CHAPTER FIVE

REVIEW OF EXISTING INSTRUCTIONAL MATERIALS

INTRODUCTION

Chapter IV had presented a detailed account of the choice of the instruments for data collection, the procedure adopted, the findings and the data analyses. The implications derived from the analyses were stated briefly. The logical sequel to Chapter IV would be an examination of existing instructional materials, in order to determine whether these teaching materials could be considered adequate to meet the needs of the LCS courses at the Polytechnic. It would be germane to point out that just as needs analysis is sine qua non for ESP, the logical corollary is materials analysis. It is necessary to ascertain whether the materials match the contemporary language teaching principles and whether they can perform satisfactorily as tools of teaching in the specific milieu.

Chapter V is divided into three sections. The first section reviews the ESP textbooks published in India and comments on their usability in the Polytechnic context. The second section examines a few samples of teaching materials that have been prepared by Polytechnic teachers. Section three refers to the foreign publications that have been used with adaptations, from time to time by Polytechnic teachers. The chapter closes with a statement about the kinds of course
materials that are considered essential for use at the Polytechnic and which ought to be prepared for the three departments under study.

Materials evaluation can be based on three different perspectives: content, process and criterion. Content reference evaluations investigate to what extent materials and tasks meet curriculum specifications. Process reference evaluations study the relationship between learning tasks, the learning environment and the impact of the materials. Criteria-related investigations seek to judge the correlation of communicative needs and curriculum design in terms of broad pedagogical principles such as relevance, focus, organisation methodology, teacher role, usability and prescriptiveness.

An equitable evaluation of materials would emerge only if an appropriate perspective is adopted along with a transparent checklist of criteria. Dougill (1987:32) remarks succinctly, "There is a saying in Zen Buddhism to the effect that insights are gained not through answers but asking the right question". It was, thus, considered necessary within this research study to look at some ESP textbook especially prepared for Indian learners of English in the specific context of technical education in order to question whether they were suitable for use at the Polytechnic, using a combination of process and criteria referenced evaluation.
Each of the textbooks that are being examined, has been prepared with the purpose of providing effective means of learning English to technical students in India. Each is expected to be studied by technical students for improving 'communication skills', as distinct from English literature which was studied by convention, for itself and not as a tool. Each book contains presentations of selected reading material upon which are based on series of questions and exercises. The type, the handling and the thrust of the questions and exercises vary, but the concept of building learning activity based upon reading material is common in the four textbooks.

One of the books (TTTI Calcutta 1984) is intended to be used as a workbook so as "to have ... the students activity in one composite book ... save a lot of time otherwise spent in copying ... have a complete record of all the work they have done". The other three books have been written to be used either as textbooks or as resource books.

Reading passages in each of three books have the flavour of the technical register; the texts are actual technical discourse, reprinted, or adaptations of technical texts. For the fourth textbook (Anna University publication) the passages have been prepared specially for the book.

The purpose for the writing of the books are stated clearly in their prefaces:
"to offer such learning that would meet the needs of technical students whose mothertongue is not English" (TTTI, Calcutta, 1975), or in order "to develop the required communication skills which are going to play a key role in their professional life" (TTTI, Calcutta 1984), or to "update reading texts and provide greater practice in technical writing" (Sudarsanam 1988) and "to teach skills and strategies of reading and communication" (Anna University : 1990).

It was thought appropriate to review these books individually, in chronological order of publication, commenting upon i) the stated aims, ii) the presentation - including the learning activities generated, iii) special features including conventionality, terminology, headings, and iv) fluency of instructions. It was felt that such a review will reveal whether the instructional materials were in conformity with contemporary theories of communicative language pedagogy and if they seemed to be contextually appropriate and usable for the Polytechnic students.

5.1.1 English for Technical Students : Orient Longmans.
Ed. RG Bowers et al New Delhi 1975

Aim :
The Foreword declares that the book is meant for the non-native speaker of English. It is expected to help technical students to gain proficiency in using English for the purpose of communicating technical information. The term
communicating technical information' is vague about the 'type' of communication. It could be interpreted as reference to written communication - i.e. receptive as well as productive skills, specific to the technical register.

The authors state that the textbook could be used by "all technical students, whatever their specialisation". No effort appears to have been made to indicate the specific entry level assumed for the students, nor is there a clear prescription of course objectives. It is stated in the Preface that "comprehension alone is not enough if an active command of English is aimed at"; it may follow then, that the books seeks to offer much more than 'comprehension' exercises. The authors claim that students could expect to gain sufficient knowledge of English, develop adequate skills to receive and produce English language discourse for most needs. The authors also state that 'actual written work' had been analysed to arrive at common factors affecting the technical register, as well as the features of language usage which are typical of the technical register.

A note to the teacher suggests that the teacher should be aware of technical subjects, that the 'competent teacher' could use the book as a tool as she/he thinks to be fit. A balance between rules and examples had to be maintained and although bilingual teaching would be acceptable, "as much English as possible" ought to be used. The textbook is stated to have been designed to present a regular
development of theme and language complexity. A close study of the text is not expected; a non-rigid pedagogical approach is suggested. Pliant teaching is expected to allow students to express themselves. The material is to be used for rapid reading and overall comprehension rather than for minute technical study.

Presentation and Features: The book consists of 15 units, of five sections in each unit. "Word notes" are provided along with easy referencing facilitated by the numbering of the lines of the passage. Such a glossary is expected to help learners to overcome needless barriers to comprehension of written matter, and also to assist the learning of words as they are used in the textual setting. The explanatory notes on word-formation are complementary and reinforcing, particularly because examples are followed by exercises that serve to highlight rules of morphology by presenting the logical meaning in a way that technical students would appreciate. The Language Practice sessions attached to the comprehension passages are arranged in the following sequence:

1. Present Continuous (reporting what is happening now)
2. use of 'when' and 'as' connectives 'can' as ability.
3. Conjunctions 'and' (supportive), 'but' (contrast), 'or' (alternative) past tense, imperative (instruction).
4. Sentence structure and completeness - key words and nouns - order of adjectives the question form - interrogative with negatives.
5. 'as' to define and/or describe
   'such as' - to introduce more examples
   'as' to describe regular events ["as the material hardens"..]

   simple present verb form - singular + s; plural; do - does.

6. Reporting questions : whether, why
   question form : inversion of syntax

   Passive form of the verb : emphasizes the action
   use of 'by' : to mention the action performer

7. 'which' as Conjunctive : Connective 'who' and prepositions:
   of, by, in, to, for.

   Omission of 'which' : ellipsis
   infinitive : in order to'
   verb + infinitive verb

8. 'so that' : so, and so, consequently : express the result

   shall-will : showing future .. what will happen,
   future perfect

9. Interrogative: using 'when', 'who', 'how long'.

   verb forms with 'to' : present, past (sic) continuous, seems
   appears to + verb forms.


   Prepositions, present perfect; Negative : 'not'
10. Paragraph writing: Organisation and punctuation
   past passive: use of (tabled) options, participles

11. Comparatives (using + er); less-more, not as - as, better
   than/present perfect passive form - has/have + verb form
   may - might (degree of possibility);
   may = permission

12. Conditional 'if'  Unless = if ... not
   has to = must, will have to, must not.

13. Perfect form verbal clauses used as adjectives.
   e.g. "the beam which has been welded" = welded beam
   by + participle
   Conditional if + past verb form

14. Past perfect; past continuous
   relative clause change in past tense
   Use of 'it' as indicative

15. Substitution of verb: verb use without even choice/change
   of verb reference, changing to passive/past/use of verbal
   chart/sentence construction.

Fluency of instruction: It is evident that the sections,
listed above, do not relate with the reading passages, nor
is there a discernible scheme or logically progressive
development of units. They could have been placed in a
separate part of the book, with page reference markers, to
indicate usage in the passages. The explanations, though adequate, do not relate cogently with the elaborate Verb Chart provided. The chart (Appendix 32) would have to be explained very carefully by a skilful teacher for it to be used by the students. It is doubtful whether the memorisation of the chart will be worth the effort by the student at the elementary level. It has been seen that students from regional-medium schools usually have fossilized error patterns which do not dissolve easily. Burdening them with a complicated verb-construction grid, may not be productive pedagogy. The section for composition uses cloze passages and refers again, to the verb chart. If the teacher leads the students towards correct referencing, the exercise may lose its effectiveness and purpose. Conversely, if the students work without guidance, they may make mistakes repeatedly - thus achieving little learning but more error enforcement.

Paragraph writing forms part of the section on composition. It is presented at an elementary macrolevel. No attempt seems to have been made to teach the essential integrating factor in written communication: cohesion. Cohesion markers are useful in technical writing; they have not been included.

This was one of the first ESP books published in India. It represents the beginnings of the awareness of a need for specially designed materials for special needs. Wilson
(1986:12-13) states "Many published ESP courses however, consciously control the level and relevance of one aspect of a task only ... other aspects may be forgotten or ignored ... We then have language practice divorced from any communicative function. This can be called ritual ... At their (students') tertiary level their need is to use English as a tool in their professional studies and it is unlikely that this can be met by yet more ritualistic language practice". It appears that this text meets the stated aim of the book ritualistically. Presentation, explanations and task activities seem to be capable of generating, only to a limited extent, the "active command of English" that has been claimed. The teacher's role is expected to be facilitative, "to allow students to express", the book being used as may be considered fit by the teacher.

Despite this putative flexibility, it is felt that the contents of the book are inadequate for use as a text at the Polytechnic. The book may serve only as a reading text, followed by discrete grammar exercises. These would not be related to the learner's real needs - academic or professional. It appears that the book under review does not meet any of the references of evaluation: in terms of content, process or criteria.
5.1.2 Communication in English for Technical students TTTI Calcutta, 1984

Published "to keep pace with changes in English language teaching methodologies to update the reading texts and provide greater practice in technical writing", the book was a revision of the 1975 textbook (and was written in collaboration with the British Council). Although the Author's Preface does not mention which particular changes in pedagogy are being incorporated, nor what principles helped in deciding about updating the reading text, there appears to be a distinct change in the role assigned to the text as a 'resource book'. The teacher is given the freedom to select units from each of the four sections, according to the perception by the teacher of the need of the student group. The text claims to be student-centred and is designed to be used as a convenient workbook. Tasks are set to enable collaborative group work, with the teacher playing a catalyst's role as a classroom manager.

Presentation: The book consists of twelve units in each section. The Reading section comprises four parts: pre-reading, detailed reading, reading for information understanding of structure and application of grammar rules. Exercises have been constructed for preparing information frames based on detailed readings and for analyses of text structures. These classroom activities could encourage students to realise the importance of cohesion in text.
Students are expected to learn meanings of words from contextual references, word analyses, searches for synonyms and dictionary work. These exercises show a distinct improvement over the discrete exercises included in the earlier edition.

**Features**: There is a marked change in the presentation of grammar. For example, no definition of prescriptive rules is given; subject-verb agreements, do – does, negative statements, are presented without preamble. A brief treatment offers a concise explanation, along with a time frame continuum which seems to be within the reach of L2 learners.

It is noted however, that in the section on the present verb form, the difference between perfect and simple forms has been left unexplained, with the assurance that it will 'become clearer with practice'.

Cloze exercises for word formation activities deal with Nouns and ends, Common roots in Technical English, Word beginnings, Negative prefixes, Adjectival ends, and Nominal Compounds. These specific language uses are clearly related to the technical register and discourse needs; they are seen to be useful for developing a knowledge of technical vocabulary and style. It must be noted that the textbook uses the discourse of technology which would be within the experimental boundaries of students of engineering, but not of the paramedical specialism. It would therefore not be suitable for all Polytechnic students.
The section on Writing is ambitious. It discusses without illustrations abstract factors of good writing (Audience, Organisation, Style, Flow and Accuracy), as well as writing forms (Paragraph writing to Process description, Problem Solution and Data Comment). Technical Writing such as preparation of tenders, project reports as well as other types of writing such as Applications, Memoranda, Summaries and Examination answers, are also commented upon. The Introductory unit explains the need for consciousness about reader expectations. Sentence flow, use of connectors, comparisons, pronouns and determines are explained. But examples of some essentials are conspicuously absent. The use of instructional verbs, the need for organisation of writing, and the development of the style appropriate to the context must also be taught with examples, in a course for technical communication. It would be essential to emphasize all the elements, mentioned above, in a course for technical students.

Fluency of Instruction: It would be apposite to comment on some of the exercises. In the lesson entitled Naskar Project (pages 196-203), good discussion opportunities are provided in the exercise as required for communicative teaching.

Project report writing has been explained and the activities related with the process of writing reports have been well linked. There is, however, an omission of an essential
ingredient of formal reports - Terms of Reference; it would be necessary to include an explanation of this important part of report writing.

Summary writing (pages 208-211) for examination answers, has been developed logically and could prove useful for students who are preparing for an examination that is constructed in the long established conventional design. Nevertheless, the inclusion of the unit appears to have a limited use. It may have been more appropriate to include some exercises on notemaking, which is an important study requirement, as revealed by the research study. (Chapter IV)

The discussion on examination answers, though useful as a comment on the need for concentrating on imperatives and appropriateness of genre choice, is seen to lack the relevance of register, because the discussion is based on a test paper for the subject of Economics. The book has been written for a specific student group whose lack of familiarity with Economics would serve as a hindrance to learning. Although the conceptual frame of the textbook seems well-suited to ESP, it does not meet the demands of the Polytechnic setting. The text and exercises do not answer the Polytechnic learners' needs wholly. The book would be useful, provided the teacher-facilitator attended to the complex and lengthy system of pre-reading, detailed reading, reading for information structure, and application,
as well as the code of symbols. Classroom management would need skilful handling.

In terms of the four criteria suggested by McDonough and Shaw (1993:78) usability, generalizability, adaptability and flexibility, it is felt that the concept stated by this book, of student-centred, activity-based interactional learning does have contemporary freshness. But the structure of exercises in the book under review, is not simple. The presentation is complicated and would require teacher intervention and close guidance at every level. The book does not meet all the criteria, and is therefore, not wholly acceptable as a textbook for all the Polytechnic students. The text book has been published by Orient Longmans and has been reprinted twice, but the Teacher's Manual which contains crucial advice on classroom methodology is not easily available. It does not appear that the text is as student-friendly as is claimed, but it marks a conceptual innovation which could be adapted for Polytechnic use.

The specific needs of the specific learners at the Polytechnic would provide the bases for preparing the materials suitable for teaching language communication for the academic setting as well as for communicating in the professional field. It has been seen that the needs of the students of Pharmacy and MLT are similar in some respects, but those of the Electronics students are distinctly
different (Chapter IV). The professional needs of each discipline also differ with regard to the weightage for skills and genre. The need for developing skill in spoken communication has been seen to be of considerable importance. This has not been addressed specifically, in this textbook.


Aim

The book targets "students joining Technical institutions" and claims in the Preface that "this textbook will enable the student community to develop the required communication skills which are going to play a key role in the professional life". It aims at "teaching about 600 new words ... specifically required for reading textbooks written in English on subjects of scientific and technical nature".

Presentation and Features: The avowed essential ingredient of this course, vocabulary, is introduced through 18 passages accompanied by composition and vocabulary-based exercises. Grammar units and a glossary of new words, given in scientific contexts are worthwhile components of the book. Although the conceptualisation of materials and exercises appears to be based on contemporary principles of discourse and communicative teaching, the language of the text requires editing. The following are some examples from
the text, of that which could be improved:

Unit One: The miner goes to work: In a paragraph of approximately 200 words, mostly in present time form, these are:

i) inconsistent verb uses: __________ the shaft will be lined

Nearly will be sheds ... miners learn their jobs.

ii) Non-standard uses: there are many rules about* safety

: he uses a lamp to test for* gas

iii) Unacceptable definitions: a set of shelves with doors in front = a cupboard.

a vertical passage for entering into* a mine = shaft

support place under or against something = support

the state of being watchful = on the look out

not allow it to fall = to keep up.

iv) The questions framed to check reading comprehension include the following, whose instructions appear to be unclear:

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>distinguishing components of compound words</td>
<td>Expand the Compound words</td>
</tr>
<tr>
<td>understanding words as homophones, phrases</td>
<td>Use the words in two or more different meanings</td>
</tr>
</tbody>
</table>
showing comprehension of text: choose options (which are easily recognisable)

rearranging sentences logically: rearrange in proper order.

Of the composition tasks, Number one: "Describe a day in the life of a miner", may obtain a routine reproduction of the text - words and phrases being lifted from the text, without offering any opportunity to the student to produce language. Task number three asks for a description (in 150 words) of safety measures. This could be beyond the capacity of a student at this stage. The Grammar exercises are divorced from the passages. They are not worked from/out of the texts given. Definitions precede examples; they are not derived from examples.

Although 'tense tables' are skilfully constructed, the exercises are discrete.

Fluency of instruction: The instructions given for the grammar exercises lack clarity. Explanations of the sequence of time are not given, examples are sparse.

The option columns for basic sentence patterns are confusing; nonsense sentences could be formed by applying over generalisations of patterns. The difference between these grammar sections and a Direct Method grammar lies only in the use of some sentences which have 'scientific'
subject matter. Separate units have been provided to practise Anomalous Finites (sic), the use of 'not' as a negative device, the syntax of the interrogative, and adverbs of time. Question tags are also included although they are rarely used in written scientific and technical discourse. On the other hand, only a brief explanation is given to introduce 'modals' of which a high frequency has been found in scientific text (Trim 1969). In Exercise 39, confusing directions have been given involving time phrases, using underlining of words instead of italics.

On page 143 - 145, the modal 'would' is explained confusingly as "future coloured with promise, prohibition or obligation" and inadequately as "hypothetical situation". The explanations given for the Passive construction (Ex. 47). Infinitives and modifiers, are ineffectively brief. For example, on page 164, the conversion of the sentence "We are proud to have built the bridge in one year" seems to lose its pedagogical value because of insufficient explanation. Subject-verb agreement and use of prepositions are adequately treated, but some more examples of use would have been useful.

A study of the Glossary section yielded several examples of unacceptable meanings. A few are given below:

alteration : coming one after another
amplification : exciting and strengthening
This book also does not seem to meet the requirements of the Polytechnic students, not only on account of the imperfections (as shown above), but also because the tasks do not match those identified as Polytechnic requirements. This book had been prescribed for study, at government polytechnics in Maharashtra. Commercially available "Guides" repeat and compound the many imperfections in the books as is evident from the extract (Appendix 28). Chapter III (3.4.3) had critiqued a test paper constructed for students who read this textbook, which has been shown to be mostly unsuitable for use at the Polytechnic.

5.1.4 Understanding Technical English : R.Sudarsanam 1988

Aim : This book claims to meet the needs of First Year BE students. The objectives stated are to teach "strategies" of reading, comprehending, interpreting textual communication, using language (as scientific argumentation), and converting textual notes into nonverbal forms. The author addresses the self learner, putatively offering integrative learning, both horizontal (discourse) as well as vertical (text material).
Presentation: Ten modules and five submodules provide activities involving 'problem solving' - in faithful emulation of contemporary pedagogical theories - each hour of classwork is declared to be paralleled by another of self-study. The teacher is expected to motivate the learners and to induce language learning in the users of the book. A model evaluation procedure is also included a guidance for testing post-course competence.

Features: The book "attempts to teach skills and strategies of reading communication through problem posing and solving (sic) tasks, and to make the process of 'learning' interesting, effective, methodical and self sustaining". It claims to provide "a pioneering model in organising learning - teaching of language skills in the form of educationally viable and 'self-learning' modules" (Foreword). The role of the teacher is to "promote a systems approach among the learners to learn on their own and to facilitate the internalisation of the procedure". The tasks have been organised in such a manner that the teacher can "promote" learning by prompting, focussing on clues, illustrating and seeking contextual clarification. Indisputably such a role would necessitate a skilful and well-adjusted teacher who would balance judiciously, elements of guidance and facilitation as well as overt tutoring.
The tabular presentation of Learning Objectives of the Modules, is a useful reference source. It sets out the five sections of each module: Comprehension, Discourse Logic and Coherent thinking, Functional Description, Cloze text and Integrated Grammar and Listening Comprehension. The Comprehension section has conventional questions that are expected to be answered by students after discussing the issues with their peers. Section B consists of exercises that are intended to be useful to develop the understanding of words in use. These exercises are arranged according to their "difficulty-level", from guided and cued tasks to free open-ended tasks. Section C teaches intensive and close reading strategies; it draws attention to identification marks for shape, size and parts. Instructional exercises are designed for learning to recognise and understand features of specific technical discourse.

Section D appears to display a communicative approach in its use of the cloze text procedure and in the expectation that answers to questions will conform to standards of grammatical acceptability, contextual relevance, and communicative appropriateness. Section E concentrates upon practising strategies for listening through role-playing and dialogue practice.

**Fluency of Instructions**

It would be commented that although the structure and conceptualization of the sections and exercises are
theoretically justifiable, in terms of 'usability', there could be problems because of the strenuous and involved verbosity of the instructions. A study of Module 1 (Pages 1 to 11: Language - Use in Description) shows that several words and phrases used in the explanatory and instruction sentences would confuse the learner rather than clarify task/activity expectations; for example, the use of phrases such as 'figural imagination', 'contextual meaning', 'gradation in meaning', 'discourse connectives', 'functional description'. It seems unlikely that learners will be capable of handling such phraseology of description. The student is asked to 'read the passage forwards and backwards' (page 8); competence levels demanded by the various exercises are disparate, for example, comprehension questions on pages 3 and 4 can be answered only if the student has deductive perception, which may not have been developed by the student at this stage. Although it is evident that developing deductive perception would prove of value for a technical student, it can not be assumed to have been obtained, at this stage. On the other hand in contrast, the cloze texts for Integrated Grammar (page 8 and 9) appear to have easy options which seem of little consequence, particularly because the first letter of each word is supplied. Similarly of little value are the examples given in the Listening Comprehension and Conversation section which include unrealistic responses in the conversations. For example, the Teacher's response to a request for help "Sure, with pleasure", or the reply 'I see' to the student's
question: 'May I know where the interview is (sic) conducted'. In another conversation given to serve as a modal (page 11), the student and the librarian end their conversation by saying 'Bye' to each other. Such informality may be desirable, but is not likely in the Indian educational context. Such departures from authenticity would detract from the validity of the instructional material. Some exercises are seen to offer unacceptable options, as in the section 'Language use in classification'. The instructions are "Fill in the blanks with the appropriate words". The example given is "It is not cold and hence, I have removed my woolen sweater". The choice is between 'ice', 'freezing', 'damn*'. The expected answer for the blank space is 'freezing'.

Despite the claim that the exercises are designed for 'self learning', it appears that sections B and C cannot be handled without very close monitoring and clarifications by the teacher, particularly because the classification charts (page 20) would need to be explained and their use demonstrated in detail, before the student can be expected to 'self-learn'.

The book is expected to be used for one semester comprising fifty 'class hours' and fifty 'home hours'. It would be imperative that such a pedagogical design would be supported by perfection in textual content. However, language use in this book appears to be non-standard in many instances. For
example Pages 24-25 Q.1 (a) What is the cause of * the
stains in * the shirt of Gopal'.

Task # 3: In the conversation, the student uses the word
'Well' four times.

Page 33: "Name the gases which the author calls as*
respirating gas."

Page 37: "Model Conversation " ... I have* temperature
(sic) for the last two or three days."

Page 38: "Penicillin, a heavy dose may prove fatal with*
them ... the acid flows down to the bottom bulb
and then the reaction will* ensure ... gas
cannot escape... its downward pressure will*
increase".

Page 47: a diagram describes the procedure for extracting
Chlorophyll. The exercise would be found to be
very useful for science students who are often
required to describe experiments and procedures.

Page 51: In comparison, the book has an exercise labelled
'Seeking and Giving Directions' which is
inconsistently elementary.

Although the book is putatively a linear
development of skills, it seems over-ambitious to
expect that learners will be able to attempt the
exercise on pages 154 - 158, within approximately 30 hours of study. The exercise discusses a technical article (Leaf cutting Activity in the Ant) which subsumes advanced-level study skills.

Appendices I, II and III of the book (Pages 167 to 176) give the framework for composing written tests, list foreign language phrases and provide a model question paper which may be suitable for BE/B.Sc. Agriculture Final Examination, along with the framework for a two-hour practical test. Appendices I and II may be found useful for developing tests at the advanced level. They do not seem suitable for the elementary or intermediate levels for diploma students. Further, although some sections may be appreciated by a reader with a technical background (e.g. Page 21 Paragraph organisation: which explains in a logical and well-structured manner), it may be stated after an overall analysis that the text cannot be used for Polytechnic students unless it is adapted or modified extensively.

5.1.5 English for Engineers and Technical Students, Anna
University, 1990 Madras

Aim

This textbook is written for undergraduate students of engineering and technology, "who see English in different settings and for different purposes". The Foreword states that the aim of the book is "to impart the students the skills they need in their academic and later their
professional pursuits ... old course materials ... were not conducive to the development of study skills and communicative competitive in the student", and therefore, there was "a need to develop an appropriate course in English ... to adopt an innovative approach to English teaching and learning". The authors also believe that "the use of this textbook accompanied by the adoption of a learner-centred approach in the classroom will develop in students ... relevant study skills and provide practice in the communicative use of English."

The Preface claims that "the new materials are task-based and skill-oriented" that, "actual use of the English language" is demanded of the students, and that interaction is encouraged.

**Presentation and Features**

In the Introduction to the materials, the authors state that the topics used in the book have been exploited so as to maintain interest and motivation and also to offer a balanced programme of "carefully graded activities ...". Each 'topic' comprises three units with four contact sessions for each unit. The main section (Part I + II) of each unit is to be tackled by the students, whereas the support materials (Preparation and followup) are designed to help slow-learners to cope with the main sections. There is, in this manner, an attempt to deal with the typical heterogeneity of levels in large classes. There is the
possibility of handling the materials in several different ways, as may be convenient according to the time available for the study of English Language. This inbuilt flexibility is noteworthy. Similarly, the 'Note to the Teacher' is well-organised - it states at the outset that the course book "should be able to improve their (students') effectiveness in using English in real life situations especially for their chosen profession". Useful guidelines are provided for handling the materials. The Reading tasks are to be completed individually, in pairs or in groups and the answers are to be arrived at through discussions. Listening tasks are designed to give students practice in taking notes and are to be administered in a manner that would be within the ability range of the students. Students are to be encouraged to practise role-playing and to develop the skill to criticise and edit independent writing. The Language Focus exercises deal with developing "awareness of the language and how it works". By the use of Engineering topics which would be closer to the cognition spheres of students, "a spirit of cooperation" was expected to be created, between the language teacher and the learners. The authors expect that separate classes would be arranged for slow learners who would follow the main materials in their regular classes. Teachers were directed to pay special attention to psychological aspects in special classes and to encourage fluency rather than accuracy. Contrarily, the authors concede that the materials may not provide sufficient challenge' for those students who "have
already an excellent command of English". Such students, they suggest, may be asked to 'adopt' less able classmates - to help them in completing the tasks to collect supplementary materials, to play lead roles in discussion etc. The authors also record their belief that the communicative and learner-centred approach used by them earlier with administering materials which have been included in the text book, had met with discernible success.

The main 'course view' lists twentyeight Reading sessions, eleven sessions for Listening skills, sixteen sessions for Writing skills, twentyone for Oral Fluency, in addition to eighteen for Language Focus and seven for Learner Awareness. The time to be allotted for each unit is not clearly stated, therefore, the effective administration and use of the textbook would depend on the skill of the teacher - 'facilitator' - particularly because although the course design is within a largely linear frame, it is also partially spiral, since each task type is revisited, with increasing complexity levels.

Fluency of instructions

This textbook, is similar to Sudarsanam's as it spans an extensive range of language skills and activities, from the elementary to the advanced. As a resource book that could offer templates for developing teaching materials, the text book is rich and eminently worthy of recommendation, but as a textbook per se, it would fall short of standard of
coherence suggested by Dougill (1987). It would be unrealistic to expect that students would achieve academic skills and proficiency in English Language just by studying this textbook. Considerable reinforcement through continued practice of such skills would be imperative for achieving communicative competence. Dougill refers to four cardinal points for evaluating teaching materials: Face validity, generative push, coherence and affective depth. This textbook exhibits face validity in the clear statement of the aims and underlying intentions of the authors. It also seems to have been so designed and presented as to enable students to generate language outside the classroom, at least within the formal domain. However, it seems that the textbook seeks to achieve far more than is possible within a limited period of perhaps a year, and is therefore, too dense as a self-sufficient package. It seems unlikely that students will reach the targeted communicative competence within the year unless the academic schedule permits a considerable increase in hours allotted for English Language.

Janice Yalden [1983:106] comments, "The idea of specific purposes implies only that there is a limit to the amount of time the learner can spend on the task, and it is accordingly necessary to select certain aspects of the target language which will be given special prominence...." From this point of view, the textbook being reviewed would need more than the one year allotted for its study. The
celeritous pace expected in learners is likely to transgress one of the cardinal criteria of ESP pedagogy: judicious planning of time and ability, pace and coincidence of skills. Further, the contents are expected to appeal to students of 'Engineering and Technology' — addressing a general heterogeneous category rather than distinct and specific professional types. Although the stated aim is to impart academic skills and those required for professional pursuits, such distinct needs of different professions do not seem to have been punctiliously addressed.

The book is pragmatic in assuming adult capacities in learners to tackle topics like Resources, Energy, Computers, and Transport. These are subjects of common interest equally relevant to all the students at this stage of education; the topics may not be closely related with specific professions but can be expected to hold the attention of students. However, lack of direct relevance could distance the topic from pedagogic effectiveness if its non-specificity distracts the learner.

The presentation of information is direct, open and well-categorised; illustrations and symbols add appeal and lend cohesion to activity packages. The activities are planned to deal with all four skills of communication, are based on each topic and are spread over approximately forty pages with three units, each comprising preparations (part one and two) and follow up sections.
This text could only serve as a springboard for ESP materials development for learners at the tertiary advanced level of education, similar to that required at the Polytechnic. It cannot be used as a textbook nor can the sections be used fully, or without adaptation if extracts are taken for discrete uses.

This section of Chapter V reviewed five ESP textbooks published in India, to assess usability in the polytechnic context. The second section of this chapter describes some teaching materials that have been used at the Polytechnic. These are exercises using adaptations of written materials from mainstream subject texts, or exercises specially composed for the specific learners, by Polytechnic teachers.

5.2.0 Instructional Materials at the Polytechnic

Chapter III had described pedagogical conditions at the Polytechnic and the autonomy enjoyed by the language teachers, with respect to teaching methodology and testing. It could be assumed that Polytechnic Language Teachers had prepared materials as they had assessed would be specifically appropriate for Polytechnic needs. It would then be apposite to examine such materials in order to gauge whether they satisfy the criteria implied by the research analyses. The scrutiny is expected to establish their overall suitability for the Polytechnic curricula.
A random selection was made of the materials that were being used at the Polytechnic. Over the years, teachers at the Polytechnic have used excerpted materials from ESP and ESL texts published abroad, adapting them in the manner they considered necessary. Chapter II had discussed the lengthy stream of teachers of whom a few have taken the initiative to prepare materials of their own. It had been noted that the materials at the Polytechnic are in four forms: i) Written texts with related exercises dealing with two or more linguistic skills, ii) OHP Transparencies iii) Pre-recorded audio cassettes (BBC or others) iv) Video Cassettes - (U.G.C. or others). Of these, some written materials will be reviewed here, as instructional materials extant at the Polytechnic. It was thought appropriate to review only those materials that had been prepared between the years 1988 and 1993, which were spanned by the respondents (alumnae and present students) to the questionnaires that were administered for data collection, as discussed in Chapter IV.

5.2.1 Pharmacy Department (Appendices 29 A to F). The six units which have been selected as sample materials, are examples of Communicative ESP teaching. The two reading texts (units 1 and 2) with comprehension questions have been carefully adapted from specialism texts. The questions have been framed in a manner that would ensure that students would not merely pick out chunks from the passage as answers to the questions, but would first need to comprehend and analyse the matter. The process of reading and answering
questions based on the passage was expected to replicate academic demands in the context not only of studying mainstream subjects, but also of answering specialism subject tests. The questions are concerned with all the elements of language, incorporating vocabulary cognition, grammar and composition. Although an identification of the time frames (tenses) or relationships (relative clauses) lexical markers (conjunctions, connectors) is also expected. The approach illustrates integrative teaching which encourages learning of the use of language rather than memorizing of the prescription of rigid rules as in the archetypal "English class".

Unit 1 offers a short stretch of text, stylistically typical in density and vocabulary of the specialism-related texts usually read by students. The questions are posed in such way that answering would be possible only if the student could analyse and comprehend the written matter, by studying discoursal features. At the entry level the Polytechnic student betrays inadequacies even in reading comprehension and simple analysis. Units similar to this sample can be used very fruitfully if the typical class of forty students can be divided into small groups which would discuss each question, seek guidance from the teacher, receive individual help if necessary, and formulate the answers. The questions can be seen to deal with factual comprehension, classification, in-depth analysis for essence and vocabulary study.
Similarly, Unit 2 uses a technical (specialism subject) text, to draw attention to linguistic features which are crucial to the comprehension of the passage. The exercises are expected to sensitize the learner to the use of deictic markers, and other lexical markers as well as to exemplify cohesive techniques. Academic needs of language communication skills include the ability to read stretches of text, to comprehend and derive essential ideas and to process the information so as to state it again. Further, question four injects a keen insight into the use of language for time reference. A discussion of phrases 'which refer to the future' could be used skillfully by the teacher to motivate students to produce sentences and to internalize such typical phrases.

Unit 3 contains five paragraphs about a topic which could be interesting for the students because materials have the 'learner authenticity' described by Nunan (1988:102) "For learners to authenticate materials, these need, minimally to fulfil two conditions. In the first place, they need to be recognized by learners as having a legitimate place in the language classroom. Secondly, they must engage the interests of the learner by relating to his interests, background knowledge, and experience, and through these, stimulate genuine communication". Not only in content, but also in activity, authenticity is sustained in this unit. Mainstream subject teachers at the Polytechnic had commented
during the interviews for data collection, upon the need for students to develop the ability to organize information logically and cohesively [Chapter III]. This task of arranging the paragraphs in the right order would necessitate focusing on lexical markers, the intrinsic progression of ideas — as may be viable in the use of articles, time references, suitable introductory and concluding phrases; additionally, discussion of these features could lead to meaningful teaching of incidental lexis including word particles and medical terminology which is within the specialism field of the students.

The three units described above were samples of materials used in Semesters I and II during which the objectives of SLC largely relate to the immediate needs of the students in academic roles. This research does not extend to the remedial teaching that is offered at the Polytechnic for Semester I and II students from regional medium school, but delimits description to the materials used in regular classes for those semesters.

Unit 4 (Appendix 29D) is an exercise which aims at providing an authentic activity that will develop the job-related skill of report writing. The task projects data which have to be analysed, interpreted and processed before being utilised for producing discourse. The stages within the unit approximate realistically to the conditions likely to exist not only in the mainstream subject classroom but also in the field.
Data collected from alumnae, employers, as well as subject teachers (Chapter IV), had indicated that report writing skills were important in the academic as well as professional contexts. The effectiveness of teaching material stems from the materials writer's awareness of the target needs of the learner, combined with the ESP learner's awareness of the relevance of the language exercise to the professional field. It could be stated that the sample presented here would be seen by students to have that transparency of purpose which is crucial for successful utilization of pedagogical materials.

Presentation of specialism subject matter in the form of an abstract allows the language teacher to circumvent the serious difficulties usually faced by language teachers on account of insufficient knowledge of the specialism subject. It would be possible for a skilful teacher to concentrate on the lexical features and the integrating elements of language, and to help the student to construct authentic, discipline-specific discourse. The unit contains usability, flexibility and can be adapted for focussing on grammatical features, punctuational conventions typical of the medico-technical field, classification as well as extended writing.

Unit$^5$[Appendix 29E] comprises an exercise based on a press advertisement of pharmaceutical laboratory glassware. The
task activity is expected to replicate an authentic professional situation. The presentation of the details of industrial and laboratory glassware provides a fairly accurate simulation of a likely scenario which will expect a pharmaceutical technician to be able to base an enquiry upon the (usually insufficient) information offered by such advertisements, these often do not include vital information about prices and commercial terms. Technicians are required to make enquiries before placing orders. The sample unit would be considerably improved if the instructions were clear and unambiguous. The identity (role) of the writer, the context of 'requirements' and information needs should be stated. This teaching unit could be adapted for an exercise to practise spoken communication, for simulating suitably representational spoken interaction. Such an exercise would approximate to learner need and would therefore motivate learning.

Unit 6 is an exercise in extended writing. It is based on a chart that presents the classification of Fabric. The student is required to write a short paragraph that will explain the classification. It seems obvious that the exercise would make light demands upon the linguistic knowledge of the student; its use for students of Semester IV seems misplaced. It could have been used for Semester II students, adapting the instructions by offering a suitable topic sentence for the paragraph or modifying the exercise for teaching spoken communication. Grading of instructional
materials and appropriate use, is a prerequisite for effective pedagogy. This research effort would seek to reorganise course components and materials accordingly.

This review of some teaching materials prepared at the Polytechnic for Pharmacy students, reveals not only the sincere effort that has been made to relate teaching to learner needs, but also the partial success of the effort. However, it has also shown that a pragmatic examination and revision of instructions, reorganisation and redesigning of materials would increase their effectiveness and validity.

5.2.2 Materials for Electronics (Appendices 30A to D)

Unit I (Appendix 30A) was prepared for Semester I. It was based on a reading exercise and followed the conventional pattern of 'comprehensive questions' and vocabulary study, but also included questions aimed at initiating deeper analysis of facts comprehended (Item 4 A, B, D). Item E would require indepth understanding of deictics, which may be beyond the capability of course entrants, but may be useful in Semester II.

Item 2 has communicative value and is efficacious because the topic used is subject-specific. That would support the student's concentration upon the linguistic tasks of relating cataphoric and anaphoric references as well as reorganising the parts of a coherent and cohesively composed paragraph. Developing the ability to construct a coherent
and cohesive stretch of discourse would be advantageous in the academic context even at the earliest stage.

Similar transparency of purpose can be seen in items 3A and 4B. A language teacher would generally be intimidated by the overpowering density of the technical register and subject matter, but instructional material of this kind could succeed in imparting knowledge of the use of language and the basics of communicative competence, without enmeshing the language teacher in a tangle of technical matter. The teacher can gainfully comment upon grammatical options, syntax and semantics. The agendum for the pedagogical procedure would utilise interactive and cooperative learning, which would instantly capture students' attention and motivate beneficial participation in a way that the typical 'English' lesson perhaps would not.

Unit II (Appendix 30B) for Semester II is another example of usable instructional materials that are embedded in the technico-specific ethos and which can be manipulated for productive linguistic activity. Familiarity with imperatives, directives, process description and experiment reporting, is an essential element of desirable communicative ability in electronics technicians. Primary awareness of linguistic systems, understanding of the need for precision in imperatives and their logical organisation can be imparted through the use of such materials.
Unit III (Appendix 30C) aims at teaching precision in describing for the purpose of defining, by using five exercises of various skill-types. The presentation is conventional - a reading comprehension passage - but the questions are framed imaginatively, to induce analysis, classification of data and incisive comprehension of the text. These are academic needs and are expected to prove of immediate relevance to students who are often asked to supply brief definitions, as also short descriptions or essential features of concepts, implements or machines. Item D of the unit gives practice in composing precise and brief definitions. Each item in this unit can be successfully utilised, by working in groups which can discuss the answers, thereby drawing the benefit of lively interaction and practice of spoken communication, in addition to writing practice.

The unit was used in Semester III, but the pedagogic objectives coincide with the needs of Semester II students. It would therefore, be advisable to use it accordingly. Judicious grading and sequencing of materials is crucial for the successful implementation of any course design, [McDonough and Shaw : 1993].

Unit IV (Appendix 30D) deals with visual representation of data. It has been seen that scientific data is often presented through diagrams, graphs and charts. The ability
to compose these visuals is a practical asset for a technician at the academic as well as professional stage. This ability is inextricably intertwined with linguistic communicative ability. Repeated practice of interpretation of written data and translation into figurative representation - and vice versa - is likely to prove of immense value.

Polytechnic students of the Electronics Department are required to submit project reports in the final semester, as part of their diploma curriculum. Classroom activity that focuses on training to develop such an ability, prior to commencement of project work, would be relevant and therefore apt and purposeful. Items A, B and C are graded progressively, involving increasing depth of linguistic competence.

5.2.3 Materials for MLT (Appendices 31 A to E): It must be noted that the materials prepared for Pharmacy and Electronics students (reviewed in 5:2:1 and 5:2:2) were noticeably different in presentation from those that had been prepared for MLT students. Whereas the former comprised a series of tasks, the latter were accompanied by brief explanatory notes, giving them the conventional lineament of worksheets. All the units under review here were prepared by a Polytechnic teacher who used the materials for classroom activity, encouraging students to work individually. Answers were provided by the teacher
towards the end of the classroom session, with students marking their own answers.

Unit 1 (Appendix 31A) is a reading comprehension passage, concentrating on vocabulary and note-writing. The unit was administered to Semester I students who are required to build the ability to read, comprehend technical discourse, and express it briefly and precisely in answers to periodic tests, during the curriculum. The tasks, based on the passage which is an extract from a scientific text, concentrate on text completion and on gaining familiarity with vocabulary. They could also have included study of word particles (affixes, roots) which would have enhanced the interfacing between the immediate linguistic need and the instructional focus. The learning experience derived from the unit is likely to appeal to the college entrants who would relate with the relevance of the text as well as the task, seeing in the unit the departure from the typical 'English' exercise. Capturing students' interest and cooperation, can be vital to the success of a pedagogic procedure. This unit is likely to fulfil such an expectation.

Unit 2 (Appendix 31B) for Semester II students also uses scientific text. An explanatory note attempts to describe the use of systematic classification through the use of a tree diagram. The passage could be exploited in other ways, i.e. for teaching grammatical features, vocabulary paradigms specific vocabulary, paragraph construction
particularly for students with special remedial needs. Corollary exercises presenting tree diagrams for expansion into passages as well as spoken discourse could also be used for communicative teaching. Such materials may be simple to prepare, with the general supervision of mainstream subject teachers to ensure factual presentation.

Units 3 and 4 Appendices 31 C & D) for Semester III are two sets of tasks based on a passage from a mainstream subject text: they aim to teach how to frame instructional discourse. The figures are authentic, taken from a manual for Clinical Pathology. Students are frequently required in the academic scheme, to show evidence of detailed knowledge of technical procedures, by describing them in writing as well as orally during 'vivas' that are part of their evaluation scheme. Instruction that is designed to inculcate grammatical, lexical and discoursal features would prove of immediate benefit to the students. In this case as well, the figures could be anchors for practising effective spoken communication. Although such spoken communication may not be required in professional life, the transparency of immediate relevance would be motivating for students and the gain in terms of the ability to explicate a procedure could be worthwhile. Parts of this unit, could have been included in the set of materials for Semester II - i.e. the elementary grammar (infinitives and gerunds) and word use (for, in order to), while item C would be suitable for Semester III students.
Unit 5 (Appendix 31 E) for Semester III students includes neither explanatory notes, nor instructions. It offers an outline of a lecture which can be fruitfully utilised if the language teacher and the subject teachers work in tandem to offer students a learning experience embedded in a discipline-specific topic. This outline could be used not only to reinforce the understanding of a mainstream subject topic but also to provide an authentic 'professional' experience for developing listening comprehension which requires at this stage, linguistic competence as well as basic knowledge of the specialist field. The importance of 'listening' has been stressed by MLT alumnae who rated the skill as crucial for developing healthy rapport with patients, as well as by pathologists, for efficiency in the performance of clinical duties. The administration of the unit would demand careful handling in view of the specialised subject matter, but calculated discussion and explication of cohesive features, of the consistency of grammatical features and of norms of classification, would constitute a profitable pedagogical exercise.

This research effort intends to reorganise the teaching objectives and develop suitable course materials as appropriate for specific student needs; it was therefore apposite in this case to scrutinise materials and comment upon their use, to show the need for periodic summative evaluation of course and materials.
5.3.0: The instructional materials prepared by Polytechnic teachers were reviewed in the earlier section; their relevance and efficacy and shortcomings were discussed. In addition to such materials, and in larger measure, Polytechnic teachers have been using extracts from foreign ESP publications, whose reading comprehension passages, vocabulary and grammar exercises have continually provided standard teaching materials of the EST register. Although one may accept the contention that on a macro-level these materials would have an overall positive affect, it must also be acknowledged that the lack of specificity diminishes pertinence and therefore, the textual appeal and the involvement and motivation of the student. This hypothesis was borne out by the questionnaire responses (discussed in Chapter IV), many of which commented on the material used in the language classes as being unrelated to the mainstream subjects. This opinion was expressed about the language classes conducted in the years 1989 to 1991, i.e. about those whose teachers had not prepared and administered suitable keenly specific materials (Chapter IV Section 2).

It would be proper to mention here, the foreign publications that have been used over the years by Polytechnic teachers as resource books.

5.3.1: Foreign Publications: The way in which the syllabuses developed for the three departments under study, was chronicled in 3.3.1, beginning with the early assistance
obtained from the British Council Education Officer, Dr. Velayudhan. The inputs from Dr. Velayudhan had included suggestions appertaining useful ESP texts. These were Herbert's 'The Structure of Technical English', Close's 'The English we use for Science', Ewer & Latorre's 'A Course in basic scientific English' and Thornley's 'Scientific English Practice'.

The SNDT Women's University Library gave access to other contemporary publications such as Swales' Writing Scientific English, Brasnett's English for Engineers, and Methold's 'Practice in Medical English'- among other books on ELT and TESL. Additionally, the British Council Library and other sources gave access to the 'English in Focus' series and the 'Nucleus' series. Indisputably, price inflationary conditions on account of ever-increasing values of foreign exchange have combined to preclude the use of foreign publications as regular textbooks for our students. Extracts have been used freely at the teacher's discretion. As discussed in Chapter II, progressive ELT theories have received due cognisance over the years.

Present thinking delineates the rationale for a pragmatic pedagogic approach which would subscribe to a holistic perspective rather than the restricted concentration on writing and reading. Data analysis has corroborated this postulation (Chapter IV Section 2), underscoring the inadequacy of adhering to the reading-and-writing skills-
based focuses that are exemplified in the texts mentioned above. The templates offered by more recent publications such as Glendenning's (1995), are eminently worthy of scrutiny, but the Polytechnic teacher ought to glean the suitable portions, judiciously drawing full benefit of the research-based texts, adapting them as needed by their specific milieu.

Chapter V gave a description of the instructional materials that have been used at the Polytechnic, reviewing ESP materials prepared and published in India as text books, and instructional materials designed by Polytechnic teachers. Some foreign publications were mentioned to cite examples of the materials that had contributed a constructive dimension to teaching at the Polytechnic. This discussion aimed at illustrating the limitations of available materials, from the perspective of usability, applicability and comprehensiveness. It seems clear that domestic and foreign ESP materials could certainly be utilised, with appropriate modifications, but additional effort would be necessary to construct materials for use at the Polytechnic. A pragmatic consideration of the realities of student profile, financial constraints and resource availability, as well as the insights gained through data analysis and study of contemporary pedagogic principles, suggest that suitable ESP courses should be reconstituted for each department at the Polytechnic.
The next chapter will state the appropriate approach, comment upon additions to and deletions from existing syllabuses and chart the redesigned syllabus along with sample teaching materials.