middle and upper classes in virtually every country that have greater access to computers. The Asian countries like India, China are experiencing massive growth in the computer as their economies develop and change. This change necessitates a revision of traditional definitions of what constitutes the English language and its shifting from English as a Foreign Language / English as a Second Language to English as an International Language / English as Global Language.

3. Contributions of Computers in ELT

For a better understanding of the impact of computers on ELT, it becomes necessary to look back in the history of language teaching how their role has developed. This section is divided into two parts namely pre-internet era and the Internet era.

3.1 Pre-Internet era

In Pre-Internet days, computer Assisted Language Learning (CALL) developed and concerned itself with the pedagogical applications of the technology. People used the computer to develop and practice their English. Pre-Internet CALL was limited to text-based provisions. Today novelty of CALL has gone for many who use computer as part of their day today life. And also in the use of computers for assisting and

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understanding of what constitutes the English Language and how it works. Corpus Linguistics and the arrival of lexis as an item to be included within the syllabus began in the 1980s and continue today.

This established analysis of language both written and spoken form has helped to examine the frequency of words. It has given us insights into the most useful vocabulary to teach, and facilitated the emergence of the lexical syllabus. The computers have had a role in pedagogical practice and in analyzing language. These two aspects have been further developed by the arrival of the Internet. It is to be noted here that the role of computer did not affect the language itself.

3.2 The Internet era and Language Change.

According to David Crystal (2001), the Internet with its element of communication gives rise to new vocabulary, which changes the language partly. There are number of words which did not exist before the Internet era. For example, e-mail, chat group,

Outbox, inbox, Google, E-learning, online, offline, and boot and so on are a few of them evolved from Internet. This change in the language is rapidly evolving and does not have a long history to inform syllabus designers and ELT practitioners. Emails do not follow punctuation conventions. SMS texts and email have plenty of spelling mistakes. Acronyms and abbreviations are largely used. Grammatical and syntactical mistakes are not mainly focused or concerned with. All these changes are normally accepted depending on the context that they convey the intended message to the receiver.

 Emails and SMS texts use mostly the version of spoken English. In real time chat rooms and mobile messages people make use of a kind of unique version which mixes both spoken and written form. The question remains unanswered that how far we can allow such changes on language content in Teaching.

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Sometimes, the language generated from these technological devices is completely different from what we have known already. For example:

Pwr 4 Uth   -Power for Youth

C u l8tr   - See you later

V4U   - We for you

? r U?   - Where are you?

? 2 do!   - What to do!

This variety is not taught in any foreign language classroom that one can go and learn it. It is not a foreign language either. It is a variety of English used in technologically enhanced communication. David Crystal (2001) terms it a 'Netspeak' – a language variant. It is almost around the world used and easily understood in the context by receiver. So it is very clear that Internet is definitely impacting upon the ways in which we use language and what constitutes language.

Within a traditional approach to syllabus design we arguably need to plot these new items of language and include them in our programmes. But before entering into these implications for pedagogical practice, the potential impact of change on our well- established notions of EFL and ESL is to be explored.

4. Implications

As it was stated in the introduction, the implications of the changes caused by computer technology are discussed under two perspectives.

4.1 The shift of English from EFL or ESL to EIL or EGL

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The present technological advancements have changed the world into a global village so as to state there is no foreigner. In other way, that everyone knows everybody and communicates interacts and bargains with the every other. A few years ago, the long established British newspaper of the profession 'EFL Gazette' changed its name to the 'EL Gazette'. One may ask what caused this change or in what way Internet be contributing to such change.

The terms EFL and ESL carry with them the connotations that the language does not belonging to the users; it is foreign, or it is second. In fact, today these users have outnumbered the native speakers. Philipson (1992) observes that these connotations are contributory factors in the manifestation of a linguistic imperialism. Here, an implied uneven power relationship is centered on ownership. The above definitions tend to be based around the notion of learners and users in physical spaces, which automatically includes the virtual world of the Internet.

4.2. Towards a Task-based approach

The conventional ELT syllabus lists learning items in terms of structures, functions, notions, and vocabulary, which integrate the four language skills namely reading, writing, listening and speaking. This approach has been characterized as product-oriented because it focuses on what is to be learnt or produced (White, 1988). The problem here is the input cannot be equated with output. That is, teaching cannot be equated with learning.

An alternative approach can be characterized as processes -oriented because it focuses not on items to be taught and learned, but on what the learner does with the language. A task-based approach is very much process-oriented (Jarvis, 2004) because it focuses on 'learning through doing'. Tasks mean different things to different people. Hence, it is useful and important to distinguish between pedagogic

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and authentic tasks. Pedagogic tasks invite students to do things, which are unlikely to occur outside the classroom. For example: arranging jumbled sentences. Fill in the blanks etc. With authentic tasks students are asked to complete activities, which are likely to be carried out in real life. For example: booking a flight ticket, drawing a tour map, a conversation in the market place, an enquiring in the police station etc.

5. Conclusion

The above discussion reveals that computer not only impact on the way English is used but also impact upon the language itself. This trend seems to go hand in hand with task-based approach and represents challenges for everyone involved in ELT. For educators and practitioners there is a changed dynamic in which computers have now become much more than a tool or a tutor for developing language skills. .Language teaching education is entering into a new and uncharted phase where students, unlike in previous phases, interact with each other and the world via the computer. There is a great deal of work that has focused on the value of computers in learning or second language acquisition.

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REFLECTION AND EVALUATION THROUGH ELECTRONIC PORTFOLIOS

Rita Rani Mandal
Lady Wellingdon IASE
Chennai
Tamilnadu, India
mandalrita@rediffmail.com

An innovation of the early 1990s, an electronic portfolio combines the use of electronic technologies to create and publish a portfolio that most likely will be read with a computer or viewed with a VCR. Artists have maintained portfolios for years, often using their collection for seeking further work, or for simply demonstrating their art; an artistic portfolio usually includes only their best work. Financial portfolios contain a comprehensive record of fiscal transactions and investment holdings that represent a person's monetary worth. By contrast, an educational portfolio contains work that a learner has selected and collected to show growth and change over time; a critical component of an educational portfolio is the learner's reflection on the individual pieces of work (often called artifacts) as well as an overall reflection on the story that the portfolio should tell.

Definition of Electronic Portfolio
   Grant Wiggins' defines a portfolio as:

" a representative collection of one's work. As the word's roots suggest (and as is still the case in the arts), the sample of work is fashioned for a particular objective and carried from place to place for inspection or exhibition." (Wiggins, 2000)

Educators in the Pacific Northwest, through the Northwest Evaluation Association (1990), developed the following definition of a portfolio:

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A portfolio is a purposeful collection of student work that exhibits the student's efforts, progress and achievements in one or more areas. The collection must include student participation in selecting contents, the criteria for selection; the criteria for judging merit, and evidence of student self-reflection.

"Portfolios can serve multiple purposes," Barrett told Education World. "They can support learning, play an assessment role, or support employment. The purpose dictates the structure and contents of a portfolio."

The three most common types of portfolios are:

the working portfolio, which contains projects the student is currently working on or has recently completed.

the display portfolio, which showcases samples of the student's best work.

the assessment portfolio, which presents work demonstrating that the student has met specific learning goals and requirements.

Process Orientated (**Developmental Portfolios**)

Process oriented portfolios report about the growth of a learner. They document the learning process by containing drafts of documents, reflections on the process and obstacles encountered. They may be organized into skill areas or themes, yet each contains samples of the student's work from the beginning, middle, and end of a learning unit. For example, there may be three drafts of a short story: a preliminary draft, a reworked draft reflecting teacher and peer feedback, and a final draft. The student can comment on the ways one is better than the other. In this manner, the artifacts can be compared providing evidence about how the student's skills have improved. In any number of ways, in writing or perhaps during a parent-teacher conference, the student would reflect on the learning process: identifying how skills have changed, celebrating accomplishments, and establishing present and future challenges.

Product oriented portfolios (Certification Portfolios)

Product oriented portfolios are collections of work a student consider his or her best. Some people also refer to these as Showcase Portfolios. The aim is to document and reflect on the quality and range of

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accomplishments rather than the process that produced them. It generally requires a student to collect all of their work until the end, at which time they select artifacts that represent work of the highest quality.

The Need for Electronic Portfolio

Traditionally, portfolios have been stored in boxes and three-ring binders. Although this format works fine for paper and other print-based materials, it misses many other ways of communicating ideas. Over the past decade, many people have found electronic portfolios as an effective way to more clearly present information not only through text, but also through visuals, audio, and video formats. Documents can be stored on hard drives, Zip disks, or CD-ROM in many digital formats such as text documents, picture files, web pages, digital video, and presentation files. They can be stored on hard drives, Zip disks, websites, or CD-ROM.

The power of a digital portfolio is that it allows different access to different artifacts. The user can modify the contents of the digital portfolio to meet specific goals. As a student progresses from a working portfolio to a display or assessment portfolio, he or she can emphasize different portions of the content by creating pertinent hyperlinks.

The ability to use hyperlinks to connect sections of portfolio content is one advantage of using electronic portfolios instead of paper portfolios. A paper portfolio is static. In addition, a paper portfolio usually represents the only copy of portfolio content. When the portfolio is in digital format, students can easily duplicate and transport it.

The Process of Portfolio Development

Creating an electronic portfolio can seem daunting, but it becomes less arduous if viewed as a series of stages, each with its own goals and activities, and requiring different types of software. Most portfolios programs begin with the working portfolio. Over time, a student selects items from the working portfolio and uses them to create a display portfolio. Finally, the student develops an assessment portfolio, containing examples of his or her best work, as well as an explanation of why each work is significant. The explanation, or reflection, discusses how the particular work illustrates mastery of specific curriculum requirements or learning goals.

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Each stage of the portfolio development process contributes to teachers' professional development and students' lifelong learning. **Danielson and Abrutyn (1997)** lay out a process for developing a portfolio:

1. Collection - teachers and students learn to save artifacts that represent the successes (and "growth opportunities") in their day-to-day teaching and learning

2. Selection - teachers and students review and evaluate the artifacts they have saved, and identify those that demonstrate achievement of specific standards

3. Reflection - teachers and students become reflective practitioners, evaluating their own growth over time and their achievement of the standards, as well as the gaps in their development

4. Projection (or Direction) - teachers and students compare their reflections to the standards and performance indicators, and set learning goals for the future. This is the stage that turns portfolio development into professional development and supports lifelong learning.

5. Presentation - teachers and students share their portfolios with their peers. This is the stage where appropriate "public" commitments can be made to encourage collaboration and commitment to professional development and lifelong learning.

Electronic Portfolio Development Tools

In addition to the stages of portfolio development, there appear to be at least five levels of electronic portfolio development, each with its own levels of expectation and suggested software strategies at each stage depending on technology skills of the student or teacher portfolio developer (Barrett, 2000).
 No digital artifacts. Some videotape artifacts.

Word processing or other commonly used files stored in electronic folders on a hard drive, floppy diskette or LAN server.

Databases, hypermedia or slide shows (e.g., PowerPoint), stored on a hard drive, Zip, floppy diskette or LAN server.

Portable Document Format (Adobe Acrobat PDF files), stored on a hard drive, Zip, Jaz, CD-R/W, or LAN server.

HTML-based web pages, created with a web authoring program and posted to a WWW server.

Multimedia authoring program, such as Macromedia Authorware or Director, pressed to CD-R/W or posted to WWW in streaming format.

The Added Value of E-Portfolio

An extensive study conducted by the National Research Council supports the use of formative portfolio building to not only reveal what students know, but as a tool to help students know what they've learned. E-portfolios have added value.

- ➢ **Management and Storage :** In an electronic portfolio all information is stored digitally on a computer hard drive or some sort of removable media (floppy disk, Zip disk, CD, etc.) or uploaded to the Internet. This electronic information takes up very little physical space and is easily accessed and easily distributed

- ➢ **Access and Distribution:** Allows for peer review, feedback through the process and feedback from more people through the web or CD. Greater reliability in grading. Easily reproducible on CD or accessible through the web.

- ➢ **Hyper Linking:** With Hypermedia words, pictures, and sounds can all be linked in a non-linear fashion facilitating connections between students' learning, experiences, ideas, and products.

- ➢ **Multimedia:** We can easily add graphics, sounds and video to an electronic portfolio. This lets you represent many dimensions and intelligences.

- ➢ **Computer Skills:** Students learn valuable computer skills while creating or editing parts of their own electronic portfolios! This includes: saving files, scanning pictures, using a digital camera, drawing and painting tools, importing text and pictures, generating and saving sounds and video, storyboarding, connecting information   planning a complex product and publishing on the internet. The electronic portfolio can serve as a vehicle for demonstrating these computer literacy skills.

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- ➢ **Revising:** Revising portfolios becomes an easy task. You can always delete material, edit pages, change spelling, and add additional pages and links so your portfolio grows with you. With the ease of revising, students are more likely to revise and revision is linked to reflection.

The value added of creating an electronic portfolio should exceed the efforts expended, and teachers should approach their use of technology conservatively. Keep the process simple by using familiar software as you get started. Above all else, the electronic portfolio should showcase learner achievements, and growing capabilities in using technology to support lifelong learning. In closing, electronic portfolios are a technology-based form of authentic student based assessment. Portfolios are both practical and effective because of the rubrics used. The benefits include clear set standards or expectations, quick access, easy storage and increased technology skills.

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Part IV

Building Foundations for the Future

Issues relating to the development of corpora, e-dictionaries, machine translation and other technical issues form the focus of this part.

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CONCEPTUAL LEXICON FOR KNOWLEDGE REPRESENTATION AND TRANSFER

S. Rajendran, Ph.D.
Tamil University
Thanjavur
Tamilnadu, India
raj_ushush@yahoo.com

INTRODUCTION

Conceptual graphs emphasize semantics. The earliest forms, called existential graphs, were invented by the philosopher Chrales Sander Peirce (1897) as a graphical notation for symbolic logic. Lucien Teniere (1959) used similar graphs for his dependency grammar. The earliest forms implemented on a computer were the correlational nets by Silvio Cecato (1961), who used them as intermediate language for machine translation. There are philosophical and psychological evidence that conceptual graphs are mental representation unbounded by knowledge of a particular language.

The proposed conceptual lexicon has concepts as its entries which are independent of a specific language and the meanings of concepts are giving in terms of conceptual graphs from which the surface representation of lexical items belonging to a particular language can be derived. The proposed lexicon can be manipulated to generate a text in the form of a target language. The theory propounded by Sowa (1984) has been exploited to suit our purpose. At the same time the four levels of representations proposed for the a generative lexicon (Pustejovsky, 1995) and the semantic representation in Word Net (Pike Vassion, 2000) are also kept in mind while writing the meaning of a lexical item by means of conceptual graph.

WHY CONCEPTUAL LEXICON

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Dictionary definitions are mostly inadequate representations of words or concepts. A real definition will become encyclopedic. Let us take the concepts "horse" and "book". "Horse" may require at least the following representation:

```
  hoof          mane
                                    stallion

  rider
                    HORSE
                                    mare
  jockey

  stable        neigh              foal
```
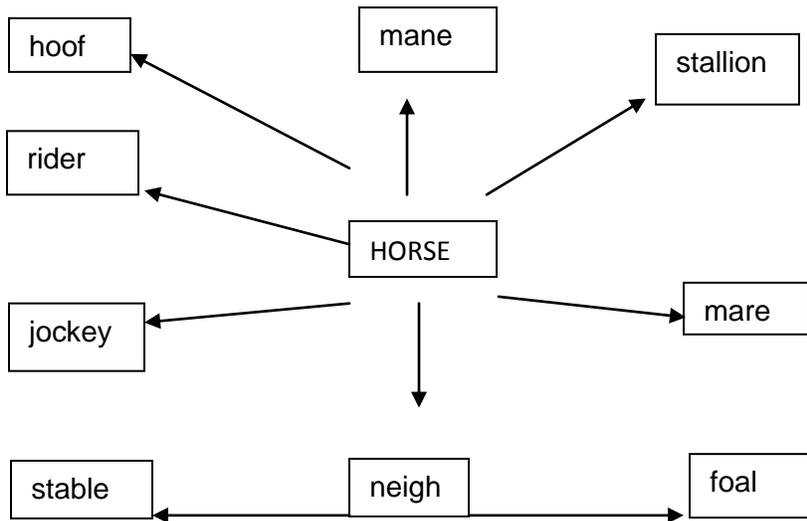
Similarly "book" requires the following representation:

```
  binding       papers
                                    information

                                         reader
  read          BOOK
                                         writer

  write         publish            publisher
```
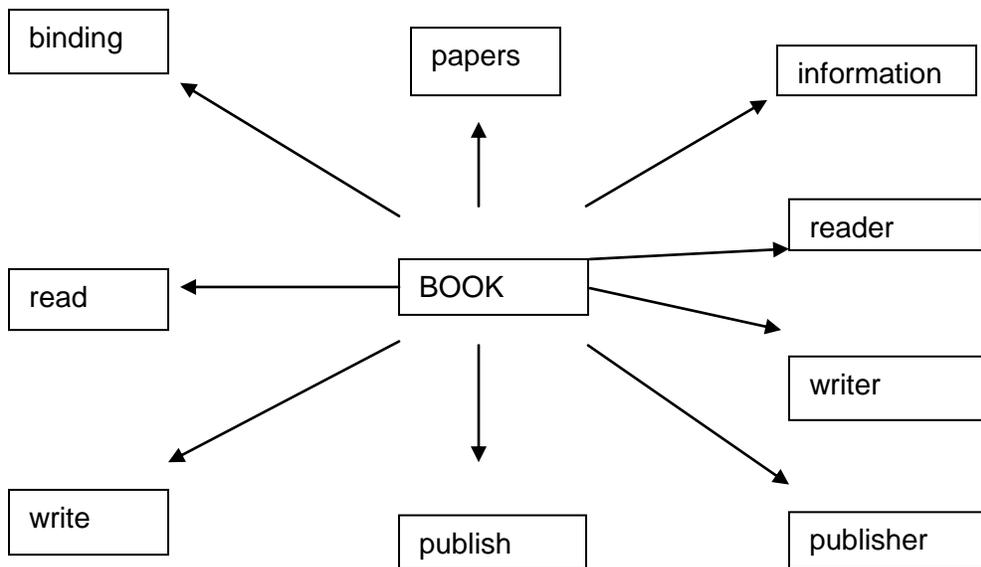
For a universal representation of concepts across languages conceptual graphs may be used.

CONCEPTUAL GRAPHS

Conceptual graphs from a knowledge representation language based on linguistics, psychology and philosophy (Sowa, 1984: 69). Concepts are language independent ones derived form percepts. A conceptual graph is a finite, connected, bipartite graph. The two kinds of nodes of the bipartite graph are concepts and conceptual relations. Every conceptual relation has one or more arcs, each of which must be linked to some concept. If a relation has n arcs, it is said to be n-adic, and its arcs are labeled 1, 2,…n. The term monadic is synonymous with 1-adic, dyadic with 2-adic and triadic with 3-adic. A single concept by itself may form a conceptual graph, but every arc of every conceptual relation must be linked to some concept. Concepts are discrete units. Combinations of concepts are not diffuse mixtures, but ordered structures. Only discrete relations are recorded in concepts. Continuous forms must be approximated by patterns of discrete units. For example, *a space between a brick and a brick* can be represented as follows (Sowa, 1984:72):

[BRICK] ⟍ Arc 1

(BETWEEN)   [SPACE]

[BRICK]   Arc 2
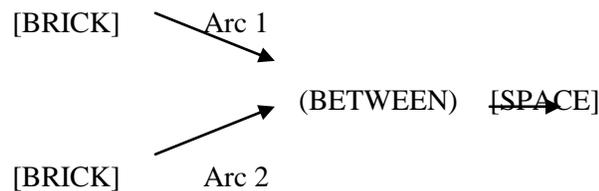
In the graphs, concept nodes represent entities, attributes, states, and events, and relation nodes show how the concepts are interconnected. Distinctions can be made between simple and complex concepts. Simple concepts are basic concepts from which complex concepts can be derived.

SEMANTIC NET WORK

Although the concept types CAT and TOMATO map directly to percepts, other types like PRICE, FUNCTION and JUSTICE have no sensory correlates. Abstract concepts acquire their meanings not

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through direct associations with percepts, but through a vast net works of relationship that ultimately links them to concrete concepts. A conceptual graph has no meaning in isolation. For example, the description of the concept, MAN is represented as follows:

[MAN] → (ISA) → [HUMAN BEING] → (ISA) → [ANIMAL]

ABSTRACTION AND DEFINITION

Definition can specify a type in two different ways: by stating necessary and sufficient conditions for the type, or by giving a few examples and saying that everything similar to these belongs to the type. The first method derives from Aristotle's method of definition by genus and differentiae. And the second method is closer to Wittgenstein (1953). AI systems have supported both methods. Conceptual graphs support type definitions by genus and differentiae as well as schemata and prototypes.

Type definition for KISS (Sowa, 1984:106)

Type KISS(x) is

[PERSON] ← (AGNT) ← [TOUCH: *X] → (MANNER) → [TENDER]

↓

(INST)

↓

(PART) ⟶ [LIPS]
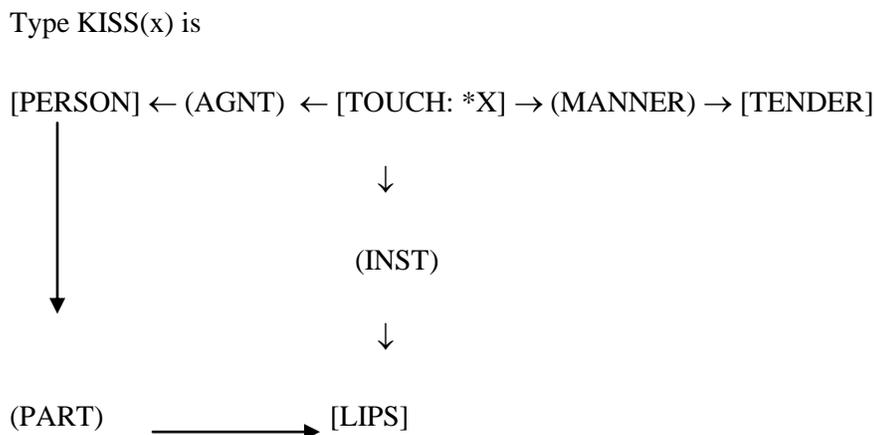
SCHEMATA

The basic structure for representing background knowledge for human-like inference is called the schemata. It is a pattern derived from past experience that is used for interpreting, planning, and imagining other experiences. Schemata incorporate domain-specific knowledge about the typical constellations of entities, attributes and events in the real world. Schemata are similar in structure to type definition. Yet concept type may have at most one definition, but arbitrarily many schemata. Type

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definitions present the narrow notion of a concept, and schemata present the broad notion. Type definitions are obligatory conditions that state only the essential properties, but schemata are optional defaults that state the commonly associated accidental properties.

Schema for BUS (x) is (Sowa, 1983: 129)

[BUS] ← (INST) ← [TAVEL] → (RATE) → [SPEED:< 60kmsph]

↑　　↘

(OBJ)　　　(CON)

↑　　　　　　↘

[DRIVE]　　　　　[PASSENGER: {*}]

↓　　　　　　　↓

(AGNT)　　　　(QTY)

↓　　　　　　　↓

[DRIVER]　　　　[NUMBER= 50]
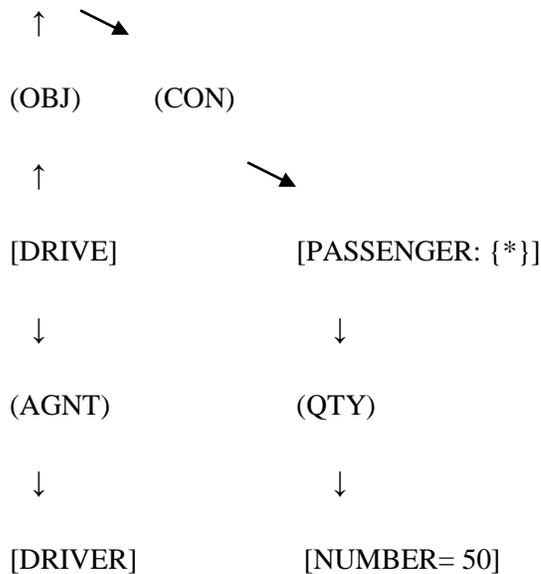
Schemata show the typical ways in which a concept may be used, but they do not describe a typical instance of a concept.

PROTOTYPE

A prototype is a typical instance. Instead of describing a specific individual, it describes a typical of "average individual". A Schema for ELEPHANT might specify a range of characteristics for elephants or a range of behaviours and habitats for elephants. A prototype ELEPHANT would combine and restrict such schema to describe a typical elephant.

Proto type for ELEPHANT   (x) is (Sowa 1984: 136):

[ELEPHANT:*x] –

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(CHAC) → [HEIGHT: @ 3.3 m]

(CHAC) → [WEIGHT: @ 5400 kg]

(COLR) → [DARK-GREY]

(PART) → [NOSE]-

    (ATTR) → [PREHENSILE]

    (IDNT) → [TRUNK]

(PART) → [EAR] {*}] –

    (QTY) → [NUMBER:2]

    (ATTR) → [FLOPPY]

(PART) → [TUSK: {*}] –

    (QTY) → [NUMBER:2]

    (MATR) → [IVORY]

(PART) → [LEG: {*}]

    (QTY) → [NUMBER:4]

(STAT) → [LIVE] –

    (LOC) → [CONTINENT: {Africa|Asia}]

    (DUR) → [TIME: @ 50 YEARS]

CONCEPTUAL REPRESENTATION

Some of the conceptual relations listed in Sowa (1984) are adopted to suit our purpose.

- Accompaniment. (ACCM) links [ENTITY:*x] to [ENTITY:*y] where *y is accompanying *x.

- Agent. [AGNT] links [ACT] to [ANIMATE], where ANIMATE concept represents the actor of the action.

- attribute. (ATTR) links [ENTITY:*x] to [ENTITY:*y] where *x has an attribute *y.

- cause. (CASE) links [STATE:*x] to [STATE:*y] where *x has a cause *y.

- characteristic. (CHRC) links [ENTITY:*x] to [ENTITY]

- destination. (DEST) links [ACT] to [ENTITY] towards which the action is directed.

- experience (EXPR) links [STATE] to [ANIMATE], who is experiencing that state.

- instrument. (INST) links [ENITY] to [ACT] in which the entity is causally involved.

The following relations are also taken in to account to define a concept using some other concept.

Hypernymy-Hyponymy		ANIMAL → MAMMAL
Hyponymy-Hypernymy		COW → MAMMAL
Holonymy-Meronymy	Wholes to parts	TABLE → LEG
"	Groups to members	DEPARTMENT → PROFESSOR
Meronymy-Holonymy	Parts to wholes	WHEEL → CART
Troponymy	From events to their	WALK → LIMP

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	subtypes	
Entailment	From events to the events they entail	SNORE $\rightarrow$ SLEEP

Pustejovsky (2001:56) characterize a generative lexicon as a computational system involving at least the following levels of representation:

1. ARGUMENT STRUCTURE: Specification of number and type of logical arguments
2. EVENT STRUCTURE: Definition of the event type of an expression and its sub eventual structure
3. QUALIA STRUCTURE: A structural differentiation of the predicative force for a lexical item
4. LEXICAL INHERITANCE STRUCTURE: Identification of how a lexical structure is related to other structures in this type of lattice

Pustejovsky (2001:56) assumes that word meaning is structured on the basis of four generative factors, or qualia roles, that capture how humans understand objects and relations in the world and provide the minimal explanation for the linguistic behaviour of lexical items.

CONSTITUTIVE: the relation between an object and its constituent parts

FORMAL: the basic category that distinguishes the object within a larger domain

TELIC: the object's purpose and function

AGENTIVE: factors involved in the object's origin or "coming into being."

The qualia structure is the core of the generative properties of the lexicon, because it provides a general strategy for creating increasingly specific concepts with conjunctive properties. A simple schematic description of a lexical item, α, using this representation is shown below:

α

ARGSTR = ARG1=x

...

CONST = what x is made of

QUALIA = FORMAL = what x is

TELIC = function of x

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AGENTIVE = how x come into being

The lexical structure for *book* as an object can then be represented as follows:

book

ARG1 = y:information

ARGSTR = ARG2 = x:phys_obj

information.phy_obj

FORM = holds (x,y)

QUALIA = TELIC = read (e,w,x.y)

AGENT = write (e', v, x, y)

The ideas propounded by Pustejovsky will also be taken into consideration while defining a concept.

The following is the sample of the conceptual lexicon. Each item is a concept and the concepts will be mapped against the lexical items of a language.

[CAT] → (ISA) → [ANIMAL]

[PENCIL] → (ISA) → [INSTRUMENT]

↓

(FUNCT)

↓

[WRITING]

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The verbs are provided with argument structures. A frame of arguments will be given with their necessary relations. The verbal concept ACT represented in the following fashion.

[ACT] → (ISA) → [EVENT]-

(AGENT) → [ANIMATE ENTITY]

[ARRIVE] → (ISA) → [EVENT] -

(AGENT) → [MOBILE-ENTITY]

(GOAL) → [LOCATION]

LEXICAL AND CONCEPTUAL STRUCTURES

Each natural language has a well-organized lexical and syntactic system. Each domain of knowledge has a well-organized conceptual system. Complexities arise because each language tends to use and reuse the same words and lexical patterns in many different conceptual domains. The lexical structures are

- Relatively domain independent,

- Dependent on syntax and word forms,

- Highly language dependent.

And the conceptual structures are

- Highly domain dependent,

- Independent of syntax and word forms,

- Language independent, but possibly culture dependent.

When there are cross-linguistic similarities in lexical patterns, they usually result from underlying conceptual similarities. English verb *give*, for example, takes a subject, object, and indirect object. Other

languages may have different cases marked by different prepositions, postpositions, inflections, and word order; but the verb that mean roughly the same as *give* also have three participants – a giver, a thing given, and a recipient. In all languages, the three participants in the conceptual pattern lead to three arguments in the lexical patterns.

The distinction between lexical structures and conceptual structures addresses the following things:

- Lexical structures are oriented towards language. The representation developed here is strongly influenced by linguistic theories of syntax and thematic roles.

- Conceptual structures are designed for representing knowledge about the world. They may grow too large to be expressed in a single sentence, and they may contain concepts types that cannot be expressed by a single word.

- Since they can be represented by similar structures, the same operations can be used on them. Furthermore, lexical structures can be converted to deeper conceptual structures by a step-by-step process, not by a translation between radically different forms.

- Finally, common structures facilitate language learning and conceptual creativity. In learning, a child generalizes conceptual structures learned form experience to form the initial lexical structures needed for language. Metaphor and conceptual refinement create new conceptual structures by adapting old lexical structures to novel situations.

CONCLUSION

The distinction between lexical structures and conceptual structures provides a principled basis for partitioning knowledge into the lexicon and the more detailed knowledge about the world. Conceptual graphs provide formalism for representing both kinds of structures with a level of precision that allows

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deeper and more systematic analysis of the relationship between them. As a result, they can help to replace vague discussion with a precise methodology that has a greater chance of being computerized. Finally the direct mapping between conceptual graph and natural language can simplify the task of knowledge acquisition: a knowledge base of conceptual graphs could be generated directly form natural language inputs. After being primed with a dictionary of lexical knowledge, the system could build up its own encyclopedia of world with the aid of a tutor communicating in English, not a knowledge engineer coding in a specialized notation.

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CONVERSION OF IMPERATIVE SENTENCES FROM ACTIVE TO PASSIVE VOICE BY TOPOLOGICAL HOMEOMORPHISM

Rakesh Pandey and H.S.Dhami
Dept. of Mathematics
University of Kumaun

INTRODUCTION

Mathematical tools and concepts have found find many applications within the linguistic sciences, for example- the fast Fourier transform is crucial tool for acoustic phoneticians working on speech analysis, contemporary computational linguists make heavy use of probability theory for stochastic modeling, experimental psycholinguists and socio-linguists use statistics, patterns and tests are utilized in several linguistic sub-disciplines like phonetics, psycholinguistics, sociolinguistics, historical Linguistics, and syntax and so on. Marcus Kracht's in his book entitled Mathematics of Language (2003) has mentioned that for the last fifty years a large amount of research within pure linguistics, particularly in the United States, has been based on separating natural languages from the physical, social, and cultural matrix in which their use is embedded, and regarding them in idealized form as collections of structured mathematical objects. These approaches have led to the application of algebraic methods —the discrete mathematics underlying formal language theory, computational complexity theory, and mathematical logic —to the description of natural languages and the study of their abstract properties. Kornai in his recent book (2008) has observed that many parts of linguistics field like formal syntax, logical semantics, phonetics, phonology, philosophy of language etc. would fit nicely in algebra and logic; but there are many others for which methods belonging to other fields of mathematics are more appropriate.

The notion of a grammar is central to most work in computational linguistics and natural language processing. In recent years, there has been growing interest across a number of theoretical frameworks in defining grammar formalisms for natural language which make available stronger forms of psychological interpretation of the formalism than is standard, giving rise to new ways of articulating the relationship between grammar formalism and natural-language data.

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The motivation behind preparation of this paper underlies in the fact that whether set of rules for conversion of sentences written in active voice can be done by the application of mathematics? Whether mathematical abstraction can be an answer to the transformation rules in strict adherence of the syntax and grammatical rules?

Initiating with the assumption that the epistemological problem that all linguistics must deal is of a topological nature, a topological model has been developed for internal linguistics by Lo'pez Garsia (1994). Gorman and Curran (2007) have found that distributional models of language acquisition display topological properties to synonymy and homonymy networks. In the process of determining the antecedent of an anaphora, Sepassi and Marzban (2006) have examined the processing of two types of causality structures in the active and passive voices. Motivated by introducing a mathematical foundation of qualitative and quantitative fuzziness of linguistic terms ,Nguyen Cat Ho (2007) has shown that a formal model of fuzziness of linguistic terms and hedges can be defined reasonably in the semantic structure and there is a closed relation between fuzziness of terms and semantic-based topology of these algebras.

The present work is in continuation of our earlier work (2007), which was selected for presentation in National meet of research scholars in Mathematics and Statistics, held at IIT Kanpur (India). With the aim to cater the need of those students who face difficulty in applying grammatical techniques in syntactic theory like that of transformations from active voice to passive voice, we had developed a mathematical model and consequently a computer program for affirmative sentences. Here we have formed topological spaces for imperative sentences with elements being the different parts of speeches. The property of homeomorphism of topological spaces has been used for defining the mapping between active voices to passive voice sentence.

1. GENERATION OF TOPOLOGICAL SPACE FOR IMPERATIVE SENTENCES

Let E be a set comprising of all English words together with all proper nouns and if we denote any word by a then

$$a \in E \qquad \text{………………..(1.1)}$$

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It is a grammar phenomenon that an imperative sentence in active voice contains verb, object and other part of speeches. Mathematical sequence for this rule can be expressed as-

$$S_a = \{S_v, S_a, S_e\} \qquad \text{------------ (1.2),}$$

where S_v, S_a, S_e respectively denote verb term, object term and other terms after object.

We can consider a set X of parts of speeches as

X= {noun, pronoun, verb, adjective, adverb, preposition, conjunction, article, interjection} or

$$X = \{a_1, a_2, a_3, a_4, a_5, a_6, a_7, a_8, a_9\} \qquad \text{...............(1.3),}$$

where $a_i{}'^s$ stand for different parts of speeches mentioned above.

then by (1.1) each a will be in X as it will be any parts of speech.

Now let us consider a power set P (X) of all subsets of X, then the sequence of all parts of speeches in all English sentences (of cardinal number 2^9) shall be the elements of P (X). If in a sentence any number of parts of speeches appears more then once then also it will be a subset of X and ultimately the element of P(X).

In equation (1.2), the most possible elements of Sv shall be {auxiliary verb, verb} and {art, noun} of So while in Se shall comprise of parts of speeches. Therefore

$$S_a = \{\{a_3\}, \{a_8, a_\alpha\}, \{a_i, ..., a_j\}\}, \alpha = 1, 2 \qquad \text{...........(1.4)}$$

Let us assume that finite intersections of the elements of Sa form another set B, then

B = {{a_3}, {a_8, a_α}, {a_β}, X, ϕ}. ------------ (1.5),

where $a_\beta = \{a_i, ..., a_j\}$.

The union of members of B shall be given by

Ta ={X, ϕ, {a_3}, {a_8, a_α}, {a_β}, {$a_{3,}a_{8,}a_\alpha, a_e$}}, ------------------ (1.6),

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Here it is obvious that Ta is a subset of P (X), and we can claim that Ta is a topology on X on the basis of following properties-

$$X, \phi \in T_a$$

Arbitrary union of members of T_a belongs to T_a.

Finite intersection of members of T_a is again in T_a.

such that (T_a, X) is a topological space.

In order to facilitate the mapping of bases in active and passive voices, we shall now prove that Sa is a base for topology T on X.

Since (X, Ta) is a topological space, so

$$Sa \subset Ta \text{ such that } Sa \neq \phi \quad \ldots\ldots\ldots\ldots(1.7)$$

Sa will be said to be a base or basis for topology Ta on X if for any given non- empty set $G \in Ta \Rightarrow \exists S \subset Sa$ s.t. $G = \cup\{s : s \in S\}$

It can also be defined as

$$x \in G \in T \Rightarrow S \in Sa \text{ s.t. } x \in S \subset G$$

By equation (1.4) and (1.6) it is obvious that Sa satisfies the properties of base of topological space, hence Sa is a base for Ta.

Now let we define another topology T_p over X as

$$T_m = \{X, \phi, \{b, a_3\}, \{l, a_8, a_\alpha \}, \{ a_\beta \}, \{l, a_8, a_\alpha, b, a_3\}\} \text{ ------------- (1.8)},$$

where l and b are two mathematical constants which shall correspond to the words let and be respectively, in English language.

2. APPLICATION OF TOPOLOGICAL HOMEOMORPHISM

Let us define a map f from (X, T_a) to (X, T_m), that is,

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$$f: (X, T_a) \rightarrow (X, T_m) \qquad \text{---------- (2.1)}$$

where $\quad f(a_3)=(b, a_3) \quad f(a_8, a_\alpha) =(l, a_8, a_\alpha)$

and

$$\left. \begin{aligned}
&f^{-1}(X) = X, \quad f^{-1}(\phi) = \phi \\
&f^{-1}(\{l, a_8, a_\alpha\}) = \{a_8, a_\alpha\} \\
&f^{-1}(\{b, a_3\}) = \{b, a_3\} \\
&f^{-1}(\{l, a_8, a_\alpha, b, a_3, a_\beta\}) = \{a_8, a_\alpha, a_3, a_\beta\} \\
&f^{-1}\{a_\beta\} = \{a_\beta\}
\end{aligned} \right\} \qquad \text{----------------------(2.2)}$$

In order to exhibit homeomorphism of the two topological spaces, we require the mapping to be continuous mathematically.

We know that in two topological spaces, *(X, Ta)* and *(X, Tm),* a mapping *f* of X into *X* is a *Ta-Tm* continuous if the inverse image under *f* of every *Tm*-open set is a *Ta-* open set. The mappings defined in (2.2) satisfy this property and thus establish the fact that *f* is a T_a-T_m continuous.

The bases of the two topological spaces shall be mapped into each other if we are able to establish the continuity of topological spaces. This we can do with the help of following explanation-

Since *(X, Ta)* and *(X, Tm)* are two topological spaces [defined in (1.4) and (1.8)] and *f* is an open mapping of *(X, Ta)* on to *(X, Tm)* therefore the family of all images under *f* of the members of a base S_a for *Ta* forms a base S_m for *Tm*.

Thus *{X, {b, a₃}, {l, a₈, aₒ}, {aₑ}}* is a base of *Tm* and by the definition of sub-base, given in the book of

{{b, a₃}, {l, a₈, a_α}, {aₑ}} will be a sub-base for *Tm*.

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We have established above that f is a continuous mapping from *(X, Ta)* on to *(X, Tm)* and it is also a one-one mapping, therefore f will be homeomorphism from *(X, Ta)* on to *(X, Tm)*, that is,

$$f: (X, Ta) \rightarrow (X, Tm), \text{ and } (X, Ta) \approx (X, Tm) \text{ and } Sa \approx Sm \quad \ldots\ldots\ldots(2.3)$$

The transformation of verb forms can be justified with the help of another mapping g from *(X, T_m)* into *(X, T_p)*, where *X* contains only thirds form of verbs in verb term a_v, defined as

$$g: (X, T_m) \rightarrow (X, T_p) \quad --------------(2.4)$$

such that $T_p = \{X, \phi, \{l, a_8, a_\alpha\}, \{b, a_3''\}, \{a_\beta\}, \{l, a_8, a_\alpha, b, a_3'', a_\beta\}\}$ and

$$g(X) = X,$$

$$g(\phi) = \phi,$$

Hence we can have

$$\left.\begin{array}{l} g^{-1}(X) = X, \quad g^{-1}(\phi) = \phi \\ g^{-1}(\{b, a_3'''\}) = \{b, a_3\} \\ g^{-1}(\{l, a_8, a_\alpha, b, a_3''', a_\beta\}) = \{l, a_8, a_\alpha, b, a_3, a_\beta\} \\ g^{-1}(\{a_\beta\}) = \{a_\beta\} \end{array}\right] \quad ---------------(2.5)$$

Now if we want to find the base of this topology we immediately get

$$B_p = \{X, \{b, a_3''\}, \{l, a_8, a_\alpha\}, \{a_\beta\}\}$$

and its sub-base shall be

$$S_p = \{b, a_3''\}, \{l, a_8, a_\alpha\}, \{a_\beta\}\} \quad \ldots\ldots\ldots\ldots(2.6)$$

Again from the definition of continuous mapping *g* is continuous from T_m into T_p.

Since *f* is continuous from *Ta* into *Tm* and *g* is continuous from T_m into T_p hence composite map *gof* is continuous from T_a in to T_p also this mapping is one-one hence it will also be a homeomorphism, that is,

$$(X, T_a) \approx (X, T_p) \qquad \ldots\ldots\ldots\ldots\ldots\ldots(2.7)$$

Also there is a continuous mapping *gof* from *(X, T_a)* into *(X, T_p)* hence their sub-bases shall map one another by the same mapping, such that

$$gof(S_a) = (S_p)$$

$$gof\{\{a_3\}, \{a_8, a_\alpha\}, \{a_\beta\}\} = \{\{b, a_3\}, \{l, a_8, a_\alpha\}, \{a_\beta\}\}$$

$S_a \approx S_p$, hence we can say S_a and S_p have the same meaning.

According to permutation law the mapped elements $S_p = \{\{b, a_3\}, \{l, a_9, a_1\}, \{a_\beta\}\}$ can be putted in 6 ways. We can generate as many sentences as we like for all the combinations but we should select only those sentences, which follow grammatical rules and are meaningful. We observe that the only permutation $\{\{l, a_9, a_\alpha\}, \{b, a_3''\}, \{a_\beta\}\}$ can give a correct semantic meaning. Hence finally we have a mapping **gof** such that

$$gof\{\{a_3\}, \{a_8, a_\alpha\}, \{a_\beta\}\} = \{\{l, a_8, a_\alpha\}, \{b, a_3\}, \{a_\beta\}\} \qquad \ldots\ldots\ldots\ldots(2.8)$$

Following sentence of English language can do the justification of this mathematical exercise.

Active- *Open the door carefully*.

Here 'open' represents verb, 'the door' object (the- article, door-noun) and 'carefully' adverb

We can represent this sentence as

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(Sv, So, Se) [by equation (1.2)],

where *Se* (carefully) is the term after object element.

By topological homeomorphism, it will be mapped into

(l+So, b+ Sv''' , Se) [From equation (2.8)],

Where Sv''' is the third form of verbs as explained in the set of equations (2.4) and (2.5).

In above transformed mapping *l* stands for 'let' and *b* for 'be', as defined in (1.8).

Hence the passive voice sentence is – ***Let the door be opened carefully.***

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A NOVEL APPROACH FOR CQUISITION OF KNOWLEDGE AND KNOWLEDGE REPRESENTATION

R. Revathi & M. Vasantha
St. eters Engineering College
Avadi
Chennai-54
Tamilnadu, India
Sriramrr2007@rediffmail.com

INTRODUCTION

One of the fundamental challenges of AI is the automated acquisition of knowledge from data along with the representation of this knowledge to support reasoning and understanding. It spans the spectrum of this challenge from feature selection for learning to new formalisms of knowledge representation to support for specific reasoning capabilities. It has been attempted to place these advancements in the context of the aforementioned fundamental challenge and discuss future directions in the field.

2. KNOWLEDGE ACQUISITION

The field of knowledge acquisition has been heavily studied from initial automated machine learning approaches (e.g., perceptions), to semi-automated knowledge engineering, to more robust automated approaches (e.g., neural networks, symbolic rule learning), and most recently to proven, practical methods, successful applications and mature theoretical frameworks. It has been focused on three basic components of successful knowledge acquisition.

2.1 COMPONENTS OF KNOWLEDGE ACQUISITION

First, the ability to acquire knowledge requires the ability to focus attention on the relevant features of the problem, i.e., feature selection.

Second, a staple of any knowledge acquisition approach is the ability to learn rules relating the selected features to the categories of interest.

Third, in today's fast-paced, dynamic environment, the abilities to acquire knowledge incrementally and detect when knowledge is changing are crucial.

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In addition to these basic components, it has been considered the use of learning in performing a collaborative assessment of knowledge, i.e., collaborative filtering, and the novel approach of using emergent behavior of multi-agent systems as a method for acquiring new knowledge.

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2.2 STEPS IN KNOWLEDGE ACQUISITION

The first step in any knowledge acquisition task is the collection of data and selection of the features to represent the data. Support vector machines (SVMs) represent one of the most advanced methods for learning, and feature selection is crucial to the success of this approach.

While SVMs are among the best learning methods for accurate classification, they currently suffer from the disadvantage of not producing easily interpretable knowledge for human consumption and automated reasoning systems.

More traditional rule learning systems overcome this disadvantage by using a symbolic representation for learned knowledge that still achieves accurate knowledge acquisition, but supports the comprehension of the acquired knowledge and integration of this knowledge into more traditional rule-based reasoning systems.

The ability to interpret learning knowledge is important in domains in which an explanation of actions taken by an automated system is necessary for validation of the actions and improving the understanding of practitioners in the domain.

For example, the ability to detect anomalies in order to identify potential security intrusions necessitates a symbolic rule-learning approach both in terms of representing the relevant features of the task and explaining the assessment of level of security risk. It has been described a similar approach in

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learning symbolic rules representing the arguments to computer commands in order to detect anomalies that may suggest attempts at intrusion.

2.3 ACQUISITION OF KNOWLEDGE FROM DATA

Data provides a basis for most of our knowledge. While most knowledge acquisition uses data that has been abstracted through experience and education, there is also an important role for a more direct extraction. The process of extracting knowledge from data may take several forms:

1. Automated abstraction and summarization, for example, extracting a concise description of a patient's history from a lengthy medical chart.

2. Discovery of new knowledge about relationships, for example discovering drug side effects by retrospective examination of medical databases.

3. Discovery of new abstractions, for example determining the need for a new factor to explain inconsistencies.

4. Quantitative knowledge acquisition, for example, deriving likelihood ratios or other statistical parameters for rules in knowledge bases by statistical analysis of a database.

5. Knowledge validation, for example monitoring the database to assure that knowledge-base rules entered in the past remain adequate, or testing the accuracy of new rules proposed by domain experts.

It begins with a database of case examples, and applies a combination of statistical analysis and domain knowledge to extract the knowledge implicitly present in the data.

2.4 WHY IS KNOWLEDGE EXTRACTION IMPORTANT?

The databases are becoming giant repositories of potential knowledge, and tools are needed to tap this information and bring it to a level of abstraction where it can be used for decision-making and planning, in short, all the tasks we want intelligent systems to perform. Practical applications of knowledge-based systems are hindered by the knowledge acquisition problem, i.e., the difficulty of

building and maintaining knowledge bases. There are several types of automated knowledge acquisition. They are complementary, and require different levels of analysis and base data.

Data summarization is important because of the problem of information overload. It changes the level of abstraction to match an expert's need, but does not make choices. Aids to scientific discovery increase the productivity of researchers in formulating hypotheses. Finding and pruning inconsistencies between already encoded knowledge and the data, again at an appropriate level of abstraction, augments the paper-based exploration tools that are used now.

2.5 DATABASE SUMMARIZATION

It uses a domain-specific knowledge base to identify and summarize important events. It provides an interactive, graphic representation of the patient record, with active regions on the screen display that are selectable by the user to display evidence supporting its conclusions.

2.6 METHODS OF KNOWLEDGE ACQUISITION

As with methods for computer intrusion detection, many knowledge acquisition methods are being motivated by the heightened attention to security tasks like counter-terrorism, emergency response and border monitoring.

One of the common characteristics of security-related tasks is the dynamic nature of the data, which typically arrives via multiple data streams in real time, and the dynamic nature of the knowledge (e.g., patterns of behavior), which undergo constant change.

The ability to handle this dynamic environment is a challenge to current knowledge acquisition methods. The challenge of acquiring knowledge from multiple data streams is the task of assimilating such knowledge from multiple sources. For example, in counter-terrorism domains there are typically multiple, possibly conflict sources of knowledge about some phenomena (e.g., level of threat of a person or activity).

An abstract approach to combing learned knowledge is represented by the recent advances in ensemble learning, however, these approaches assign weights on the knowledge based on performance, rather than on what humans rely more heavily on, that is, the notion of trustworthiness of the source of the

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knowledge. Trust in the source is an important component to any intelligence analysis task. However, it is becoming increasingly important in perhaps less critical activities related to assessment of items in non-security-related domains.

For example, the collaborative filtering techniques used by many on-line vendors utilize customer profiles and reviews to help assess items of interest to those with similar profiles. However, customers with similar profiles do not always share the level of expertise of other customers with perhaps less-similar profiles.

Further generalizing this notion of knowledge acquisition from multiple sources takes us to a truly cutting-edge approach to acquiring new knowledge through the emergent behavior of networks of individuals (e.g., multi-agent systems, social networks)

3. KNOWLEDGE REPRESENTATION

Knowledge representation (KR) is the study of how knowledge about the world can be represented in a computer system and what kinds of reasoning can be done with that knowledge. Challenges of KR and reasoning are representation of commonsense knowledge, the ability of a knowledge-based system to tradeoff computational efficiency for accuracy of inferences, and its ability to represent and manipulate uncertain knowledge and information.

Knowledge representation and its use for reasoning and understanding complete the grand AI challenge initiated by the knowledge acquisition task. Like knowledge Acquisition, knowledge representation and reasoning have a long history in AI research, and even well beyond that into the realm of philosophy and declarative thought.

First-order logic has been and continues to be the substrate of most knowledge representations, and the treatment of the topic in this issue is no different. First-order logic used as the basis of a stochastic logic, of categorical grammars for the coordination problem, and of advanced quantification for the logic of determination of objects

3.1 FIRST-ORDER LOGIC

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First-order logic is also used as the basis of methods for structural verification of proofs derived from automated theorem proving and the definition of ontologies and their mapping between domains. Yet, alternatives to first-order logic exist, most commonly for specialized applications like natural language processing and information retrieval. It has been considered these advanced areas of knowledge representation and reasoning and attempt to integrate them into a more coherent, general view of the field.

Even without the introduction of uncertainty into logic representations, several challenges still exist in order to make practical use of first-order logic. Using logic to represent the semantics of natural language is one such challenging practical use, yet progress continues to be made.

Another form of logical knowledge supporting the understanding of both natural and structured languages (e.g., XML) is the ontology. Ontologies represent knowledge of a domain typically in taxonomic form, e.g., an "isa" hierarchy of concepts in a domain.

3.2 ONTOLOGY MAPPING

Ontology mappings, a form of meta-knowledge about ontologies, allow the translation of concepts in one domain into the concepts of another domain. Several approaches for learning ontology mappings have been developed. Their approach demonstrates the power of human augmentation of automatically acquired, partial knowledge, which helps to complete our integrated vision of an end-to-end system for data to knowledge for reasoning, where full automation is not feasible.

In addition to possibly incorrect acquired knowledge, another source of inaccuracy in a fully automated system is occasional mistakes in the automated reasoning phase of the system due to errors in the implementation of the reasoning system. Most reasoning systems are built around automated theorem proverbs to answer questions targeted toward information and knowledge retrieval or the deductive inference of new knowledge.

Such tools help to identify mistakes in the reasoning process and prevent the inclusion of incorrect, and potentially harmful, knowledge into the system. It has been focused on a traditional logic-based approach to knowledge representation and reasoning. However, when knowledge representation and reasoning is sought for a specific application or domain, non-logical approaches can perform better.

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3.3 KNOWLEDGE REPRESENTATIONS AND REASONING

The above approaches to knowledge representation to support both general-purpose and domain-specific reasoning tasks represent a small sample of the open issues and ongoing progress in knowledge representation and reasoning. Yet, this area represents the ultimate target of our initial challenge of transforming data into a form that allows us to better understand and reason about the domain. Therefore, as mentioned earlier, this ultimate use of learned knowledge should influence the knowledge acquisition process.

How this influence is accomplished is an open issue, but clearly performance goals for reasoning (e.g., speed and correctness of inference, precision and recall of retrieved information, accuracy of prediction) represent quantitative feedback measures. While these measures have been used to influence and refine the knowledge acquisition process on an individual basis, their collective influence and iterative feedback into the process remains an open issue.

4. CONCLUSION

It has been described in the context of one of AI's grand challenges: the automated acquisition of knowledge from data along with the representation of this knowledge to support reasoning and understanding. It represent only a small subset of the work on this challenge, which encompasses the fields of machine learning, knowledge representation and reasoning, automated theorem proving, search, uncertainty, natural language processing, and domains ranging from medical informatics to security and sociology. While several domain-specific, end-to-end approaches have been implemented, general methodologies for solving this challenge are still under investigation. Second, as with the knowledge discovery process, this challenge requires an iterative approach, adapting and refining based on performance feedback and supporting human interaction and guidance. While such feedback has been incorporated into approaches to individual phases, feedback over the process as a whole is an open issue. Third, evaluation of approaches to this challenge requires new benchmark datasets or test beds. Datasets would need to specify not only the initial data, from which knowledge is acquired, but also the types of knowledge desired, alternatives for its representation, and goals for reasoning over this knowledge. Likewise, test beds akin to games and simulators are necessary to exercise and evaluate the various

components of the challenge. One possible evaluation test bed is the automated acquisition of semantic knowledge from the world-wide web to support natural language, semantic-based (rather than keyword-based) querying of and reasoning about the web content knowledge. Such evaluations will drive the field toward integration of methods rather than just parallel pursuit of complementary sub-problems, with the ultimate goal of addressing the grand challenge of knowledge acquisition, representation and reasoning.

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Computer Assisted Language Learning (CALL) Applications: A Futuristic Perspective

S. Senthil Kumar
Narayanaguru College of Engineering
senthil.elt@gmail.com

Learning is generally understood as information transfer from one person (an instructor/teacher/knowledge expert) to another (the learner). This view of learning is too simplistic and it conceives of learners as passive receivers of information. It also results in learning environments that may not include elements critical to effective learning, such as knowledge sharing, meaningful interaction, and feedback. In this information world, the conceptual understanding of learning has evolved from being simplistic to be more scientific and learner-centric. The learner is no more a passive receiver of information. The active participation of the learner ensures better understanding of the subject and widening of the knowledge base.

Traditional vs. Computer-Assisted Learning

Today, there is a sea change in language teaching methodology, largely due to the arrival of the personal computer and the Internet. There is a demand for literate people to become skilled in the new forms of literacy related to the use of a variety of online tools - blogs, social networking sites, video and audio sharing tools and so on. The impact of these internet-related media is different from that of the earlier mass media revolution when film and radio became widespread. These media were powerful, but were largely in the hands of a small number of people with the mass of the population being a passive audience. The new multimedia technology actively involves the users in responding and creating material. Traditionalist educators argue that the longstanding media form of text has and will continue to be the foundation of learning. Others argue that the new multimedia-aided language teaching is displacing the old methods of teaching. The truth lies somewhere in between the two modes of thinking.

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Computer-Assisted Language Learning would complement the traditional methods of language acquisition.

Evolution of CALL

The field of computer-assisted language learning (CALL) has evolved at a rapid pace over recent years. It has now incorporated diversified range of applications. CALL is represented through organizations and conferences such as CALL and Euro CALL in Europe, CALICO and IALL in the United States, JALTCALL in Japan, APAMALL (Asia-Pacific Association of Multimedia Assisted Language Learning) and World CALL. All these organizations and conferences contribute to the significant increase in the volume of CALL-related activities that has led to an explosion of information.

Language teaching through mass media has long been part of the language learning system. Rapid development in the field of computers and multimedia means that there is an increase in the number of people who not only use multimedia content but also create content in the form of web logs or blogs or multimedia pod casts. The line between mass media and personally authored media is becoming more and more blurred if not obliterated. Content creators or developers on the web already have audiences larger than major newspapers and TV channels. The sudden emergence of multimedia and the success behind the websites such as You Tube illustrates the need to learn these new forms of literacy. Children learn much of their mass media literacy, as recipients, quite intuitively from film, television and radio. However, until recently, few have had the opportunity to experience being multimedia authors. Now, with relatively cheap digital cameras, free software and access to powerful multimedia computers, there is both the opportunity and the need, for quite young students to become authors as well as consumers. After the advent of the Internet, CALL has taken a quantum leap in terms of authentic content development and sharing. Now the real problem of a language teacher/learner is the increasing number of teaching/learning options. To absorb and relate the advancements in CALL requires a comprehensive understanding of the various options available and the use of any particular tool for teaching/learning requires a clear sense of its strengths and limitations.

Dimensions in CALL

CALL can conveniently be classified into three categories:

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- Web 2.0

- MALL (Mobile-Assisted Language Learning)

- VL (Virtual Learning)

Web 2.0

Web 2.0 is a more participatory version of the Internet with greater collaboration and democratization, which includes social networking sites like Face book, Orkut, Ibibo, etc. A new wave of Community Language Learning has come into place with the boom of social networking technologies. These online Language Learning Communities are social network services where users can help other users to learn languages by direct communication or mutual correction. Some of the most prominent communities at the moment are language lab, busuu, livemocha and italki.

Open Source (Moodle). Open source is an approach to the design, development, and distribution of software, offering practical accessibility to software's source code. In simple terms, the source code for software is made available for public to collaborate and develop, which gives more room for improvement and innovation at a faster pace. For example, Moodle is a free and open source e-learning software platform, which is designed to help educators create online courses with opportunities for rich interaction and collaboration. Moodle has its own community for language learning and teaching. The highlights of Moodle language learning community are as follows:

- Co-hort Oriented Virtual Campus for Effective Language Learning (COVCELL) Project is an EU funded initiative, which aims to develop new Moodle modules for collaborative language learning.

- Lessons and Teaching Strategies

- Demonstrations on different language learning activities.

- Development of Language-Specific Modules and Blocks

- The Moodle Reader Module for Extensive Reading

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- Research on Language Learning via Moodle

- Reports on National and International Conferences

- Links, Resources, and Discussion Forums

Blog. Blog is another conceptual version of expression in the open source format. A blog is a kind of a website maintained by an individual with commentary on the topic of one's choice (social, political, personal, etc.) Blogs are primarily textual. Audio/Voice blogging and Video blogging are also becoming popular. Voice blogging is posting recorded audio files in the blog site. A voice blog visitor needs to have a voice-enabled feature in his computer and also basic audio equipment like speakers or headphones. In this form of blogging, an audio file is created by recording voice from a microphone using a recorder. The recorded voice file is then uploaded to the blog site. Video blogging requires a video recorder and the process of blogging is the same as audio blogging. A blog can be used as an effective CALL application. The teacher can have a blog with updated entries about different topics related to language learning. The teacher can also use a blog to provide criticism about a recently read book. It can also be used for imparting and sharing your knowledge base. Students can be encouraged to have their blogs and blogging has a lot of scope to improve the writing ability of the students. This would also promote creative thinking and knowledge sharing among students.

Pod cast. Pod casting is another tool that can be used for language teaching. Broadcasting of audio or video content in the Internet is termed as pod casting. Pod casts can be either live or recorded. The BBC website has a separate section for pod casts under the topic 6 Minute English. Each pod cast is six minutes long and it contains examples and explanations to help you improve your knowledge of the English language across a wide range of topics. The British Council website also has a professional pod cast section called Learn English Pod casts.

Video Sharing. Video publication through sites like You Tube, Daily motion, Flickr, Google Video, Metacafe, etc. has created a revolutionary change in the way Internet is perceived. Using videos for language teaching has been one of the most effective ways to achieve success in the classroom. You Tube and BBC's international commercial television channel have collaborated to form an online channel for enabling English language learning/teaching. Search for "ELT" in You Tube provides 1830 videos

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and also search for "English Language Teaching" provides 1240 videos. The following is a list of other You Tube channels that offer ELT video content:

-CHANNEL KUNGZOO

-Quality English Lessons

-English Language Teaching

-Edufinder

-Macmillan ELT

-Teaching English in China with EF English First

-eezenglish

-Imagine Learning English.

Mobile-Assisted Language Learning

The second dimension in CALL is mobile assisted language learning, which offers the opportunity for ubiquitous connection with language learning materials and applications. Mobile-Assisted Language Learning (MALL) can be termed as a subset of both Mobile Learning and Computer-Assisted Language Learning (CALL). With MALL, students are able to access language learning materials in their handheld mobile devices. It also improves connectivity of the students who can now communicate with their teachers and peers anywhere anytime. In 2004, Duke University used iPods for collaborative learning in MALL. The university provided a new device for the students who were taking a language course. The students were encouraged to use the iPods in various ways, including working collaboratively with language tutors. For example, an oral assignment would be recorded and sent to the tutor and the tutors would provide feedback on their assignment. They also used the iPods for downloading pod casts related to their subject of learning. In the near future, we can expect further developments in this area with the introduction of 3G technology and 3G mobile phones in the Indian market.

Virtual Reality Learning

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Virtual Reality is another dimension in CALL, where learners can take different avatars to explore, create, and interact through chat and increasingly voice with one another. Second Life is one such virtual world, which is accessible via the Internet. In SL, the users are called Residents and they interact with each other through avatars. Residents can explore, relate, socialize, create and trade virtual property, and travel in the virtual world. Language learning is the most widespread type of education in virtual worlds. Many universities and language institutes/schools (British Council, Confucius Institute, Institutor Cervantes and Goethe Institute) have islands in Second Life specifically for language learning. As 3D virtual worlds become more complex in the future, they will offer different opportunities for language education. Other communities for language educators in Second Life include the following:

- English Village is a community of language teachers in Asia.

- Second Life English Community is an open community for language learners and teachers.

- SL Experiments is a community of language teachers using Second Life.

- Language Lab is the first large-scale language school that opened its doors to the virtual world.

- Twinity replicates the real life city of Berlin (other cities to follow) and offers language learners virtual locations with region specific languages being spoken.

- There.com also offers 3D enabled language learning opportunities.

CONCLUSION

For the English language teacher, there is a great urgency to look beyond traditional forms of print media in order to consider how we prepare students for careers that require active participation in the new literacies of the digital age. Indeed, the concept of literacy has reinvented itself. Although traditionally defined as the ability to read and write, an understanding of what it means to be literate needs to be extended and expanded. In a traditional classroom, the teacher speaks and uses a blackboard to express oneself. The landscape of a modern classroom is different in more ways than one. A modern classroom is a Smart Classroom, which would have video and data projectors, sound systems, video conferencing facilities, Wi-Fi connectivity, television, DVD players, video document cameras, etc. There is no doubt that the competence and skill in creating an ambiance for smart learning is one of the essential attributions

of a teacher at any level of the educational system. To borrow the words of William Wordsworth, "The World is Too Much With Us." The rest of the world is moving towards Web 3.0, the next generation of Internet, but in India the reality is that we are yet to taste the fruits of Web 2.0. The educational system and the teaching community should wake up to the realities of this digital age. The educators should put their hands up and take the initiative to improve the effectiveness of teaching/learning by reinventing and redesigning the above-discussed new literacies to suit the Indian learner. In my view, many language teachers in India are hesitant to get involved in the new literacies of the digital age because they are concerned about their own perceived lack of skill in using computers. But the truth is that the acquisition of computer literacy skills comes as a result of sustained personal effort within a supportive social and professional context. My appeal to language teachers is to get ourselves involved in this process as creators, enablers, facilitators, and reviewers. This paper is only an attempt to throw light on the paradigm shift in the way how languages are taught and learned.

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APPLICATION OF COMPUTER AIDED LANGUAGE LEARNING

P. Nagaraj, Ph.D. & V. Arthy
nagarajenglish@rediffmail.com

Language teachers across the globe regard themselves as educators as much as specialists in the teaching of visual skills. The shifting emphasis in language teaching in the last decades from the study of language as a discipline in itself and as an entry into the literature of another people towards a practical skill in performance has bought many changes in method and material. It has simulated an interest into the nature of language learning and emphasis the need for a much clearer picture of the component skills in linguistic performance.

As communication progresses from denotation to connotation and from text to context the resources of multi sensory imagery become increasingly valuable. Teachers are turning to technologies to make many of their tasks more efficient. Technology can make language learning faster and easier. A modern electronic computer is capable of rapid and precision of a variety of pieces of equipment; it could present a program of films, tape recording etc., according to an arbitrarily complex plan, and might therefore be programmed to make instructional presentation to an individual or groups in a classroom.

Today's multimedia work stations have astonishing storage capacity, self-life and extremely fast access time. It provides an excellent medium for multi media applications, allowing for the efficient transport and combination of images, sound, video and text. Significant advances in the areas of multimedia, network and authoring technology have dramatically enriched and simplified the operations of language learning.

One reason for making this choice is a great amount of exercise and drill work involved in learning language skills, the greatest part of which requires close supervision and frequent remedial correction for

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best results in learning. Another reason is that some of the kinds of remediation required seemed to be especially feasible to machine embodiment.

Generic software applications are designed for general use but they are extremely useful in language teaching when used in well-designed activities which seek to apply aspects of the functionality of the software to language learning situations. They offer support in the acquisition of knowledge about language and in the application of that knowledge both in discrete and in mixed skill activities.

- **Bhaviouristic:** In this phase the computer plays the role of tutor, serving mainly as a vehicle for delivering instructional materials to the learner.

- **Communicative:** In this phase the computer is used for skill practice, but in a non-drill format and with a greater degree of student choice, control and interaction. This phase also includes:

  - Using the computer to stimulate discussion, writing or critical thinking, e.g. using simulation programs on task-based learning in small groups.

  - Using the computer as a tool or workhorse, e.g. using word-processors, spellcheckers and grammar checkers

- **Integrative**: This phase is marked by the introduction of two important innovations: (a) multimedia, (b) the Internet. The main advantage of multimedia packages is that they enable reading, writing, speaking and listening to be combined in a single activity, with the learner exercising a high degree of control over the path that he/she follows through the learning materials. The Internet has numerous advantages, building on multimedia technology and in addition enabling both asynchronous and synchronous communication between learners and teachers

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CALL (Computer Assisted Language Learning) programmes designed specifically to facilitate the language learning process. It is a Student-Centered learning material, which promotes self-paced learning and includes a substantial degree of interactivity. CALL software's can be

> **Content-specific**

The teacher cannot change the linguistic content or the format of the activities which seek to teach that content. Example: Multimedia software supplied on CD-ROM.

> **Content-free**

The teacher can provide the content which the software then uses as data for the pre-programmed activities. Example: Fun with Texts, the Authoring Suite

CALL programs can improve grammar, vocabulary, knowledge, reading comprehension and also writing skills. More flexible than text books, workbooks or tape recorders, these programmes do not follow a pre-determined sequence, but allow students to control their own progress, selecting options from a 'menu' as to what they will practice according to their interests or perceived level of proficiency. The computer graphics capability distinguishes it further from pedagogical tools. With graphics, an activity can be cued through color drawings or animations.

DRILL AND PRACTICE PROGRAMS

It consists of mechanical manipulations of words or sentences, using transformation and substitution drills or multiple choice and fill in the blank questions. These exercises, items are usually limited to single sentences eliciting one word answers or substitutions. The value of drill and practice programs depends on the accuracy and relevance with which **vocabulary and structures** are used and on the quality of error analysis in the program.

CONTEXTUALISED ACTIVITIES

Contextualized activities consist of units of text larger than word or sentence items unlike drill and practice programs. These programs stress **understanding and creative use** of the language rather than

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merely eliciting correct and automatic responses through these activities meaningful and thoughtful interaction.

TUTORIALS

A Tutorial presents new materials such as **explanation of concepts or rules, supplemented by charts, illustrations**, such as animations, graphics in color, or words that change visually on the screen to demonstrate the effects of a grammatical rule. The follow-up questions take advantage of the **immediate feed back** that the computer can provide and also the order of presentation can be determined by students' conscious choice or by their performance on follow up activities.

SIMULATIONS

Simulations present a situation in which the student must **interact,** playing a role in what happening on the screen. The student's decisions or answers determine the content and sequence of the student-computer interaction. Although such type of programs has been most successfully and extensively used in job training and science courses, it has potential for learning language.

GAMES

Games involving vocabulary will help students a lot in **vocabulary development**. Adventure games, in which the user interacts with a program to solve a mystery or to survive in an imaginary environment, provide an excellent CALL experience for students. Requiring decision making on the part of the players and including a great deal of text display, these games promote **comprehension skills and thoughtful response**. At the same time, they simulate interest in the new language by associating it with an enjoyable, leisure-time activity.

CONCLUSION

CALL activities presenting larger units of content and demanding problem-solving skills involve students to a greater degree and are therefore, more interactive. Interfacing a tape recorder with a micro-computer

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can provide simulating, interactive aural comprehension exercises for students. Videodisc players can also be interacted with microcomputers to provide CALL with interactive audio-visual materials. Voice recognition interface that match short segments of speech heard to similar segments stored in the computer's memory, making it possible to use the computer to improve pronunciation and intonation.

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CALL Software: Evaluation

Jeyalakshmi Subramanian
College of Arts and Social Sciences,Mainefhi
Eritrea
North East Africa
E- mail: jeya_shreen@yahoo.co.in

Introduction

Stating certain criteria for the evaluation of Computer Assisted Language Learning (CALL) software is a complicated task. The user and the trainer may have various aims in the usage of CALL software. Accordingly, the criteria may also vary. Still, in general, the evaluation of CALL software involves the analysis of the objective of the software, the design, the multimedia and the other technical components used in the software, the language content and its usability to teach and learn, and also tests whether it is feasible for self- access learning and includes authoring tools. Therefore, whenever we are in need of evaluating CALL software, it is advisable to spend sometime in analyzing these components.

Objective

The first step in the evaluation of CALL software is checking the correspondence between the objective of the software mentioned in it and the learner's objective. Often, it happens so in institutions that simply because fund is sanctioned, teachers buy some software and later find difficulty in implementing the software inside the course. To avoid such embarrassing situations, while designing the course itself, the appropriate CALL software can be recommended so that implementation will not be a problem later on. The intended learner and the intended CALL software should always be correlated. In addition, it must be made clear whether the software is going to be the part of the regular study program or for self- access learning. It is suitable to check to what extent the software can be helpful in achieving the goal of the learner.

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Characteristics of a Well- Designed Software

Well deigned CALL software must have user friendly interface which will not demand mastery from the user while operating. Always, there exists a phobia for teachers in handling computers. The software which is going to be selected must ease the teacher and should ensure that operating that software is within the competency of the teacher and is meant only for assisting the learner as well as the teacher and not to replace the teacher.

Design and Technical Features
The design and technical components of the specific software determine its eminence over other software. Good software will satisfy the following criteria.

- ❖ Compatibility with the existing Operating System

- ❖ Supporting installation within the existing hardware

- ❖ Consistency from screen to screen in interface and terminology

- ❖ High legibility and readability

- ❖ Good colour contrast between text and background

- ❖ Limited and acceptable usage of fonts and font sizes

- ❖ Relevant usage of pictures and video clippings

- ❖ Availability of authoring tools

- ❖ Feasibility for self- access learning

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Multimedia

Multimedia refers to the audio and video features of the software. In CALL software, the usage of multimedia plays a vital role. Language learning becomes an interesting activity mainly because of these audio and video components. Much care must be taken in testing these components.

- ❖ Good quality audio and video playback

- ❖ Availability of audio and video script

- ❖ Effective usage of Automatic Speech Recognition

- ❖ Viability for repetition to listening exercises

Content

Though CALL environment is fully technologically oriented, the major task lies in combining the language content with technology. Therefore, it is too essential to verify the following standards while evaluating the software.

- ❖ Appropriateness of the level of the software with the level of the learner

- ❖ Relevance of the software content with the skills focused and methodology to be used

- ❖ Easy undo option for undesired actions

- ❖ Provision for utilities such as notepad, printer, and feedback

- ❖ Accessibility to reference materials like dictionary inside the software

- ❖ Helpful instructions and tips

- ❖ Positive usage of cultural information

- ❖ Variety of interactive activities such as quiz and exercises

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Other Criteria

Huge amount is paid in purchasing CALL software. So it is important to check its worthiness. Also other things such as the latest version, up gradation and license should be taken into account of while evaluating the software.

- ❖ Worthy enough for the cost

- ❖ Current version

- ❖ Upgrading facility

- ❖ Licensed for the multiple user

Self- Access Learning

Language learning can never be restricted to a classroom environment. Learning process takes place outside the classroom too. An independent and interested learner is in need of resources apart from the classroom sessions. There are certain activities which cannot be completed within the classroom sessions. For that reason, CALL software must have self access facility. It will allow learners to go ahead according to their own interest and pace. Learner will get motivated to study on a regular basis.

Conclusion

Language learning process can be made interesting for young generation with the help of CALL environment. Hence, the role of the trainer is so crucial in selecting and evaluating CALL software.

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LANGUAGE TEACHING THROUGH CORPORA

L. Ramamoorthy, Ph.D.
Central Institute of Indian Languages
Mysore 570 006
Karnataka, India
ramamoorthyciil@gmail.com

Introduction

Language learning / teaching is concerned with the development of communication skills. There have been many methods to teach language such as the grammar-translation method, direct method, audio lingual method, the oral approach and situational language teaching model. These methods were introduced at regular intervals according to the standard of the learners, and status, whether native, alien or as first or second language. Most of the methods aim to develop the language skills namely listening, speaking, reading and writing.

There can be lot of activities on the development of these skills. For developing listening skill, the following items are to be given and the learner will be able to :

1. Recognize sounds, words, phrases, etc.

2. Get the general idea, remember salient points, predict what's coming next.

3. Understand the discourse type.

4. Get used to listening to different voices and different length of time.

5. Get the ability to screen out what is not necessary for the comprehension of the passage.

6. Deal with dialects and accents.

7. Interpret the message against the background.

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For developing or for testing speaking skill the following items are to be given with them the learner will be able to

1. Make individual sound and combine them.

2. Produce correct pronunciation of the words, phrases, etc.

3. Use intonation.

4. Work with appropriate rhythm and pace.

5. Bring out ones own style of speech.

6. Interact with people appropriately, correcting the messages to be conveyed.

7. Describe, agree, argue, plead, etc.

For developing or for testing speaking skill the following items are to be given with them the learner will be able to

1. Know letters, words and phrases.

2. Recognize different formats such as headlines, styles, genres, etc.

3. Skim, scan, predict, guess and remember.

4. Relate what is read top the experience of the own.

5. Read and comprehend.

6. Read aloud.

7. Interpret what is said.

Those fundamental techniques are incorporated in the classroom through text books through teachers. Besides, there are two important innovations in the language teaching such as (1) Multimedia and (2) Corpora.

Teaching through Multimedia

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Multimedia is a boon to language education. Multimedia can be defined as the computer-delivered combination of a range of communication elements-text, sound, graphics, pictures, photographs, animation and moving video. Each element has its own particular advantage in conveying particular kinds of messages and evoking particular kinds of learner responses. These multimedia components are effective in terms of helping the students to elicit, explain and communicate information because they can break down complex concepts into simple, meaningful display. Multimedia additionally provides further and more powerful dimensions to communication when the control and manipulation of this meaningful information is passed into the hands of the learner. The ability to interact with these communication elements via interactive multimedia allows language learners to explore, discover, ponder, search, question, answer and receive feedback.

Values of Language Teaching

The values of language teaching change to the tunes of the social changes. Education started as Gurukula system where Guru was everything to the students. They have to stay there and acquire education. Due to the advent of industrialization and modernization in the society the text books, print press etc., came in the scene of education. Hence the value of education became students centered and text book orientated. The teacher used to stand and teach the class where as students enjoy the class by sitting. Due to the invention of multimedia the role of teacher is sidelined. It aims to teach or learn language without teacher. However, a multimedia is not a replacement for teacher, but still it is advocated as teacher less learning facility. In the age of information and technology the education becomes edutainment with video, audio, animation etc.

Role of Teacher in the Multimedia Classroom

The role of the teacher in the multimedia classroom is entirely different from the normal classroom environment. Hence, the teacher has the important role to play in the conventional classroom atmosphere where he enters the class with some books and ready-made notes and conducts tests to assess the students. There is no self-evaluation method for the students. However, in this new mode, the teacher is only a facilitator or a coordinator and the teacher should have hands on experience on the computer, with improved instructional capabilities and a vehicle through which to apply the instructional technology skills acquired through training and professional development. The role of teachers and students apparently change.

Teaching through Corpus

Another important technique in teaching language is through Corpora. Corpus is the collection large data base on language which can be exploited for language teaching. Linguistic theory / description

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relied heavily on native speaker's intuition and introspection. They describe what people know about language and what they perceive language to be rather than how it is used. But using corpora, most reliable description about language can be obtained.

The corpora research can be addressed in to two perspectives :

1. How best corpora and corpus linguistic can aid language teaching and learning.

2. What language facts relevant to language teaching / learning can be derived from language corpora.

Scholars suggest (John McH. Sinclair, 2004) in studying corpora we observe as steam of creative energy that is awesome in its wider applicability, its subtlety and flexibility. When there is a demand of teaching of lexical and phrase structures a reliable information about these structures could not be retrieved by introspection. Here the need of corpora for teaching was recognized. The corpora are almost part of pedagogical landscape due to the availability of user friendly software and fast accommodating websites.

Scholars use data driven language teaching or learner as a researcher, while advocating the importance of corpora. The learner should be guided to discover facts if there own language that had previously gone unnoticed. In this paper an attempt has been made to illustrate the advantages of teaching / learning language using corpus.

When we use corpora for language teaching the values of language and teaching changes. The shift of emphasis from deductive to inductive learning routines through corpora has wide ranging effects on :

1. A teacher who becomes a coordinator.

2. The learner who learns how to learn to through excise that involves observation and interpretation patterns of use.

3. The role of pedagogical grammar whose levels of abstractions works against their effectiveness.

The corpora can be used to teach students to interpret instance of language production as a samples rather than examples: Identifying recurrence and inferring patterns which appears in someway typical of certain context. This involves developing a research attitude towards data rather than trusting unquestioningly the authority of the teacher.

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There are also concepts such as learning as discovery and learner as traveler are put forth in the corpus environment, which is entirely different from the values of language teaching (Silvia Bernardini, 2004, pp 16).

Examining specific instance of language use give us insights into how language works. Corpus based studies have focused on four main types of description and analysis (Amy B.M. Tsui, 2004, pp 40).

1. Lexical collocation by examining the frequency and the content of occurrence of linguistic item.

2. Syntactic patterning based on co-occurrence of grammatical word-class tags.

3. Genre analysis based on the co-occurrence of group of linguistic items and processes.

4. Discourse structure and cohesion in spoken and written forms.

Insights from Corpora

Through corpus we can make students aware of the following facts :

a.   Some lexical items are largely synonyms but have different usages.

1. Tall   -   concrete nouns   High - Metaphorical and more abstract.

2. Day-by-day   -   either neutral or positive

3. Day-after-day   -   co-occur with lexical items which gives negative expressions.

In Tamil among the synonyms such as kuuru, sol, vilambu etc., we can identify the most frequently used linguistic item through corpora. It is identify the kuuru has high frequency of occurrence than others especially sol (Ganesan, 2008). Similarly the meaning correspondence and variations can be explained through the occurrence of the synonyms. For example akkarai, iidupaadu, kavanam have the following meanings.

Akkarai   -   Have, show, take, ask, full

Edupaadu   -   Have, show, develop, do, full

Gavanam   -   Distract, turn, divert, attract, bring, take

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b. In Tamil teaching normally finite forms are introduced first then nonfinite forms such as relative participle, verbal participle are introduced later. But an analysis of corpus shows the frequency of occurrence are nonfinite form more than the finite forms.

c. New type of usages such as kudi in manappalkudi, kizhi in kodukizhi etc., and their usages can be identified through corpus.

d. In the lexical item karuppu there is always a confusion which 'r' to be used. It is identified through corpus that when karuppu refers black the trill 'r' is used and when it is used as adjective flap 'r' is used. Similar is the case with 'iiyakkunar'. It is identified that flap is used 462 times and trill in 120 times (creA corpus).

e. Similarly the meaning difference in homophonous forms and the frequency of occurrence of the forms can be identified using purpose.

Uses of Corpora

In general corpus can be used in language teaching to clarify the following points.

1. Seeking confirmation to their own intuition.

2. Checking variants suggested by reference work.

3. Checking which proposition are adjective go together with a term.

4. Checking different uses of certain term.

5. Looking for idiomatic expression.

6. Learning how to use a new expression.

Learners Corpora

Learners corpora is a systematic computerized collection of text produced by the learner. It is used to identify the difficult areas of language learning by comparing with the language produced by the native speakers. These are all the possibilities to teach / learn language through Corpora, which is still in the incipient stage in Tamil context.

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E-DICTIONARIES AND LANGUAGE TEACHING IN THE ELECTRONIC AGE

C. Sivashanmugam, Ph.D.
Department of Linguistics
Bharathiar University
Coimbatore 641 040
Tamilnadu, India

Introduction

India has a very long and rich tradition of compiling dictionaries. Our *agaraati-s* and *nighantu*s bear clear evidence to this claim. Actually these dictionaries are nothing but the repertories of the lexical stock available in a particular language. The vertical growth of a language can safely be estimated by having a quick look at the number of dictionaries published in a language and the frequency with which they are reprinted either with revision and enlargement or without any of them. Contemporary dictionaries largely depend upon the corpus of a language. Corpus in fact is nothing but the lexical items which are currently used by the speech community of a particular language irrespective of the social and other diagnostic and non-diagnostic parameters. This is because of the realization that a language lives or exits not only in the literary and other works of the speakers of a particular language but also equally in the speech of the common folks who employ that particular language in their day today interaction. In the absence of clear cut evidences about the origin and development of our ancient dictionaries, we cannot make any categorical statement whether our ancient dictionaries were corpus based or not.

Dictionaries in the Developing World

The so called conventional dictionaries, apart from serving as a repertoire of the lexical stock of languages, serve as reference looks as well whenever one encounters problems related to

i) The different meanings (definitions) of a lexical item
ii) Pronunciation
iii) Usage
iv) Collocations
v) Inflections
vi) Derivations

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vii) Etymology and so forth

The dictionaries published in India are mostly bilingual keeping English as the first language though there are quite a few numbers of monolingual dictionaries catering to the needs of monolinguals. These dictionaries, published as they are in a developing language like Tamil, have poor patronage and consequently are not fortunate enough to go for multiple reprints, not to speak of going for revised and enlarged editions. The Cre-A dictionary, for instance, (Tamil – Tamil – English) has so for seen only five editions in its history of two decades of existence. Because of the marketing problems involved, our publishers do not want to bring out revised and enlarged editions of dictionaries. The number of dictionaries available in this category is also absolutely poor for the same reasons.

e - Dictionaries

The foregoing discussion highlights the problems involved in bringing out conventional dictionaries in a developing language like Tamil. All these problems can be properly addressed if steps are taken to bring out electronic dictionaries in Tamil and other Indian languages. The following passage discusses the structure and advantages of e-dictionaries over the conventional dictionaries.

Structure of e-Dictionary

Since there is no constraint on the part of a compiler of an e- dictionary with regard to its volume or size and with the error enormous developments made in quick retrieval of data, compiling a vast amount of data, storing them and retrieving them should not pose any problem. Therefore, the structure of an e-dictionary in could be something like the following

1. Head word in bold fonts followed by its grammatical category
2. Pronunciation – standard as well as regional and social
3. Definitions   -- given one after another, most prominent among them given first and in
                           that orders the rest.
4. Illustrations   -- how this lexical item is used in our ancient classes, retrieval literature
                           and Contemporary writing.

5. Usages   -- rules and regulations and conventions with regard to its usage, followed
                           by Changes, if any, that have taken place in the usage over a period of

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time.

6. Etymology -- history about the origin and root of the word and the subsequent changes,

If any, under gone by the word in course of time in its phonological shape and consequent morphological changes.

7. Collocation -- a note about the collocational practices and conventions

Whose Onerous Responsibility?

First and foremost, India has a very consistent and rich tradition in the art and science of dictionary making, or rather to use the modern terminology used in technical parlance, in lexicography and lexicology. Further, it is a widely acclaimed and accepted fact that Indians have excelled in their software development skills as well. The cutting-edge technology developed by our live-wire software engineers has won the appreciation worldwide. If the expertise achieved in these two fields is put together and if joint efforts are taken by lexicographers as well as software specialists, India can do what the English have done for their language! The only hurdle as of now is who should approach whom? Should the software specialists approach the lexicographers or the vice versa? Because of this tussle, in my opinion, this high potential area remains untapped and underdeveloped.

Hurdles to Overcome

Like any other work, this work also has to overcome several technological and methodological hurdles and bottlenecks to overcome. Unless these hurdles are overcome by proper resolution, nothing much can be achieved in this direction. First thing to be decide upon is whether the inflected forms will be generated by the computer itself by a proper programming or whether each and every inflected form will be stored in the computer itself instead of programming it to generate them. In this context one has to recall that Tamil is a inflectional language and the inflectional processes involved in our language are too complex to be properly programmed. A Tamil verb, for instance, has more than 12,000 inflected forms and storing all these inflected forms for the thousands of verbs in Tamil would be a herculean task and searching them and accessing the desired form would be very complicated and time consuming whatever the speed of our computer may be. Taking into consideration the number of forms to be stored and redeemed, it would be prudential on our part to go for computer generation of the inflected forms. We know that Tamil, unlike many of the other Dravidian languages, has a very complex and complicated verb structure as a result of which even programming the past tense formation itself is a tremendous task ahead

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of us. The complexities involved in the formation of transitive – intransitive verbs, positive – negative verbs, compound and complex verbs (a verb is capable of taking not less than five auxiliary forms in a single occurrence *vantu-vitt-irunt-irukka-kkuutum-aanaal*), reported verbs, passives, infinite and other non finite forms and so on and codifying them as to which has to come in which order, etc are very complex requiring too much of technicalities form linguistics as well as computing. Another area requiring concerted efforts and strenuous work is the process of derivation in Tamil. The derivational process is a complicated one and no simple rule would be sufficient for capturing the process adequately. The example of deriving nouns from a verb may be described here just to give a glimpse of the intricacies involved. The verb root is *vaa*. From this verb the nouns such as *varukai, varavu, varutal, vantatu, varaatatu*, can be derived. We cannot have similar forms for another like for example *caappitu*. How difficult would it be to codify them! The inflectional processes involved in the nouns are relatively simple and they have been programmed with a good amount of success. In the L1 situation, children actually learn these things by imitating the behavior of those around them. Children brought up among Tamil speaking people speak Tamil and not Kannada. Their knowledge of language actually reflects their experience. If this counts as imitation, the child learns by imitating. However, often the term 'imitation' has been applied more specifically to speech exchanges in which children repeat the speech of adults (V.J.Cook, 1988). But the learners in the L2 context are unfortunately deprived of this wonderful opportunity and thereby they are in a disadvantaged situation. This has to be adequately compensated for in the class room by the teacher of the L2 (Clark and Clark, 1977)

Advantages

The advantages of using electronic dictionary over the conventional dictionaries are mortified and interesting.

1. The most important constraint faced by the compilers of conventional dictionaries with regard to the quantum of information to be included in a dictionary in the number of pages; what should be the size of the dictionary and the type of binding (law board or paper back?) if the quantum of information (for instance attempting to give all information in a single stroke such as pronunciation, different meanings, illustrations, drawings, etymology, antonyms, synonyms, and so on) decided to be included in a dictionary is more than automatically its value would also be more than by making the cost of the dictionary prohibitively high and users of the dictionaries

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control afford to buy them. Since the size of the dictionary and its prize or directly proportionate to each other. Indian publishers of dictionaries are forced to go for abridged or condensed versions of dictionary. In case of electronic dictionaries all these hurdles can be easily and effectively overcome. One prices of replaceable memories such as CDS, memory sticks (flash drives) are ruling very low and are available for throw- away price. Therefore the viability of a large-sized dictionary in Tamil or another Indian language is very bright. Even a comprehensive electronic bilingual dictionary for Tamil would be competitively priced there by giving a fillip to marketing.

2. Interface between user of a language and computer could be enabled by using this type of dictionaries. The advantages of having a natural language as a medium of interface with the computer are plenty in the modern technology driven world.

3. Bringing out revised and enlarged editions of the other editions becomes easily possible and economically feasible.

4. Electronic dictionaries can complement the architecture of a spell check system and grammar check system in our languages.

5. Electronic dictionaries are the prerequisites for developing machine translation systems in our languages.

6. These dictionaries facilitate the development of CALL/CALT Packages in Indian languages.

7. Since these dictionaries use no paper, they are environment-friendly and help in resenting and conserving our natural resources especially the forest cover.

8. Carrying them to any place becomes easier.

9. All information related to the words and their meanings and other information of a language are made available in a single source.

10. Enable our mobile phones to have predictive text input mode for faster SMS.

Sample Entry for English *run* **from CALD**

run (GO QUICKLY) /*verb* running, ran, run

   1 [I or T] (of people and some animals) to move along, faster than walking, by taking quick steps in which each foot is lifted before the next foot touches the ground:
[+ *to* infinitive] *The children had to run* ***to*** *keep up with their father.*
I can run a mile in 5 minutes.
*The sheep ran **away/off** in fright.*

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*A little girl ran **up to** (= came quickly beside) me, crying for her daddy.*
*Are you running **against** each other or **against** the clock?*
*The first two races will be run (**off**) (= will happen) in 20 minutes.*
See picture <u>running</u>.

2 [T] If you run an animal in a race, you cause it to take part:
*Thompson Stables are running three horses **in** the next race.*

3 [I + adverb or preposition] to go quickly or in a hurry:
Would you run round to the post office and get me some stamps?
You don't put on weight when you spend all day running round after small children.

run *its* course
to develop and finish naturally:
The doctor's advice is to let the fever run its course.
I had to accept that the relationship had run its course.

be running a fever
to be hotter than you should be because you are ill

run errands
to go out to buy or do something:
*After school he runs errands **for** his father.*

run for *sth*
to run fast in order to get or avoid something:
I ran for the bus but it drove off.

run a mile UK INFORMAL
to be extremely unwilling to be involved:
He'd run a mile if I asked him to marry me.

run *yourself* into the ground INFORMAL
to make yourself very tired by working too much:
We ran ourselves into the ground to meet the July deadline.

run on the spot
to move your legs as if running, while you stay in one place:
I run on the spot to warm up before I play football.

run *sb* ragged INFORMAL
If you run someone ragged, you tire them out, usually by giving them too

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much work or work that is too demanding:
The kids have run me ragged this week - I'm glad they're going back to school tomorrow.

run round in circles UK INFORMAL
to be very active but with few results:
Peter's been running round in circles since half his department resigned.

run *sb/sth* to ground (UK ALSO **run *sb/sth* to earth**)
to find someone or something after a lot of searching and problems:
Detectives finally ran the terrorists to ground in an apartment building in Chicago.

run /*noun* [C]
when you move on your feet at a speed faster than walking, especially for exercise:
We go for/do a three-mile run every evening after work.
*If you set off **at a** run (= running), you'll be exhausted later.*

the run of *sth*
the freedom to use something:
While she's away, I've got the run of her house.
So do you have the run of the garden?

be on the run

1 to be trying to avoid being caught, especially by the police:
After a month on the run, the prisoners were finally recaptured by the police.

2 to hurry from one activity to another:
She's always on the run and never has time for a chat.

on the run
while hurrying to go somewhere:
I eat breakfast on the run if I'm late for work.

have a good run for *your* money
to have a good enough time:
I've achieved a lot in my life and I feel I've had a good run for my money.

give *sb* a run for *their* money
to not allow someone to win easily:
We're going to give the other candidate a run for her money.

1 someone who runs, especially in competitions:
a long-distance runner
See also <u>runner-up</u>.

2 a horse running in a race

3 a person who works for someone by taking messages, collecting money, etc.

running shoes/shorts

(go and) take a running jump UK INFORMAL
said to someone when you want them to go away and stop annoying you:
He kept following me around, so I just told him to go and take a running jump.

Sample Entry for *ooTu* run from Cre-A

There are two entries for the Tamil word *ooTu* one for the verb and the other for the noun. Eleven meanings have been listed for the verb *ooTu* while five meanings have been listed for the noun of the same word. The verb meanings are 1. To move faster than walking, run (as human beings), 2. Run or ply (as a vechicle), 3. Run (as watches), 4. (of breath) move in and out (of the lungs), 5. (of blood, water or any liquid) flow, 6. (of root, vein, in the body, etc.) run, 7. (of grey hair)show up in streaks, 8. (of film) run, (of work) proceed, progress, 9. (of goods) get sold, 10. (of time) pass (quickly), 11.function normally (*avar tidiirenRu vantavutan enakku etuvumee ooTavillai*). The noun meanings are 1.tile (for roofing), 2. Broken piece of earthen ware, potsherd, 3. (of a tortoise, etc.) shell, 4.(of an egg) shell: hard outer cover (of certain fruits like almond, etc.), 5. Begging bowl. A comparison of the Tamil entries with those of the English would give some idea about the variations in the semantic range of the word in question.

Conclusion

It is high time that steps are taken to develop e-dictionary for Indian languages and the computer scientists may join hand with linguists and others interested in study of languages in an attempt to develop these dictionaries for Indian languages so that our languages are equipped to perform their role in a better manner in the contemporary world.

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COMMUNICATIONS INTELLIGENCE

I. Suhenya, Ph.D.
Mookambigai College of Engineering
Kalamavur
Pudukottai District
Tamilnadu, India

Introduction

Our success in life, from both a personal and a professional standpoint, will depend to a great extent on our ability to communicate. Nothing happens without communication, without the exchange of information. Technical knowledge and skills – whether of accounting principles, biological processes, or mechanics and physics- are of little value unless you can communicate what that knowledge and those skills mean to others. People evaluate you both formally and informally by your communication skills and the appropriate words and jargon you use. We typically gauge the intelligence of others and their ability to do a given job by their use of language and other communication skills.

Life and change are based on exchange – this is what communication is all about. This ancient skill is unique to every creature, company and institution. Variations are only noticeable in the different forms of the communicative spectrum. Each individual facet is an expression of a different character. It is essential to be aware of your strengths and use them cleverly. Communication then works with the power of an energy form. It accelerates initiates and promotes change. Particularly today – in the face of constant changes - communication is a strong creative factor both in the present and the future. We can increase this strength by recognizing the specific communicative powers of the people involved and of the whole organization and applying them to the developmental project.

Communicative Intelligence:

The philosophy of developing communicative intelligence is to be understood by the professionals in these times when we face an unprecedented challenge of change. There is a need to enhance the general awareness today of the need to know and know quickly, that has become the prime requisite for any kind

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of success in our private and professional lives. Just a decade down the line since the advent of Knowledge Economy the world is transiting to the Age of Intelligence creating yet another, paradigm shift in what will bring the competitive advantage to an individual organization.

 Regardless of where we operate – in the whole overall concept or in project parts, we activate and intensify the communications process. The customer-specific steps are focused on real results, maximum success and the long-term development of the whole. In this way your communicative intelligence strengthens your other core competencies. Intelligence, by definition, is a property of the mind that includes many related abilities like the capacities to reason, to plan, to solve problems, think abstractly, understand ideas, use language and learn. Intelligence includes the abilities to comprehend, analyze and react to a situation. Intelligence is the collection of our abilities to act and react. Intelligence is all about human thinking and activity and therefore requires understanding of human behavior

Howard Gardner, an American psychologist postulated the theory of multiple intelligences. He categorized intelligence on the basis of the different faculties of intellect. He observed that a person shows flair for linguistic skills while another fails to grasp language; some exhibit excellence in mathematics and logic while others are proficient in sports. He came up with forms of core intelligences namely linguistic, logical-mathematical, spatial, and bodily kinesthetic and musical.. They were called interpersonal and intrapersonal intelligences respectively.

What is interpersonal intelligence?

We are a part of society; we are social animals. Hence along with our abilities to lead a life as an individual, it is also important to be able to live and grow as a part of a group. It is important to enhance our social abilities to thrive in the society. This includes the abilities to interact with others, understand them and interpret their behavior. Interpersonal intelligence is something we all need to have but it becomes a vital factor for people in occupations that require interaction with people. Those who have to deal with people as a part of their profession need to have interpersonal intelligence. These include medical practitioners, people in sales or marketing fields and teachers

Interpersonal Intelligence

Interpersonal intelligence relates to the concept of interaction with the people around. It is about the understanding of their thoughts and feelings and the ability to respond to them. People with an

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interpersonal intelligence typically fall in the group of extroverts. They are sensitive to the moods and sentiments of others. They possess the ability to cooperate with people around them and are seen as team players. They can work in a group with ease and efficiency and can understand the temperaments of others in the group.

Interpersonal Intelligence and Effective Communication:

An understanding of others that characterizes interpersonal intelligence is a vital factor for effective communication. For an effective communication to be possible the parties involved in it should understand each other's views. To communicate effectively with another person it is important to grasp his/her opinions about a subject, put oneself in the person's shoes to understand the reason behind his/her views. As these abilities constitute what is known as interpersonal intelligence, this type of intelligence is a vital factor for effective communication.

People who bear an interpersonal intelligence can easily communicate with others. As they have an understanding of moods and emotions of other people, they can empathize with them. They learn by working with others and take interest in discussions. Thus people with an interpersonal intelligence make very effective communication. It facilitates a communication wherein conflicts and debates are reduced, interactions become easy, people seem approachable, hassles minimize and a healthy and productive environment is created. Be it in a work sector or at home, be it a formal communication, be it a chat with friends, the art of communication underlies them all. It is the knack to effectively communicate, which rules every relationship. A professional relationship is guided by effective business communication and so is the interaction with family and friends.

Media and Communicative Intelligence:

The term "media" as used here includes the whole range of modern communications media: television, the cinema, video, radio, photography, advertising, newspapers and magazines, recorded music, computer games and the internet. Media *texts* are the programmes, films, images, web-sites (and so on) that are carried by these different forms of communication. In recent years, there have been several developments in the media environment that make the case for media education all the more urgent. Among the most significant changes are the following:

Technological developments:

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With the advent of multi-channel television, home video, computers and the internet–along with a range of other technologies–there has been a massive proliferation of electronic media. The screen in the living room is now the delivery point for a wide range of electronic goods and services, and for a plethora of information and entertainment.

According to enthusiasts, these technological developments have resulted in greater choice for the consumer–although some suggest that they merely offer more opportunities to see the same things, rather than greater global diversity. However, these changes do not only affect media consumption. The falling cost of technology has also created new opportunities for people to become media producers in their own right: by using video and the internet, it is now much more possible for individuals to create and distribute their own media texts.

Research shows that more than 80% of what we communicate to others is embedded in the context and manner in which words are spoken, and not in the words themselves. Often, we intend one outcome and experience something else entirely for reasons we might not truly understand. Nonverbal communicative intelligence will enhance their ability to:

➢ communicate the exact message you intend to communicate in a clear and concise manner.

➢ project credibility with purpose and intent.

➢ understand the subtle cues of others in dialogue and discussion.

➢ lessen their anxiety when faced with public speaking, team and group leadership, professional interviews or other situations where precise meaning is desired.

➢ become more comfortable using communications tactics and strategies to convey their intent, create rapport, read the responses of others and get to your desired outcomes.

➢ increase their range of implementation of skills to influence a broader diversity of people.

➢ establish a positive group dynamic.

The need for CNA: (Current News Awareness):

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English is taught as a second language in all the states of India. It is the language of higher education, the higher courts of law, the national newspapers, many works of literature and India's growing international business. Nevertheless, it comes as a surprise that many university students lack adequate reading and communication skills. This has prompted the local public universities to conduct English Language courses for their undergraduates. While they were in schools these students rarely practiced reading English outside the English language classroom. Many of them did not even take the trouble to read the local English dailies!

The Offshoot:

Radio and Television stations, cable networks, magazines and new computer information services certainly contribute to the range of information now available to citizens. The development of handheld wireless devices is acceleration at a rapid pace. Soon enough, everyone will be able to carry something in his palm or in a brief case on which he can watch live broadcast of news as well as read news reports. The system will know the person's location down to the street intersection. Instead of receiving bulky ads, he will receive electronic deals on stuff that is available at the location. The new media revolution is closer than what media decision makers anticipate.

There is a need to create a classroom experience in which English language newspapers and TV News Channels are used to encourage functional literacy in English among the students. At the same time, the students are also provided with the necessary experience to improve their reading skills, enhance their knowledge of current issues and improve the communication skills.

Almost all the students who enter the university are literate in English; that is, they are able to read in English. But many of them are not in the habit of actually using this ability to practice reading outside the demands of the classroom. Hence, functional literacy is confined to reading so as to be able to answer comprehension questions, complete grammar based exercises, or write a composition/essay. Occasionally, for core subject reference materials, students read books and journals in English to obtain additional domain knowledge.

The objective of this module is to share an enriching classroom activity called the Current News Awareness (CNA) which can be introduced and managed on an on-going basis using some of the local English newspapers, TV News Channels and the E-Magazines. The main objective would be to encourage

the students to improve their knowledge of current issues, assimilate and express it, thereby improving their communication skills as well as enhancing their knowledge of current issues.

Importance of CNA Sessions:

Most candidates go through a screening test before the preliminary interviews. This screening test consists of MCQs based on current issues. In an interview too, they may be tested on their awareness of national and international issues related to Industry, Entertainment, Sports, and Games, The Share market and Social Awareness. If they exhibit their awareness and communicate it effectively, they end up impressing interviewer.

The moment we say 'News', 'newspapers', 'TV channels' and 'radio news bulletins' flash across our minds. To put it in simple terms anything current and exciting is news. To develop among the members of the public the basic skills for communication and an autonomous critical competence, to allow them to differentiate between the authentic and legitimate interests of the media and their own.

 Media education within language and literature teaching:

Historically, media education has been a particular concern for teachers of language and literature. Media Studies teachers also remain teachers of literature. Many literature syllabuses include a requirement to address media such as advertising and newspapers; and many literature teachers are likely to cover aspects of popular television such as drama or soap opera.

The expansion and restructuring of the media industries in the wake of deregulation and new technologies might appear to offer many new opportunities here–perhaps particularly for social groups who have historically been under-represented. So to what extent should media education in institutions be seen as a means of training young people for jobs in the media industries?

 Media such as video or photography are sometimes used to record classroom activities or as an alternative way for students to present their work; and some have argued that media production of this kind offers a new method of learning that can be used in many situations. In some secondary schools, for example, media production activities are used in this way in a wide range of curriculum areas, including Art, History and Science: rather than writing up their work in essay form, students present it using audio-

visual means. In presenting their work in media formats, and to a wider audience than simply their teachers, students can be enabled to reformulate their existing knowledge, and to learn at a more profound level. Furthermore, it could be argued that many students' existing knowledge of school subjects– their "commonsense ideas" about science and technology, about other countries or about the past–are at least partly derived from the media in the first place.

Medias and their usage for language teaching:

Medias and their usage for language teaching should be fruitful in making the students communicatively intelligent. Watching TV, browsing the net, working on the computer, listening to music, trekking to window shopping, and watching cartoons may be their leisure time activities. Interests if seriously pursued, become hobbies. Most of the students aren't aware of the difference between a hobby and a leisure time activity. In an interview the interviewer asks the candidate questions related to his hobbies. The candidate should exhibit knowledge and his communicative intelligence in his area of a leisure time activity.

Conclusion

The first and foremost thing in the minds of all professionals is a good placement. In the course of average working hours, they will spend up to 60,000 hours exercising a given set of skills. Living a work life that is productive and fulfilled depends to large extent on how well they identify and utilize their dominant skills and talents using their communicative intelligence. Students may have a sound knowledge in subject but, they would be poor in communication. In spite of getting good marks one may not get a good job because of one's poor communication skills. Students who could speak English well will have a greater chance of getting employment in big concerns with lucrative salary. So the curriculum should be designed in such a way that the students are given opportunity to express their ideas. In that curriculum such activities should be given prominence. Thus the new curriculum will help the students to use the language and to speak English more confidently in various life situations.

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TEXT EXTRACTION IN DIGITAL VIDEO

[1] A.Thilagavathy , [2] Dr. K.K. Thyagharajan
1 Asst. Prof., R.M.K Engineering College, thils_mailbox@yahoo.co.in,
2 Professor, R.M.K College of Engineering & Technology , kkthyagharajan@yahoo.com

1 Text Segmentation

1.1 Color Segmentation

First each frame is segmented into suitable objects. The monochromaticity character feature is taken as grouping criterion for pixels and contrast with the local environment is taken as the separation criterion for pixels. Together with a segmentation procedure which is capable of extracting monochrome regions that contrast highly to their environment under significant noise, suitable objects can be constructed. Such a segmentation procedure preserves the characters of artificial text occurrences. Subsequent segmentation steps identify the regions of such objects as non-character regions and thus eliminate them. As a starting point we over-segment each frame by a region-growing algorithm (see Figure 1). The objective of the region growing is to strictly avoid any under-segmentation of characters. Then, regions are merged to remove the over-segmentation of characters while at the same time avoiding their under-segmentation.

Given a monochrome object in the frame under high additive noise, these segmentation algorithms would always split up the object randomly into different regions. It is the objective of the merger process to detect and merge such random split-ups of objects. We identify random split-ups via a frame's edge and orientation map. If the border between two regions does not coincident with a roughly perpendicular edge or local orientation in the close neighborhood, the separation of the regions is regarded as incidentally due to noise, and they are merged. Orientation and Localization together allow detecting most random split-ups of objects. Edges are localized by means of the Canny edge detector extended to color images, i.e. the standard Canny edge detector is applied to each image band. Then, the results are integrated by vector addition. Edge detection is completed by non-maximum suppression and contrast enhancement.

Let f be an image for which regions are to be grown

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Define a set of regions, R1,R2,....Rn, each consisting of a single seed pixel

repeat

 for i=1 to n do

 for each pixel,p,at the border of Ri do

   for all neighbours of p do

     Let x,y be the neighbour's coordinates

     Let μi be the mean grey level of pixels in Ri

     if the neighbour is unassigned and | f(x,y) - μi | $\leq \Delta$ then

       Add neighbour to Ri
       Update μi

     endif

    end for

   endfor

  endfor

until no more pixels are being assigned to regions.

Figure 1 : Region Growing Algorithm

Merging regions of similar colors completes the color segmentation. This segmentation algorithm yields an excellent segmentation of a video with respect to the artificial characters. Usually most of them will now consist of one region.

1.2 Contrast Segmentation

Video frame can also be segmented properly by means of the high contrast of the character contours to their surroundings and by the fact that the strength of the stroke of a character is considerably less than the maximum character size. For each video frame a binary contrast image is derived in which set pixels

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mark locations of sufficiently high absolute local contrast. The absolute local color contrast at position I(x,y) is measured by

$$r$$

$$\text{Contrast}_{abs,\,color}(x, y) = \sum \| G_{k,l} \cdot (I_{x,y} - I_{x-k,\,y-1}) \|$$

$$k=-r \quad l=-r$$

where $\| \ \|$ Color metric employed

     $G_{k,l}$ Gaussian filter mask

     r   Size of the local neighborhood

Then, each set pixel is dilated by half the maximum expected strength of the stroke of a character. As a result, all character pixels as well as some non-character pixels, which also show high local color contrast, are registered in the binary contrast image. Likewise for color segmentation, the contrast threshold is selected in such a way that, under normal conditions, all character-pixels are captured by binary contrast image. Finally, all regions that overlap by less than 80% with the set pixels in the binary contrast image are discarded.

1.3 Geometry Analysis

Characters are subjected to certain geometric restrictions. Their height, width, width-to-height ratio and compactness do not take on any value, but usually fall into specific ranges of values. If a region's geometric features do not fall into these ranges of values the region does not meet the requirements of a character region and is thus discarded. The precise values of these restrictions depend on the range of the character sizes selected for segmentation. In our work, the geometric restrictions have been determined empirically based on the bold and bold italic versions of the four TrueType fonts Arial, Courier, Courier New and Times New Roman at the sizes of 12pt, 24pt, and 36 pt (4*3*4 = 24 fonts in total). The measured ranges of width, height, width-to-height ratio and compactness are listed in Table 1 below.

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Geometric Restriction	Min	Max
Width	1	31
Height	4	29
Width-to-height-ratio	0.56	7.00
Compactness	0.21	1.00

Table 1. Empirical measured ranges of values using 24 bold TrueType fonts

Since we have assumed that each character consists of exactly one region after the color segmentation step, the empirical values can be used directly to rule out non-character regions. All regions, which do not comply with the measured geometric restrictions, are discarded.

1.4 Motion Analysis

Another feature of artificial text occurrences is that they either appear statically at a fixed position on the screen or move linearly across the screen. More complicated motion paths are extremely improbable between the on and disassembly of text on the screen. Any other, more complex motion would make it much harder to track and thus read the text, and this would contradict the intention of artificial text occurrences. This feature applies both to individual characters and whole words. It is the objective of motion analysis to identify regions which cannot be tracked or which do not move linearly, in order to reject them as non-character regions. The object here is to track the characters not only over a short period of time but also over the entire duration of their appearance in the video sequence. This enables us to extract exactly one bitmap of every text occurring in the video. Motion analysis can also be used to summarize the multiple recognition results for each character to improve the overall recognition performance

Formation of Character Objects

A central term in motion analysis is the *character object C.* It gradually collects from contiguous frames all those regions, which belong to one individual character. Since we assume that a character consists of exactly one region per image after the color segmentation step, at most one region per image can be contained in a character object. A character object C is described formally by the triple (A,[a,e],v),

where, *A* is the feature values of the regions which were assigned to the character object and which are employed for comparison with other regions, [a,e] is the frame number interval of the regions' appearance.

Formation of Text Objects

In order to, firstly, eliminate character objects standing alone which either represents no character or a character of doubtful importance, or secondly, to group character objects into words and lines of text, character objects are merged into text objects. A valid text object $T_i = \{C_{i1},\ldots,C_{i\,n\,(i)}\}$ is formed by at least three character objects which approximately occur in the same frames, show the same linear motion, are the same mean color, lie on a straight line and are neighbors. These grouping conditions result directly from the features of Roman letters. We use a fast heuristics to construct text objects: At the beginning all character objects belong to the set of the character objects to be considered. Then, combinations of three character objects are built until they represent a valid text object. These character objects are moved from the set of the character objects into the new text object. Next, all character objects remaining in the set, which fit well to the new text object, are moved from the set to the text object. This process of finding the next valid text object and adding all fitting character objects is carried out until no more valid text objects can be formed or until all character objects are grouped to text objects. To avoid splintering multi-line horizontal text into vertical groups, this basic grouping algorithm must be altered slightly. In a first run, only text objects are constructed whose characters lie roughly on a horizontal line. The magnitude of the gradient of the line must be less than 0.25. In a second run, character groups are allowed to run into any direction. The output frame after each stage of the above said procedure is shown below.

| (a) Original video frame | (b) Applying split and merge algorithm | (c) After contrast analysis |

(d) Applying size restrictions

(e) After motion analysis

2 Related Works

Numerous reports have been published about text extraction in digital video sequences, each concentrating on different aspects. Some employ manual annotation [4][1], others compute indices automatically. Automatic video indexing generally uses indices based on the color, texture, motion, or shape of objects or whole images [2][8][13]. Sometimes the audio track is analyzed, too, or external information such as storyboards and closed captions is used[5]. Other systems are restricted to specific domains such as newscasts [13], football, or soccer [3]. None of them tries to extract and recognize automatically the text appearing in digital videos.

Existing work on text recognition has focused primarily on optical recognition of characters in printed and handwritten documents in answer to the great demand and market for document readers for office automation systems. These systems have attained a high degree of maturity [6]. Further text recognition work can be found in industrial applications, most of which focus on a very narrow application field. An example is the automatic recognition of car license plates [10]. The proposed system works only for characters/ numbers whose background is mainly monochrome and whose position is restricted.

There exist some proposals regarding text detection in and text extraction drom complex images and video. In [9], Smith and Kanade briefly propose a method to detect text in video frames and cut it out. However, they do not deal with the preparation of the detected text for standard optical character recognition software. In particular, they do not try to determine character outlines or segment the individual characters. They keep the bitmaps containing text as they are. Human beings have to parse them. They characterize text as a "horizontal rectangular structure of clustered sharp edges" [9] and use

this features to identify text segments. Their approach is completely intra-frame and does not utilize the multiple instances of the same text over successive frames to enhance segmentation and recognition performance.

Yeo and Liu propose a scheme of caption detection and extraction based on a generalization of their shot boundary detection technique for abrupt and gradual transitions to locally restricted areas in the video [12]. According to them, the appearance and disappearance of captions are defined as a computationally since it operates on compressed MPEG videos. However, captions are only a small subset of text appearances in video. Yeo and Liu's approach seems to fail when confronted with general text appearance produced by video title machine, such as scroll titles, since these text appearances cannot just be classified by their sudden appearance and disappearance. In addition, Yeo and Liu do not try to determine the characters' outline, segment the individual characters and translate these bitmaps into text. Zhong et. al. propose a simple method to locate text in complex images [14]. Their first approach is mainly based on finding connected monochrome color regions of certain size, while the second locates text based on its specific spatial variance. Both approaches are combined into a single hybrid approach.

Wu et. al. propose a four-step system that automatically detects text in and extracts it from images such as photographs [11]. First, text is treated as a distinctive texture. Potential text locations are found by using 3 second-order derivatives of Gaussians on three different scales. Second, vertical strokes coming from horizontally aligned text regions are extracted. Based on several heuristics, strokes are grouped into tight rectangular bounding boxes. These steps are then applied to a pyramid of images generated from the input images in order to detect text over a wide range of font sizes. The boxes are then fused at the original resolution. In a third step, the background is cleaned up and binarized. In the fourth and final step, the text boxes are refined by repeating steps 2 and 3 with the text boxes detected thus far. The final output produces two binary images for each text box and can be passed by any standard OCR software. Another interesting approach to text recognition in scene images is that of Ohya, Shio, and Akamatsu [7]. Text in scene images exists in 3-D space, so it can be rotated, tilted, slanted, partially hidden, partially shadowed, and it can appear under uncontrolled illumination. In view of the many possible degrees of freedom of text characters, Ohya et al. restricted characters to being almost upright, monochrome and not connected, in order to facilitate their detection.

3 Experimental Results

Two video genres are dealt here ,one is feature films i.e. pre-title sequences, credit titles and closing sequences with title and credits (moving text) and the second is commercials (static text) . Different video samples for each class have been recorded. The coding was tested with 50 frames for each individual video sample. The 114 video samples amounted to 5,700 frames in total. Some of the video samples were manually digitized with text using Windows Movie Maker software and Video Edit Converter Gold Tool.

3.1 Parameters for Performance Evaluation

Before processing each video sample with our text segmentation algorithms, we manually wrote down the text appearing in the samples and the frame number range of its visibility. Then we processed all ten video samples with our segmentation algorithms and investigated whether or not a character had been segmented. To be more precise: we measured the quality of our segmentation with regard to the main objective not to discard character pixels. The segmentation performance is high for title sequences or credit sequences ranging from 88% to 96%.It is higher for video samples with moving text and/or moving background than for video samples where both are stationary. In the latter case our algorithms cannot profit from multiple instances of the same text in consecutive frames, since all instances of the same character have the same background. Stationary text in front of a stationary scene can often be found in commercials. Therefore, segmentation performance in commercials is lower. The elimination of non-character pixels is measured by the reduction factor. It specifies the performance of the segmentation algorithms. The amount of reduction of pixels has a significant impact on the quality of character recognition. The reduction factor is given by

$$\text{reduction factor}_{avg} = \frac{1}{\#\text{ of frames in video}} \cdot \sum \frac{\#\text{ of pixels left in frame f}}{\#\text{ of pixels in original frame f}}$$

The reduction factor ranges from 0.06 to 0.03, thus demonstrating the good performance of the text segmentation step. The Original frame and the text extracted frame are shown below.

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4 Conclusion

We have presented our new approach to text segmentation in digital video. The text segmentation algorithms operate on uncompressed frames and make use of intra- and inter-frame features of text

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appearances in digital video. The algorithm can be been tested on title sequences of feature films, newscasts and commercials

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BUILDING E-DICTIONARIES FOR INDIAN LANGUAGES

Yalamanchi Viswanatha Naidu
Language Technologies Research Center
International Institute of Information Technology
Hyderabad
viswanath.iiit@gmail.com , vnaidu@research.iiit.ac.in

1. Introduction

Only a less number of the world's languages currently enjoy the benefits of modern language technologies such as speech recognition and machine translation. A slightly larger number have managed to assemble the basic resources needed as a foundation for advanced end-user technologies: mono-lingual and bilingual corpora, machine-readable dictionaries, thesauri, part-of-speech taggers, chunkers, morphological analyzers, parsers, etc. In this paper, I have put an effort to build the basic resource i.e E-dictionary for less resource languages. This paper organized as follows. Section 2 discusses the types and nature of the dictionary, sections 3 discusses various issues involved in building MRDs or E-dictionaries like size of the dictionary, format etc. from both theoretical and practical point of view. In section 4 experiments on Hindi and Telugu for determining size of the dictionary based on frequency. Section 5 and 6 discusses the Hindi and Telugu[1] bilingual dictionary which is derived based sentence aligned corpus. Bilingual dictionary is evaluated manually. Section 7 concludes the paper.

2. Dictionaries

The meaning of any natural language sentence is derived from the meaning of its individual words together with its syntactic structure and surrounding context. Hence, knowing the meaning of the words is very important part of knowing the language. To do so the best references are dictionaries. Dictionaries of different types for different sets of users for different purposes can be found. People use dictionaries

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1   Hindi belongs to the Indo-Aryan language family, spoken in the spoken north and central areas of India. Telugu belongs to the Dravidian family of languages, mainly spoken in the Indian state of Andhra Pradesh. It is also one of the four classical languages in India.

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for their varied uses. People use dictionaries for reference, for learning languages, for any kind of information about the words they use, for teaching for writing books, for making and compiling dictionaries, and also for other purposes like translation, building NLP tools and so on. In fact, they are of course, polyfunctional in nature.

Form wise and medium wise, dictionaries can be in electronic or paper format; subject wise dictionaries can be of a specific subject, E.g. Dictionary of chemistry; dictionaries can also be domain based, for example we can have sports related dictionary, agriculture related dictionary, education related dictionary etc. Dictionaries also vary in terms of the target users, hence we can have dictionary for children, dictionary for professionals etc. It now becomes clear depending up on the purpose dictionaries vary their function and nature. Here the type of dictionary that I focus on is MRD. MRDs become the central resource for Natural Language applications. MRDs and other lexical resources are not yet widely available for Indian languages. To my knowledge, not many MRDs are available for one IL to another IL. Development of electronic dictionary facilitates many NLP tasks such as Spelling checker, MT, Information Retrieval (IR), Information Extraction (IE). In fact, there are plenty of works that apply MRDs for semantic related works. For instance, Lesk, M (1986) uses MRDs for the WSD problem. Existing works A. Sanfilippo (1992) J.Klavans et al (1995) S. Richardson, (1988) mainly focus on extracting structured (semantic) resources from MRDs .

3. Issues involved in building MRDs

Now, several issues come up as we turn our attention to MRD. They basically can be of two types; first is endo-skeletal factors and the second is exo-skeletal factors. The former involves considerations about the content of the dictionary , the format of the dictionary, its size etc. And the latter has to do with the target users for whom the dictionary will be of some use; it also involves the purpose of the dictionary. When we build MRDs both these two issues interact with one another at different levels influencing each other's structure and its realizations. Since we are talking about MRD, our focus would be on computational use and compatibility for which the dictionary is to be built. First come endo-skeletal issues. This type of issues revolves around the macro structure and micro structure of the dictionary. Macro structure roughly refers to the list and organization of the lexical entries (or technically 'lemmas') in dictionary and micro -structure refers to the formal, meaning and use plus usage based aspects of the lexical entries.

3.1. How to determine the size of a machine readable dictionary?

Several issues appear, when we turn our attention to MRD. One of them is: how many words to include and on what basis? What should the criteria be ?if we aim at comprehensiveness we may be willing to aim at incorporating the entire lexicon of a language. There has been a good literature on frequency based dictionaries (Kornai, A. (2006)). Such dictionaries help in question answering NLP tools or other domain specific NLP tools. On the other hand, comprehensiveness is an idealization a never to be achieved goal. No dictionary whether electronic or paper based can ever be comprehensiveness, since no body knows the exact boundary of the range of lexicon of the natural language.

3.2. Macro-structure

Another major issue that is a question of how to decide the head word? As far as machine readability is concerned, maximum of information with minimum of formal complexity is to be aimed at. But how is it to be determined? In lexicography the neutral term 'lemma' is used not to refer to the underlying lexeme of a paradigm, but to refer to the head word or entry in the dictionary. It means lemma also includes the inflectional and derivational forms of a lexeme, if they are chosen as separate entries in a dictionary. Problems arise when we move onto several inflectional and derivational forms of a lexeme. Language differs with respect to the state and nature of inflectional and derivational forms of a lexeme. There is so much of overlap, irregularity, inconsistency, complexity in it. If we list out all the possible forms of a lexeme becomes clumsy when the language is morphologically rich. For instance, Turkish might have tens of hundreds in the number of such forms. Almost same is true for many Indian Languages.

This becomes a formidable task for a developer of the MRD as well. Common practice in lexicography has been to include those forms (derivational) as entries that have different in meaning or peculiar in form having undergone some morphological changes, E.g. **Philosophy --> Philosophical**. In the case of inflections , only irregular ones are mentioned under the entry of the lexeme and some time uncommon regular ones as well; E.g. **Go** (present) --> **Went** (past**), Buy--> Bought.** The rest are assumed to be made with regular inflections . But it is quite fine with human users, it is not so with machines as the primary users . Hence, one solution is to list out all the forms for the computer to access them when and where required , which is a formidable task for the developer as said above, or to take help of other NLP tools like morphological analyzer. The second option is viable as far as one is not taking economy considerations into account. For any practical purpose whether in machine translation , or in stemming, or

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in POS tagging this involves connecting several modules through interfaces thereby making the system a bit more complex . However, these again vary according to factors like purpose, aim.

3.2. Micro-structure

Now, when we turn to micro structure of a MRD. This basically deals with formal and semantic aspects like how much to include in the formal-grammatical aspect, semantic aspect and use cum usage based aspect of the lexical item? There are again under each lexical item information about grammatical category, like a verb or a noun etc., the pronunciation of it, its syntactic sub-categorization, its gender, person, number if any all under syntactic-grammatical formal aspect. As far as the semantic aspect of the lexical item is concerned, we can include under each lexical entry its semantic features, semantic description or describing word(s), and for the use-cum-usage based aspect of a lexical entry, we can incorporate information about its currency, frequency (whether formal or informal)register etc. we can also include the collocation patterns, phrasal combinations, in which the concerned lexical item is being used along with other lexical items in the lexical field of which the concerned lexical item is a part based on semantic relations and associations . These are variable informational parameters around which the question of how compatible a dictionary is with the concept of machine readability is concerned. It is not that upon inclusion of all these pieces of information, the dictionary will be more machine readable. It all depends on the use of the dictionary.

4. A case study on building the frequency based dictionaries for Indian Languages.

Case study 1:

Two Indian languages were chosen, namely, Hindi and Telugu[2] for building the frequency based mono-lingual dictionary to determine the size of the dictionary. As I uttered that one of the possibilities is to select the more frequent words (see section 3.1) from a sizable corpus in the language for which the dictionary is to be made. For this purpose an Hindi corpus[3] of 1,58,587 words with an average of 13.22 words per sentence, was taken . Then the frequencies of all the words were extracted into a list of all the words in the corpus with their frequency values. The list had a total of 16,228 word forms. Out of this

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2   The corpus that is used here for Hindi and Telugu is not a parallel corpus.

3   The corpus, which is used is this paper, was from the LTRC, IIIT-H. And the notation (transcription) that is used in this paper is WX-notation (for more details see http://ltrc.iiit.net/~anusaaraka/SAN_MO/help.html#sec-b)

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number, 8147 words had frequency value of 1. These words had a coverage of nearly 6% of all the words of the corpus. The remaining 8081 words on the other side had a coverage of 94% (see Table 1)[4]. This is the number of words for a basic vocabulary of Hindi to be included in the dictionary. Table 2 gives the 10 most frequent words of Hindi from the corpus.

Case study 2 :

A case study has also been done on Telugu. For this Telugu corpus of 1,59,399 words with an average of 5.33 words per sentence, was taken . The similar algorithm that is used for Hindi is applied. But interestingly the list had a total of 37, 876 (Hindi has only 16,228) word forms. Out of this number, 19090 (Hindi has 8147) words had frequency value of 1. These words had a coverage of nearly 21% of all the words of the corpus. The remaining 18886 words on the other side had a coverage of 79% (see Table 1). Segmenting sentences into words is a challenging task in Telugu as it combines two words, sometimes more, together and appears as one word. It reflected in the results (see Table 1). This is the number of words for a basic vocabulary of Telugu to be included in the dictionary. Table 2 gives the 10 most frequent words of Telugu from the corpus. It is to be noticed that both experiments have clearly shown that out of total number words, half words (i.e for Hindi 8081 out of 16,228 and for Telugu 18,886 out of 37976) are enough for both Hindi and Telugu dictionaries to be covered 96%, 79% coverage respectively. In this a frequency based dictionaries are useful for specific target users or NLP applications.

5. Corpus Based Bi-lingual Dictionary for Hindi-Telugu

There are works on deriving Bi-lingual dictionaries from parallel texts Biemann, C et al. (2005). I have also applied similar method to derive the bi-lingual dictionary. The results that are obtained are quite impressive. For experiments Hindi-Telugu parallel corpus of 500 sentence pairs, was taken. The Hindi

able 1. Hindi and Telugu Frequency distribution.

side of parallel corpus has 8403 words with an average of 16.80 words per sentence. On the other side, Telugu parallel corpus has 5270 words with an average of 10.54 words per sentence. To align the words of both source and target languages, I have used, the IBM model GIZA++ Och et al (2003), which is actually a statistical machine translation toolkit for IBM Models 1-5 training and HMM word alignment.

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4   Table 1 and Table 2 gives both Hindi and Telugu experiments details in parallel.

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No. Words (Hindi)	Coverage (in terms %)	No. Words (Telugu)	Coverage (in terms of %)
16	25%	79	20%
201	50%	1700	50%
420	60%	3802	60%
920	70%	9116	70%
1320	75%	15003	75%
2126	**80%**	16164	76%
3137	85%	18886	**79%**
3382	86%		
5203	90%		
8081	94%		
No. of token's equals: 158568 No. of types equals (unique words) : **16228**		No. of token's equals : 159399 No. of types equals (unique words) : **37976**	

GIZA++ is a program for aligning words and sequences of words in sentence aligned corpora . To put simply, it is the training program that learns statistical translation models from bilingual corpora(for more details see http://www.fjoch.com/GIZA++.html).

6. Experiments and Results

First of all, dictionaries are never complete. Further, the differences between languages compounding may lead to confusion in manual evaluation. Very often, it is difficult for a human to judge which words in a given target string correspond to which words in its source string. Especially, problematic is the alignment of words within idiomatic expressions, free translations, and missing function words. The problem is that the notion of "correspondence" between words is subjective. It is important to keep this in mind in the evaluation of word alignment quality. I ran GIZA++ on Hindi Telugu corpus of 500 aligned sentences. Then the output of the GIZA++ has been evaluated manually. The precision was 60.94% that is quite interesting. and if we have a sizable corpus, we can draw some conclusions. Table 3 gives the sample of the derived Hindi-Telugu bilingual dictionary and Table 4 gives wrong aligned words in parallel corpus which are identified manually. The results are as follows.

Total pairs	Correct pairs	Incorrect pairs	**Precision**

Total pairs	Correct pairs	Incorrect pairs	**Precision**
10259	6252	4007	**60.94%**

10 most frequent words (Telugu) from the corpus			10 most frequent words (Hindi) from the corpus		
I	'This'	2096	ke	'genitive marker'	5225
A	'That'	1917	hE	'there'	4668
ani	'quotative marker'	1577	meM	'locative marker	4486
ovka	'One'	1522	kI	'genitive marker'	3774
kUda	'also'	1223	se	'Instrumental/source'	2873
nenu	'I'	881	kA	'genitive marker'	2676
cAlA	'more'	708	ko	'Accusative/Dative '	2122
bAgA	'good '	577	Ora	'and'	1982
mIxa	'on'	534	hEm	'there' honorific/plural	1855
mA	'ours'	510	para	'on'	1637

Table 2. Most frequent words in the corpus.

7. Conclusion and Future work

Developing dictionaries and lexical resources for resource poor languages is a very tedious and time

consuming tasks. In this paper, first, I discuss various issues involved in building the MRD. Then I

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describe a method to derive bi-lingual dictionary from sentence aligned parallel corpus of Hindi and Telugu. This work may also be used to build the corpus based multi dictionaries as well. In future I would like to improve it further applying various NLP techniques.

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MACHINE TRANSLATION

Dr. Chanthiramathi
V.O.C. College
Tuticorin
Tamilnadu, India

Plato says, "Art is the imitation of an imitation and it is twice removed from reality". Translation is one art form like painting, sculpture, music and dance. Translation in literature is the art of rendering the sense and the spirit of the Source Language Text into the Target Language text with fidelity.   The language from which the meaning is transferred is called the Source Language, and the one into which it is transferred is called Target Language.   Translation studies in our time have acquired a new dimension.

Literature has a dual functional character creative function and communicative function. Every literary word is an act of communication. It is in this context, translation becomes a very vital means of communication between two or more literatures. The art of translation is also an art of recreation of the work in another literature. Translation is not treason, but it tends to rise to the level of creation.

Translation is essential for various purposes. It is not possible to master all languages in one's lifetime and learn their literature and philosophical ideas. Translation helps to appreciate various literatures of the world. The translators contribute to the one-world concept by transporting us to the realms of world literature. The translator must be creative, a maker, at the same time he or she must summit to the reality of the writer who he is translating. In the field of comparative literature translation belongs to the study of the reception of a foreign author in a particular literature. In the opinion of Prawer, translation is an intermediary between two cultures. It provides the most important channel through which international inference can flow. The history of translation originated with the Roman conquest of Greece. Though the conquest was a political victory it was a cultural rout. The Roman writers had to model their literary works after the Greek masterpieces. But they were very particular to keep their stylistics superior to that of the Greeks. Hence their translation was unique.

The Elizabethan Age was an age of translation. Dryden speaks of three types of translation- metaphrase, paraphrase and imitation. Metaphrase is a word for word translation. Paraphrase is translation with

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latitude.   The spirit and sense is given supreme importance. Imitation is a different kind where the translator is free to translate and he has liberty to add or omit.   He takes hints from the original and approve of this method.   Dryden personally feels that the spirit of a literary piece is superior to its sense which in turn is more important than the words in it.

Thus translation plays an important part, not only in the development of individual writers but also in that of literary movements and genres. Now a day's translation has become a subject of keen interest to the scientists. Even machines have been invented to do the work of translation. At present technical writings outnumber imaginative writings. Scientific books have been translated successfully by the machines. This paper is an attempt on machine translation.

Machine Translation is one of the expected uses of computers. It is anticipated to completely automate the process of translation. The history of machine translation may be traced back to the seventeenth century. In 1629, Rene Descartes proposed a universal language, with equivalent ideas in different tongues sharing one symbol. In the 1950s, the Georgetown experiment involved fully automatic translation of over sixty Russian sentences into English. It was a great success and ushered in an era of substantial funding for machine translation research.

The researchers claimed within three to five years, machine translation would be a solved problem. But the progress was much slower. Again in 1980s, as computational power increased and became less expensive, more interest was shown in statistical models for Machine Translation. In 2007 Brown D. discussed the difficulties that one faced in the development of Machine Translation. One of the biggest challenges in the development of Machine Translation is that natural language is very complicated. It cannot be broken down into rules. Especially synonyms and idioms cannot be translated easily with the same taste of meaning as is in the original language. Moreover the software methods can maintain the meaning but cannot deliver the natural and easy style of reading. Carnegie Mellon University, the University of Southern California, and Microsoft Research operate some of the largest programs for developing Machine Translation software. Microsoft is primarily focused on extracting meaning from documents in English.

Three methods have been identified to carry out the Machine Translation system. Transfer-based systems are also known as rules-based system. It uses the rules of the source and target languages. It translates meanings with the help of available dictionaries and understanding of grammar of the source and target

languages. The terms are checked against a dictionary and then parsing of the given text material in the source language is done. The source language text is parsed into its parts and grammatical function such as noun, pronoun, adjective, subject or predicate is attached to each word in the sentence. This step produces better results as compared to simple word-by-word substitution because of the use of sentence context. It assures better following of the grammar of the target language. After the sentences are broken into its grammatical constituents, the words are recorded applying the rules. This step ensures that incoming sentence is altered to produce grammatically correct sentence in the target language. Finally contraction or inflection words are added in the target language. Transfer based systems are designed for language pairs. And new set of rules are created for every language pair for which machine translation systems are to be developed.

Data-Driven systems are known as statistical method. In this method source strings are compared with pre-existing translations to see if matching translation is already available. These systems analyze a large number of previously produced bilingual pairs of sentences to find out which phrases, expressions, or words in the source language are most frequently matched with the phrases expressions, or words in the target language.

Data-Driven systems take advantage of the 'large translation memory databases'. A translation memory consists of text segments in a source language and their translations into one or more target languages. These segments can be blocks, paragraphs, sentences or phrases. Individual words are handled by terminology bases and are not with the domain of translation memory. Nowadays, industries producing legal and multi-lingual documentation are using translation memory system.

The translations done by expert human translators are stored in databases. These databases built over the years are developed and maintained by many organizations. But it is very difficult to build reliable corpus of translation. These databases have to be constantly maintained, evaluated, modified or added to by the experts.

The third method is the Hybrid Systems. Many machine translation systems use a combination of transfer-based systems and data driven systems. These systems first use statistical methods and then apply rule based methods on remaining un-translated text. Lingenio's in his How does Machine Translation Work says about seven steps. They are (i) Breaking the corpus into different grammatical constituents, (ii) Changing word forms into canonical forms and dictionary lookups. (iii) Finding out

sentential structures in the source language (iv) Matching translation to assign specific single words (v) Creating the structures for the target language, (vi) Creating word forms in the target language, and providing layout information which was taken out in the first step.

Generally, rule-based methods parse a text, usually creating an intermediary, symbolic representation, from which the text in the target language is generated. According to the nature of the intermediary representation, an approach is described as inter-lingual machine translation or transfer-based machine translation. These methods require extensive lexicons with morphological, syntactic, and semantic information, and large sets of rules. Given enough data, machine translation programs often work well enough for a native speaker of one language to get the approximate meaning of what is written by the other native speaker. The difficulty is getting enough data of the right kind to support the particular method. For example, the large multilingual corpus of data needed for statistical methods to work is not necessary for the grammar-based methods. But then, the grammar methods need a skilled linguist to carefully design the grammar that they use. To translate between closely related languages, a technique referred to as shallow-transfer machine translation may be used.

At present machine translation covers all branches of computational linguistics and language engineering, wherever they incorporate a multilingual aspect. Current machine translation software often allows for customization by domain or profession such as weather reports. This technique is particularly effective in domain where formal or formulae language is used. It follows that machine translation of Government and Legal documents more readily produces usable output than conversation or less standardized text. Many countries have realized its importance and are working towards achieving a global solution. No doubt machine translator has truly bringing the world together as the language barrier has been reduced. It is also much faster than human translators. Moreover machine translators are cheaper than human translators. Yet it is our duty to create a real-time translating machine.

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GRAMMATICAL AGREEMENT IN HINDI-TELUGU AND ITS IMPLEMENTATION IN MACHINE TRANSLATION SYSTEM

Akshara Guru, Christopher Mala, G.Israel, Arul Dayanand.S
CALTS, Dept. of Hindi, LTRC ,   University of Hyderabad
IIIT-Hydearbad, Gachibowli
efthachirs@gmail.com, de_anand@hotmail.com

1. Introduction

This paper describes experiments based on the Grammatical Agreement between Hindi-Telugu and its implementation in Machine Translation System. The notion of, which functions like a bridge between the boundaries of , is one of the interesting aspects of synchronic study of languages. Mainly explains those phenomena that exhibit the property of specific morphological form of a word (Predicate) appearing in a sentence with respect to the presence or absence of some other words (Subject) elsewhere in the sentence. This is probably why Lehmann (1988:55) prefers to call to be referential in nature. It is referential because it helps to retrieve the referent(s). Agreement does this by encoding the information on grammatical properties of its referent(s) (i.e. the NPs-Subject) into the morpheme(s) that appear(s) with the verb (Predicate) in the sentence. In other words, it deals with the distribution of an inflected word (i.e. the verb) with respect to the properties of other words (i.e. the PNG of the Sub \& Obj NP s) in the sentence. It is for this reason, is said to be closely related to the in nature, as it also looks into the effect of on word structure i.e. the morphemes that carry information about tense, aspect, person, gender and number in the sentence. Grammatical agreement helps us to explore and explicate how languages are structured. Here we are trying to study the Grammatical Agreements between Subject/Object and Predicate which is in Hindi. And it has to be carried out in the Target Language (Telugu) in a Machine Translation System (IL-ILMT).

1.1 Definition of Grammatical Agreement

Ex: *rAmudu pAta pAdAdu*

  (*rAmudu*-m,sg,3,Agt)X   (*pAta*)Z   (*pAdu*-A)Y

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We could interpret the above definition in the following way, the verb (i.e. Y) agrees with an NP (i.e. X) in a category Z (i.e. the bound morpheme(s)). The first condition laid out in the definition is very clear. There exists a syntactic relationship between the verb and the NPs in the sentence. We will have to assume that there is an underlying relationship between the O-features (i.e. the PNG represented as is here) and the noun phrase in the sentence and this relationship is independent of the nature or kind of the verb. The (the nominal inflection) is a subcategory of the grammatical category (the verbal inflection) and this part of the condition is also understandable. The last condition suggests about the formation of a constituent (i.e. the VP) and this happens when the bound form(s) or the null marker of agreement feature appear(s) with the verb in the sentence. A few examples of the aforementioned definition and its explanation that is presented will help to see through the complex features and their function for agreement.

2. Methodology of Implementation

The two most important arguments are the subject and the direct object for verb, which are called core arguments. The subject must be present in all well-formed clauses, and intransitive verbs do not accept any other arguments. Transitive verbs accept an optional object argument. A few verbs may also accept a third core argument, the indirect object; those verbs are sometimes called ditransitive. The number of core arguments of a verb is called its valency.

Non-core arguments are also called "oblique arguments" or "complements". They are usually ad-positional phrases showing time ("in the morning"), location ("at home"), beneficiaries ("for her"), etc. Core arguments can be suppressed, added, or exchanged in different ways, using voice operations like passivization, anti passivization, application, incorporation, etc. Oblique arguments, however, can simply be omitted without any grammatical adjustment. Verb arguments are presented above from the syntactic point of view. However, verbs have semantic arguments, which may or may not correspond to the syntactic ones. In actual utterances only the syntactic arguments are realized, but the semantic arguments can be inferred from the meaning of the case marker. Typical semantic arguments are the agent and the patient. Many verbs have other semantic arguments. Languages differ regarding which semantic arguments must surface as compulsory syntactic arguments. For example, the verb "*peVttu*" requires three syntactic arguments: subject, object, locative (e. g. he puts the book in the box). It also has 3 semantic arguments: agent, theme, and goal. But when we see here the verb "*peVttu*" is agreeing with agent but not with other arguments. So here to pass the subject arguments (GNP) to predicate one need to find valency

of the verb and their semantic relation and then its GNP has to shared with predicate verb. Finding of the Semantic relation can be done by using Dependency parser (DP) for Indian languages. But what if the parser is not of good quality. There are some of the simple methods which can help to identify the subject in the sentence. Let's discuss about then in the later sections with the help of Hindi examples.

3. Argument in Hindi Sentences

The general principle is that the verb will agree with a noun phrase (NP) which is not followed by overt postpositions, unless there is a post position after the subject of a sentence, the verb will agree with the subject in person, number and gender. Here are some of the examples.

1. (H-a): *rave roVja nahAwA hE.*

    (T): *ravi roVju snanaM ceVswAdu.*

    (E): ravi bathes everyday.

2. (H-b): *ladikiyA school meM kela rahI hE.*

    (T): *Adapillalu badilo AduwunnAru.*

    (E): Girls are playing in the school.

3. (H-c): *mE kiwAba paDa rahA hUM.*

    (T): *nenu puswakaM caxuvuwunnAnu.*

    E): iam reading a book.

4. (H-d): *Apa bahuwa weVja calawI hE.*

    (T): *mIru cAlA veVgaMgA naduswAru.*

    (E): you walk very fast.

5. (H-e): *wuma roVja muje pareshAna karawe ho.*

    (T): *nIvu roVju nannu ibaMxi peVdawAvu.*

    (E): you bother me every day

6. (H-f): *rAma ne roti kAyI.*

    (T): *rAmudu rotte winnAdu.*

    (E): Ram ate bread.

7. (H)-g: *ladakI acCI hE.*

    (T): *ammAyi maMcixi.*

    (E): Good girl.

8. (H-h): *ladakA acCA hE.*

    (T): *abbAyi maMcivAdu.*

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(E): Good Boy.

Here it is clear that verb changes depending on the person, gender and number of the subject. It also changes to reflect different tenses, aspect and moods of the verb, which is explained later.

- H-a: it can be observed that "ravi"(3rd-person,masculine-gend,singular-num) and "wA"(aspect to verb nahAna) are been agreed.

- H-b: The subject is "ladikiyA" (3rd-person,feminine-gend,plural-num) and "rahe-hE"(aspect to verb kela) are been agreed.

- H-f: The subject is "roti" but not "rAma" (3rd-person,nuter-gend,singular-num) and "yA"(aspect to verb KA), been agreed.

It can be observed that unless a post-position block a subject in a sentence, it controls the agreement with the verb. It also shows that agreement is with main verb only not with the Auxiliary verbs.

In Hindi we can see agreement between Adjective and noun. As shown in H-g and H-h examples.

In Telugu, if subject is in plural number, there is no variation in gender agreement but where as in Hindi there is. As described in the below example

Eg:

- T: *ammAyilu AduwunnAru.*

- H: *ladikiyA Kela rahI hEM.*

  ladake Kela rahe hE.

  ladikiyA Ora ladake Kela rahe hEM.

  abbAyilu AduwunnAru.

  ammAyilu mariyu abbAyilu AduwunnAru.

4. How to carry Hindi Argument to Telugu

Four Steps are followed to carry out the Agreement from Hindi to Telugu.

- 1) Find the Agent/karwa(k1) in the sentence and pass it GNP to the predicate inthe sentence.

- 2) Change the gender of lexicon according to the Target Language(Telugu).

- 3) If k1 is a pronoun (subject pronoun) then gender should be passed back, i.e from predicate to subject.

- 4) If Noun is followed with Adjective then its gender should be carried out in Adjective also.

4.1 Finding the Agent/karwa(k1) in the Sentence

Agent/karwa(k1) is the only thematic/dependency relation with which the predicat shares the GNP for the agreement generation. But to know the Agent/karwa(k1) in hindi sentence we have two ways.

- 1) Mark the nouns which doesn't contain any case marker and which is not in oblique case as karwa(k1).

- 2) Using simple parser all the dependency relations can be defined, which are given in pannini grammar.

Here we have used both the ways to find the agent/karwa(k1). As it is observed that first(null case marker) case doesn't works every time. This can be used as failsafe Agent generator. So it is advisable to use second (simple parser) method to find out the semantic relation between lexical items in the sentence.

Once karwa is found out its GNP values are passed to the main verb in the sentence to have agreement between the subjects and predicate.

4.2 Changing Gender of Lexicon according to the target language(*Telugu)*

As it is know that gender of some common noun differ form language to language. And when these common noun plays the role of Agent/karwa in the sentence, then it become mandatory to get the target language gender for agreement.

Some of such words are described below.

- *cInI, rotI* are feminine and *kelA, Pala* are **masculine** in Hindi, but they are **neuter** gender in Telugu.

Eg:

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1) All the Country names are of Masculine gender in Hindi, but Telugu contains definite nouns which are Masculine so these are *neuter/feminine.*

2) Some of the adjectives like "*IraRa*", "*sarama*", "*pApa*" are feminine in Hindi but they are neuter in Telugu.

3) Telugu has definite masculine and definite feminine nouns, so they can be listed and rest can be categorized as neuter

4) Most of the land scape is masculine in Hindi but they are feminine in Telugu.

Defining the gender of Agent/*karwa(*k1) according to the target language plays major role in Generation of Grammatical agreement.

4.3 Handling of Subject pronoun

It is known fact that Hindi pronoun gender is ambiguous. Their gender can be predicted by studying the predicate in that sentence. As it is known that Subject agrees with the predicate, what if the subject is pronoun whose gender is ambiguous. While translating from one language to another language we need to show agreement between subject and predicate. So here the gender is back passed from the predicate to the subject when the subject is pronoun.

Here are some of the examples for the above explanation:

- H-p-a: *vaha kala skUl gayA*

    T-p-a: *vAdu ninna skUl poyAdu*

    E-p-a: He went to school yesterday

- H-p-b: *vaha kala skUl gayI*

    T-p-b: *AmeV ninna skUl veVlYliMxi.*

    E-p-b: she went to school yestarday

- H-p-c: *ve sUkl jAwe hEM.*

    T-p-c: *vAru badiki powAru.*

    E-p-c: They go to school.

- H-p-d: *ve sUkl jAwI hEM.*

    T-p-d: *vAru badiki powAru.*

E-p-d: They go to school.

- H-p-d: *mE kiwAba pada rahI hUM.*

- H-p-c: *mE kiwAba pada rahA hUM.*

    T-p-d: *nenu puswakaM caxuvuwunnAnu*

    T-p-c: *nenu puswakaM caxuvuwunnAnu.*

    E-p-d: Iam reading book.

    E-p-c: Iam reading book.

In the above example H-p-c the gender of the subject can be predicted from the predicate, in Hindi, but where in Telugu and English, the complete sentence is ambiguous in the matter of Gender. It is very difficult to predict the gender from the predicate (habitual verb= **wunn**) and subject(pronoun= **nenu**) in this type of sentences.

4.4 Agreement between Adjective and Noun

It is observed that most of the Adjectives in Hindi show agreement with Noun followed. This type of agreement is not seen in Telugu.

As described in the below example:

- H-a-a: *acCA ladakA*

    T-a-a: *maMci abbAyi*

    E-a-a: Black boy.

- H-a-b: *acCI ladakI*

    T-a-b: *maMci ammAyi*

    E-a-b: Black girl.

- H-a-c: *kAlA AxamI*

    T-a-c: *nalla maniRi*

    E-a-c: Black man.

- H-a-d: *kAlI pawaMga*

    T-a-d: *nalla gAlipataM*

    E-a-d: Black Kite.

There are some more adjective which doesn't show agreement with following noun. Adjectives like l*Ala, saPexa* doesn't show agreement with following noun. The Adjectives which doesn't end with "***A,I***" doesn't show agreement with the noun followed, rest agree.

5. Some more examples of the Grammatical Agreement Generation:

Here are some more complex agreements in Hindi that cannot be predicted by the subject gender.

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- H-m-a: *rAma ne rotI KAyI.*

  T-m-a: *rAmudu roVtte winnAdu.*

  E-m-a: rAma ate bread.

- H-m-b: *sIwA ne Pala KAyA.*   T-m-b: *sIwA PalaM winnaxi.*

E-m-b: sita ate fruite. In the above example we can see the agreement is not with the Agent in Hindi(*rAma, sIwA*), it is with the patient (*rotI*-feminine, *Pala*-masculine). But where as in Telugu we can see agreement with the Agent(*rAmudu, sIwA*) and not with the patient(*roVtte, PalaM*). One more observation can be drawn from these sentences. The patient gender is also differs in Hindi(*rotI-feminine, Pala-masculine*) and Telugu(*roVtte-neuter, PalaM/paMdu-neuter)*.

- **Noun, post position and agreement**:

  a) mohan ne kele KAye.

  T: mohanu arati paMdlYlu winnAdu.

  b) mohan ne cInI KAyI.

  T: mohan cakkera winnAdu.

  c) mohan ne sIwA ko mArA.

  T: mohan sIwAnu koVttAdu.

- **Direct and Indirect Object**:

  H: sIwA ne mohan ko kiwAba xI.

  T: sIwA mohanki puswakaM icciMxi.

- **Mark of Comparison:**

  a) mohan sohan se laMbA hE.

  T: mohan sohan kaMte poVdavu.

  b) sIwA mohan se acCI hE.

  T: sIwA mohan kaMte maMcixi.

- Adverbs:

  H: roVja sAma cAra baje vaha klaba meM rahawA hE.

  T; roVju sAyaMwraM nAlugiMtiki awadu klablo uMtAdu.

- Information Question:

  H: mohan kala rAwa rAma ke sAwa xIre xIre sohan ke Gara gayA.

  T: mohan ninna rAwri rAmudiwo meVlla meVllagA sohanyoVkka iMtiki poyAdu.

These are the sentences which are having agreement with the subject. But we can see that there are some ambiguous sentences whose agreement is not properly defined so it becomes very tuff to train the machine with such type of sentences.

6. Conclusion

After the analysis of the source language text(Hindi) and lexical substituting of the sentences into target(Telugu) Language in a Machine Translation System, It is now ready for the generation, in generation the Agreement between the Subject and Predicate should be done first. This agreement tells us about the sentence well formlessness (faithfulness) and also increase the readability after the translation is completed. So when readability is increased the Machine translated text is very near to human translation text. But there can be some ambiguous sentences which are hard to understand by machine, eg: sentence of Anaphora, discourse and Pragmatics are exception to this Computational model of Grammatical Agreement Generation. This model is of language dependent, it is specific to Hindi-Telugu language pair. But we can build an Engine which can be trained with language requirements and it can be adopted for that language. This system is presently implemented in the IL-ILMT system at CALTS-HCU, which is Govt. of India funded project.

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SOAP SECURE SYSTEM DESIGN FOR TELEMEDICINE HEALTH CARE SYSTEM

B. Nagamalleswara Rao
N.Sambasiva Rao & V.Kannan
bnmallik@yahoo.com , snandam@hotmail.com drvkannan62@yahoo.com
Bharath University, Chennai - 600 073
Tamilnadu, India

INTRODUCTION

The use of data processing and telecommunications in the health care area must be accompanied by appropriate security measures to ensure data confidentiality and integrity, protecting patients as well as professional accounts and organizational assets. One important aspect of Internet-based information systems is the ability of pushing information to clients, by matching new event occurrences with predefined user's interests. Such ability is embedded within many WEB development products and applications [7], which support one-to-one information delivery in response to users' current and past interactions.

In this paper, we argue that such a possibility is becoming very concrete with the advent of new technological standards, such as XML [7], and XML query languages [8], and with the parallel development of XML –SOAP based technologies [2]. Furthermore, the Internet and Web communities are repeatedly proposing the use of XML in network protocols and distributed applications-XML_RPC [6], SOAP [9], ebXML and XML protocol [3] are only a few examples.

Our proposed approach falls under the generic framework of Telemedicine e-services; such a paradigm denotes a class of Internet computations and systems which fulfill a given objective with some degree of autonomy, for instance because they search within the Internet the best matching of given client requests, or are capable of simple forms of negotiations. The security mechanism proposed for XML messages are encrypted and digital signatures are used.

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In this process we are using SOAP (Simple Object Access protocol) and it is a simple, lightweight protocol for structured and strong-type information exchange in a decentralized, distributed environment. The protocol is based on XML (extensible Markup Language) and it consists of three parts.

1. An envelope which describes the contents of the message and how to use it

2. A set of rules for serializing data exchanged between applications.

3. A procedure to represent remote procedure calls, that is, the way in which queries and the resulting response to the procedure are represented.

Similar to object distribution models (IIOP, DCOM.), SOAP can call methods, services, components and objects on remote servers. However, unlike these protocols, which use binary formats for the calls, SOAP uses text format (Unicode), with the help of XML to structure the nature of the exchanges. SOAP can generally operate with numerous protocols (FTP, SMTP, POP.), but it is particularly well suited to the HTTP protocol. It defines a reduced set of parameters, which are specified in the HTTP header, making it easier to pass through proxies and firewalls

The functionality of the system is realized by software decision, based on the SOAP protocol and XML [4] standards. SOAP is a simple, lightweight protocol for structured and strong-type information exchange in a decentralized, distributed environment. The SOAP protocol is based on XML. SOAP message are structured using XML. Within the framework of the remote procedure call (RPC), it represents the parameters of the methods, the return values and any potential error messages linked to the process. Coding SOAP messages in XML [9] enables universal communication between applications, services and platforms via the Internet. In order to do this, SOAP makes use of the descriptive nature of the XML language, thus transforming the content into an application. In more technical terms, just as with an XML fragment, SOAP messages make references to different namespaces, enabling the content to be validated.

<? xml version="1.0" encoding="UTF-8"?>

<Envelope xmlns="http://www.w3.org/2001/06/soap-envelope">

  <Body>

   <VerifyCreditCardRequest xmlns="http://…/actions">

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```
<EncryptedData Type="NodeList" xmlns="http://.../xmlenc">

<EncryptionMethod Algorithm="urn:nist-gov:tripledes...">

  <IV>adCwS3wowQ8=</IV>

 </EncryptionMethod>

 ...<CipherData>Ynj...M1f</CipherData>...

 </EncryptedData>

</VerifyCreditCardRequest>

</Body>

</Envelope>
```

WORK FLOW ARCHITECTURE
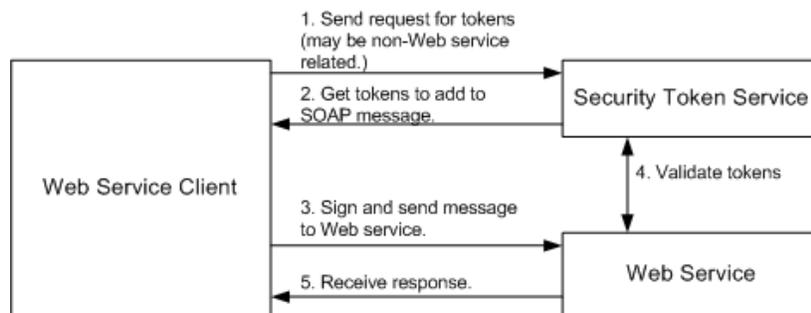
Fig: Secure Web Service mechanism

The Figures shown above give the node of selection and Encryption and SOAP message passage. The XML source has no encrypted parts and is protected through authorization instead. However, there is an authorized application, which selects certain credit card information for processing. It wants to query Credit Card elements and/or content, encrypt, and import the resulting Encrypted Data elements into a SOAP message. However, it concerns about the security of electronic medical information, its interception and modification during transmission, and the opportunities through aggregation for the misuse of personally identifiable healthcare records. Encryption facilities are slowly being introduced into

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applications and servers, showing promise those reasonably secure business transactions may soon be safely conducted through computers on wide area networks.

The XML source has no encrypted parts and is protected through authorization instead. However, there is an authorized application, which selects certain credit card information for processing. It wants to query Credit Card elements and /or content, encrypt, and import the resulting Encrypted Data element into a SOAP message. Naturally, cryptographic mechanisms would be placed within the operating system and/or the network. The currently rapidly increasing commercial need for secure open systems has affected the market of commercial operating systems and computer networks, which is beginning to reflect this by utilizing cryptography. A number of security methods have been proposed to prevent the accessing of unauthorized data through the end –users on the network. Two complex sets of encryption/decryption algorithms, user identifiers and private passwords are currently in development [5]. Since personal passwords could be accessed by unauthorized colleges either intentionally or accidentally, another technique using smart cards is used instead. An electronic prescription system uses a smart card as a key to prescription data located on the network [4]. The paper [5] addresses a public key technique and issues cards for the healthcare market to protect and secure medical data within the network application. The security technique based on confidentiality and integrity of data is proposed in [10]. It uses message encryption for transmitted data and uses a digital signature for stored data authentication of users. The Encryption SOAP model is responsible for secure of data in transit and as well as in storage The SOAP encryption model uses XML DOM [1] that provides an access to a number of node-types including elements, attributes, processing instructions, comments, and text nodes. Authorization is also necessary because client can attempt to masquerade an identity to access the resource.

CONCLUSION

In this paper, we propose the use of SOAP security for telemedicine applications. Telemedicine applications require strong security mechanisms to ensure medical data confidentiality and integrity. Many of the available security mechanisms provide channel or Tunnel level Security (for eg: VPN). In the present case, Application level security, i.e, security for telemedicine data is also provided under the SOAP environment.

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