

## The Engineering Student and the English Language: A Fresh Look at Remediation

- C. Indira & Meenakshisundaram

### 1. Introduction: Engineers in India Today and ESL Teaching

The modern engineering aspirants represent the upwardly mobile rising middle class of a resurgent India. They know that in order to survive and succeed they need “communication skills” or in other words communicative competence in the English language. The employers demand it and universities are waking up to provide it. Does our curriculum meet this demand? Are the materials sufficient? Is the methodology appropriate? It is time we take a fresh look at ELT in our engineering colleges. This paper seeks to focus on remediation required for the engineering students with reference to writing skills.

The present context is such that the need for English has become more manifold than it used to be. It is no more just a library language or language used for some occupational purposes. Today’s engineer has to communicate with more number of his counter parts across the globe. A large number of Indian engineers have to now travel to many continents and work away from their home country. Also, among the scientists, technologists and business experts from culturally and linguistically different communities, English has become the predominant language for communication.

Spoken English therefore has now gained an unprecedented predominance in the university curriculum. But writing skill cannot be neglected in this context. Technical writing is emerging as a field of lucrative business. Business process outsourcing centers now demand engineers who can write without mistakes. Accuracy in written language cannot be overlooked any more.

The engineering students in Tamilnadu come from varied backgrounds. The universities in Tamilnadu are now attracting students from various states of India and overseas. The cultural and linguistic diversity and the rural-urban divide are posing a great challenge both to the curriculum developers and the practicing teachers. English is the medium of instruction in the field of professional education but language proficiency is not a criterion for selection in any engineering college. The aptitude is assessed only by the knowledge level of basic sciences. Students who gain admission to engineering courses should have passed the higher secondary examination or its equivalent.

Those who had instruction in the regional language would have learned English at least for 6 years whereas the others would have spent 12 years. The linguistic competence of even those who come from English

medium schools is far from satisfactory. They have acquired some rules of language and may manage to convey their ideas often in faulty English. The English teacher of the advanced learners is beset with the problem of making the students unlearn faulty usages they have acquired over a number of years. Deeply rooted as they are, remedying these defects is one of the toughest jobs that the teacher has to face.

Grammar teaching has been considered very boring both by the teachers as well as the students. In classes devoted to grammar teaching mainly by means of sentences taken out of context, generating interest in the lesson is not easy. In order to work out an effective methodology, if we take a look at the linguistic theories, the poor practicing teacher is nonplussed.

“The role of grammar instructor in SLA has gone through a rather exhausting and theoretically elusive time. A series of methods and procedures have come and gone leaving some teachers understandably confused and pedagogically frustrated in the wake of conflicting theory and research.” (Mark Koprowski, 5).

### **1.1 Language Acquisition Theories: Influences and Contexts English Language Learning in Tamilnadu**

In Tamilnadu awareness of the necessity to look for materials specific to the engineering register, came in the late 1970's when 'The Structure of Technical English' by A.J. Herbert (1965) became a prescribed text book. The structure and practice sentences in this book were “intended to familiarize the foreign students with the kind of writing and kind of statements he is likely to find in his reading of scientific and technical literature” (Chris Kennedy and Rod Bolitho, 25).

An awareness of this led to the discourse oriented approach aimed at communicative competence advocated by Widdowson. From grammatical form, attention was shifted to the use of technical English to define; classify; to make hypothesis; to draw conclusion and so on. Formal grammar teaching became unfashionable when the communicative approach gained ground. Krashen put forward the theory that grammar is acquired naturally, if learners are exposed to sufficient 'comprehensible input'. The efforts to provide such 'comprehensible input' led to further research in this area.

### **1.2 Task Based Approach in Teaching Writing**

An attempt made by Anna University, Ealing College and British Council was fructified when a task based approach with an inbuilt remedial system was introduced through “English for Engineers Volume 1 and 2”. These books were prescribed for all the Engineering colleges all over Tamilnadu. But structural approach never really left the language classroom of engineering colleges, thanks to the wash back effect of the examination. Though the syllabus became task based and skill based,

the examination remained grammar based with a little checking of reading comprehension. The structural patterns A.J. Herbert set down continued to have their sway as questions on compound nouns, tenses, relative clauses, reasons, and conditional phrasal verbs are asked in university examinations year after year. In the Indian context instruction is mainly exam-centered. There are numerous text books and work books available now with traditional grammar exercises at the sentence level along with communicative tasks where language is used in chunks like business correspondence, essay writing, report writing etc.

### **1.3 The Wash back Effect**

The aim of the English course in engineering colleges at present is to teach language skills (LSRW) through natural acquisition of language. So the teaching or learning has no thought content to remember and reproduce in the examination. This makes the student assume that there is nothing to learn. The pass percentage in the city colleges is very high, always above 90%. But this does not reflect the linguistic competence or communicative competence. Even the students who manage to pass require remediation when he has to actually use language in real life situations. The student does not learn the required grammar making the need for focus on form essential (Koprowski 5-15).

Communicative method is oriented towards fluency at the cost of accuracy. Negligence of accuracy has made many linguists rethink on the effectiveness of the methodology. There is an element of disillusion in the mind of the teacher. When the attention is on accuracy, fluency is lost and when the attempt is to gain fluency, accuracy is sacrificed. This is the modern language teacher's dilemma.

### **1.4 Re-teaching of Grammar**

Linguists and teachers have very well recognized the need for remedial teaching at the tertiary level in the Indian context. Peter Strvens observes:

“In some countries the fact of having followed a long course in English at school is no guarantee that a practical grasp of common core of English has in fact been acquired, so that a special purpose course in TTSE (Technical Technological and Scientific English) has to be preceded by an emergency course in English from scratch” (Strevens, 223-224)

There is an assumption that a remedial program is re-teaching of grammar, but strictly register oriented and grammar based remedial course fail to motivate the learner. The students do not gain any confidence in the use of language: instead he is overawed by the amount of corrective learning he has to do. Very often he slips back to the same error that has been very painfully 'remedied'. The students are conscious

of the error at the sentence level but when they write a continuous passage, they repeat the errors.

## **2. Views of Applied Linguists on Remedial Teaching**

Allen and Widdowson advocated a shift of attention from the grammatical to communicative properties of the language, "...the difficulties which the students encounter arise not so much from a defective knowledge from the system of English, but from an unfamiliarity with the English use, and that consequently their needs cannot be met by a course which simply provides further practice in the composition of sentence but only by one which develops a knowledge of how sentences are used in the performance of different communicative acts'(122-142). In short there has to be a move from an exclusive concern with grammatical forms to at least an equal concern with rhetorical functions".

Richard Allright recognizes the difficulties of introducing a rapid review course of grammar. It is likely to take longer duration, as so many misconceptions that have taken root will have to be dealt with. The second difficulty is the severe risk of boring the learner because they have already learned it, however defectively earlier. He suggests capitalizing on the fact that collectively the students know the items and devise a minimal strategy course in which students are prompted to pool their collective knowledge and learn from each other. This will facilitate the development of learner independence from the teacher and mutual inter-dependence among the learners (171)

Pit Corder also decries re-teaching as a remedial measure. If the first teaching did not produce required results, there is no obvious reason why the second teaching should do so "(Error Analysis and Interlanguage 47). He argues that for effective remedial teaching we should understand the nature of the learner's difficulties. Only when we know why an error has been committed can we start correcting it in a systematic way.

### **2.1 Need for a Holistic Approach**

It is not enough if we concentrate only on typical errors of the learner and do spot repair. C.J. Brumfit says, "Language teaching is not packaged for learners, it is made by them. Language is whole people" (190). Jack .C. Richard and Gloria Sampson recommend an investigation of the entire linguistic system of the second language learner (5).

To know how errors are made we have to know the process of second language acquisition. Linguistic data and other associated non-linguistic data are processed in the mind of the learner and he makes his own hypothesis of the formation rules and speaking rules (Pit Corder, 17).

The learner's language is a unique system. It has been found that the errors made by a second language learner are systematic. It shows the learner has already formed a code of his own and is transferring it to the

target language. At this point we have to distinguish between systematic items he knows perfectly well. Such mistakes are just “lapses”. These are non-linguistic mainly caused by carelessness or psychological factors like tiredness, emotional stress, distracting noise etc. Other examples might be uncompleted sentence or sentences begun with one grammatical structure and continued with another. A lapse is a mistake, which can be corrected by the learner or the speaker when pointed out. But errors typically made by the learners cannot be so corrected. A lapse is a matter of performance whereas an error is a matter of competence. The errors, which are systematic, reveal the learner’s underlying knowledge to date or his “transitional competence” (Pit Corder, 10).

A learner’s errors provide evidence of the system of the language he is using at a particular point in his course of learning. Many terms have been used to describe this system of the language learner. Selinker calls it ‘inter language’. Pit Corder gives the name ‘idiosyncrantic dialect’ and Nemser describes it as ‘approximative system’. The learner is using a definite system of the language at every point in his development although it is not the system of the second language. The learner’s systematic errors are the evidence of this system. It is a system neither of the mother tongue nor of the second language but dependent on both.

The error that a learner makes is significant mainly in three ways. A systematic analysis of the errors can tell the teacher how far the learner has progressed towards the goal and what remains for him to learn. Secondly they provide to the researcher evidence of how language is learned or acquired, what strategies or procedures the learner is employing in his discovery of the language. Thirdly they are indispensable to the learner himself because making of errors is a device the learner uses in order to learn. It is a strategy used in learning a language. It is the way that a learner has for testing of the hypothesis about the language he is learning.

## **2.2 Fossilization of Errors**

During the process of internalizing a rule both correct and incorrect forms are used in the learner’s inter-language. All inconsistent errors are not of this type. Sometimes certain errors get so deeply established that they keep recurring even after the learner is made aware that it is incorrect. “Fossilizable linguistic phenomena are linguistic items, rules and subsystem which speaker of particular NL [ Native Language] will tend to keep in their IL[Inter Language] relative to particular TL[Target Language]” (Larry Selinker 34).

## **2.3 Reactivation of the Language Learning Process**

At the tertiary level language learning has more or less stopped. When rules are restated and mechanical drills are given we do not activate the

cognitive learning process and make the learner to re-examine his rules. Only when we do this we are on the process of remediation.

Inter language is a continuum. Language changes perceptively from one region to another from native language to target language. Fossilization blocks this continuum. This has to be prevented.

#### **2.4 Focus on Form or Meaning: An Analysis**

Accuracy cannot be sacrificed when we consider technical writing or business writing, or consequences in real life situations can be serious. How are we to successfully incorporate a remedial programme focusing on form without losing focus on meaning? In communicative tasks grammatical forms are taught implicitly, Should we resort to explicit rule giving? There is no doubt that there should be some focus on form for accuracy Skehan(1996,p.42) argues that it is important to make form – function connection clear by ‘devising methods of focusing on form without losing the values of communication tasks as realistic communicative motivators, and as opportunities to trigger acquisition processes,”

A good deal of research has been done in SLA with reference to focus on form in the last two decades. Doughty and Williams in their book *Focus on Form in Classroom Second Language Acquisition* (1998) has published a series of articles on focus on form. All led to prove that instruction in grammar is useful and should be done. De Keyser , brings in cognitive perspectives on learning and practicing L2 grammar and recommends sequential roles of explicit teaching of forms ( known in skill acquisition as declarative knowledge, (Anderson 1993,1995; Anderson and Funcham 1994) controlled practice (proceduralisation) and frequent opportunities to use declarative knowledge in communicative activities( automatization).

Swain (1998) in her article, *Focus on Form through Conscious Reflection*, showed that learners can be made to notice the imperfections or ‘holes’ by use of explicit rule presentation , followed by activities that require that the learners use output . During the process of output the learners in effect reflect on their own inadequacies , or notice the holes and they consult their explicit or implicit knowledge to fill in those holes.

Spada and Lighbown (1990) argue that even the acquisition of forms that are abundant in the input may be better aided by sustained integrated focus on form. Foster and Skehan (1996) in *Studies in Second Language Acquisition* also stress the importance of planned output tasks. In tasks for which planning time is permitted, learners increase their accuracy and complexity.

Norris and Ortega (2000) in *Effectiveness of L2 Instruction: A Research Synthesis and Quantitative Meta- Analysis* have found that instruction definitely has a positive effect. Instructional treatments involving an

explicit focus on the rule- governed nature of L2 structure is more effective than treatments that do not include such a focus. The effects are also durable. In other words, what the students have learned explicitly is remembered over time.

### **2.5 Balancing Form and Meaning**

The adult learner at the tertiary level has already assimilated a considerable amount of L2 input though in varying levels. The motivation level is fairly high. Most learners want to pursue higher studies and seek jobs abroad especially in countries where English is the native language. Those who seek employment within India also know that for getting and keeping jobs English language proficiency has to be improved. So the students have a fairly high level of 'integrative' as well as 'instrumental' motivation.

When we teach writing skills, grammar at the sentence level alone is not sufficient. Writing involves two major aspects: grammatical competence and discourse competence. All the grammar teaching stops at the sentence level in most classrooms today. Use of grammar in a continuous piece is not given importance in our teaching. Sequence of tense is an area which the students have not mastered.

Continuous writing which is original is not at all attempted by the modern students. All project reports are materials down loaded from the net and pieced together without much logical connection. Many engineering text books also fall under this category. There is a glaring difference in the style when the students try to express something about their own experiments and the language suddenly becomes full of grammatical mistakes. Very often ideas are not fully expressed but given by way of points. Comprehending their writing is difficult for an outsider who is not familiar with the subject. In the examinations students express only what the teacher has taught and therefore there is no real communication taking place. The examiner knows what the student is trying to say. When the learner has to express an original idea and actually communicate it to another person who does not know what he wants to say there is a communication failure. A common grammatical code between the reader and writer is extremely essential in real life situations. In spoken language the learner can depend on his body language tone, voice quality etc. But the written communication understanding is not possible unless there is a common code. In spoken English the student can rely more on strategic competence.

The teaching of writing has to be process oriented rather than product oriented. The case studies done by Vivian Zamel of writing as a process have revealed that "composing is a non-linear, exploratory and generative process" (165). It is a process by which meaning is created. According to A. Joseph, writers use a method of retrospective structuring. They go

back to what they have written in order to move forward. This enables them to look at writing from a third person's point of view. This is a skill that most learners lack at the beginning stage. In the early stages the structures have to be taught to make use of pre-writing technique. The teacher should train the student to 'develop and activate the generalized other' within himself.

Vivian Zamel suggests that instead of preparing comprehensive outlines we should encourage the students to take more informal notes or jot down ideas and reassure them that they need not know from the outset what they are going to say. The teacher has to intervene continuously through the writing process and guide the student. Students can work in groups and should be encouraged to read one another's reading. This enables the student to understand that writing should be reader-based rather than writer-based.

In order to help the student find the proper order of arranging his ideas, the teacher should ask him questions about his intentions, focusing on the discrepancies that exist between what the writer wanted to communicate and what is in fact communicated. This will enable the student to 'activate the generalized other' in himself. "Intervening throughout the process sets up a dynamic relationship which gives writers the opportunity to tell their reader what they mean to say before these writers are told what they ought to have done" (The Composing Process of Advanced ESL Students, 182). This type of teaching can provide an effective feedback to the students based on their real needs.

This also gives us a better idea about the student's individual problems, a better insight into his 'inter language'. Through the interaction that is shared by writers and readers it is possible to discover the individual problems students have with reference to syntax, spelling and vocabulary. It can help us to distinguish between "slips" and 'errors' and find out which mistakes are the result of incorrectly formed rules of the language. This can form the basis of further instruction.

As Pit Corder (1981) has suggested by examining the learner's own "built in" syllabuses, we may be able to know the learner's innate strategies to dictate our practice and determine our syllabus. We may learn to adopt ourselves to his needs rather than impose upon him our preconceptions of how he ought to learn, what he ought to learn and when he ought to learn it.

Our main aim is to enable the student of engineering to write English cohesively mainly for academic and professional purposes. The type of mechanical exercises or "controlled exercises" do not serve our purpose. Language is used not as isolated sentences but as sentences in combination. Practicing syntactic structures as is usually done in remedial classes does not help the student to use language in long

stretches of discourse. The student has to gain confidence in using language fluently without bothering at every point about the grammatical correctness of what he says. The kind of remediation done by means of re-teaching does not help this. The exercise should activate the cognitive learning process of the students. The student has to be enabled to see the inadequacies of his own rules of the language, and then form new hypothesis. The tasks one faces in writing are three fold

- How to link sentences together to form a cohesive text?
- How to connect ideas together to form a coherent passage?
- How to create the desired response in the reader?

So, as Allen and Widdowson in the article "Teaching the Communicative Use of English" edited by Brumfit and Johnson say, the students need "exercises which will help him to achieve a synthesis of many disparate grammatical and lexical elements in the form of a coherent composition of his own" (124)

### **3. Conclusion**

At the tertiary level our attempt has to be towards an integrated approach towards both grammatical and discourse competence. Individually the teacher has to assess the grammatical competence and assign further remediation. So teacher may have to constantly interfere in the writing process. Groups can discuss their writing and effect correction and improve themselves. Students have to put himself in the shoes of the reader and think of the impact he creates. Writing has a purpose. The learner has to check whether the purpose has been attained.

#### **3.1 Integrated approach towards both grammatical and discourse competence**

We have to prepare tasks in which students have to bring out some comprehensible 'output' of language as Swaine has suggested. The tasks may be related to the language use that the engineer comes across in his profession. The learner has to reflect and produce language. The teacher has to interfere in the process when necessary. Correction has to be individualized and specific exercise have to be designed for the individual learner for proceduralization and automatization of the language so that the grammar rule is implanted in the long-term memory as suggested by De Keyser. We will have to use technology as an aid to language learning here. Interesting and interactive computer based grammar exercises can be given according to the specific need of the individual learner. This may help in prevention of 'fossilization' and 'de-stabilization' of fossilized forms.

#### **3.2 Importance of feedback**

Individual feedback is essential. One to one interaction helps in consciousness- raising. An awareness creation sets the learner thinking and makes correction on his own. The remediation provided should be contextual, meaningful and appropriate. A combination of communicative exercises along with relevant grammar rules in a contextualized manner and an appeal to the individual inter language can make remediation successful.

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**C. Indira**

Associate Professor of English  
Hindustan University  
Chennai, India

**Meenakshisundaram**

Professor of English  
National Institute of Technology  
Tiruchirappalli,  
India