As Thailand's exports to other Asian countries and to the West increase, the status of English as the language for trade and communication has gained more importance. Initial investigation of postgraduate (science and engineering) students' needs at Chulalongkorn University indicates that the skills the students want to improve most are listening, speaking, and writing. These emerging needs are difficult to fulfill due to the fact that the medium of instruction for all subjects (excluding 3 hours of English a week) at all levels is in Thai. In teaching an English course for science graduates at Chulalongkorn, a teacher attempted to close the gap between students' communicative needs and their linguistic competence. This paper addresses three factors that must be considered in the process of translating students' needs into course design and implementation: linguistic aspects, pedagogical decisions, and administrative concerns. (Contains 5 references.) (JP)
As Thailand's exports to other Asian countries and to the West are booming, the status of English as the language for trade and communication has gained more importance. The English role has changed from being solely a subject in classroom and a tool to acquire technical skills to accommodating a secondary function, an occupational purpose, and a means for success in the real world environment.

Initial investigation of postgraduate (science and engineering) students' needs at Chulalongkorn University indicates that the skills the students want to improve most are listening, speaking and writing. Reading is still considered important but long years of training at secondary and tertiary levels, together with the schematic knowledge of the subject matter, enable the students to tackle rather successfully the conceptual and communicative intents of the texts. Writing, on the other hand, is the skill the students state that they need most for the advancement of their career, for presenting and recording the product of their work, but feel unable to cope. They also express dissatisfaction in their ability to orally communicate and negotiate in English.

These emerging needs of interactive and productive skills are difficult to be fulfilled due to the fact that the medium of instruction of all subjects (excluding three hours of English a week) at all levels is in Thai, which is not conducive to the development of foreign language competence and capacity. This paper explores linguistic, pedagogic and administrative problems in translating communicative needs into course design and implementation and offers tentative practical solutions, based on the initial result of research work at Chulalongkorn University.
At Chulalongkorn University, English is compulsory at the undergraduate level and optional at the postgraduate level. It is used as a determining component in both entrance examinations, but less weight and significance is given at the latter level. The reason is that the majority of undergraduate students of Chula who have a good command of English will choose to further their studies abroad, or at the prestigious graduate schools in Thailand which use English as the medium of instruction, such as the Asian Institute of Technology, Sasin Graduate School of Business Administration or the College of Petroleum and Petro-Chemistry. The students feel that a first degree from Chula will provide a strong academic foundation and an expansive social circle, but a second degree from abroad will broaden their horizons and give them a better chance to compete internationally. Students from Chula and students from other universities who choose to do their master’s degree at Chula, are successful candidates in their specific fields of study but they may or may not be competent in English.

At the beginning of each semester, the Language Institute offers 5 three-credit courses to these incoming post-graduate students:

1. 092-510 Skills in English for Graduates
2. 092-520 Consolidating Skills for Science Graduates
3. 092-521 Consolidating Skills for Non-Science Graduates
4. 092-530 Technical English for Medical Science Graduates
5. 092-531 Technical English for Communication Arts Graduates

I am responsible for teaching Course No. 2. During the past few years, only 15-20% (app. 60-70 students) of science and engineering students (app. 450 students in all) have taken this subject. In order to improve the quality (and the popularity) of the course, to find out the real needs of students, and to help revise language policy at the post-graduate level. I was given a grant last semester to conduct research entitled, "Needs Analysis, Syllabus Design and Evaluation of an English Course for Science and Technology at the Graduate Level"
INFORMATION GATHERING

The first thing I did, at the beginning of the course, was to ask students to introduce themselves and talk briefly about their jobs. If interested, their classmates could ask questions or request further information. I could thus evaluate and approximate their speaking ability. Since this was the first period of class, and also because the students came from various departments and did not know each other, they did not feel free to interrogate or communicate with each other and tried to finish their job description as quickly as possible.

The next step was to ask the students to fill in a short questionnaire (past experience suggests that students hate a long questionnaire). The first part dealt with personal background: name, age, education, employment etc; the second with language proficiency, the results of which were as follows:

1. The students rated their proficiency level in the three skills—L, S, W—as 'poor' and 'fair'; their own rating for reading skill was 'fair'.
2. The skills they wanted to improve most were S and W.
3. The skills they considered most important for graduate studies were R and for work were S. Writing received nearly equal weight from both categories.
4. The analysis of the open-ended questions in No.4 and 5 confirmed the students' assessment of their relatively low ability in writing skills and their need to urgently tackle this problem.

From the introductory section and the questionnaire, it can be established that there is considerable disparity between the students' communicative needs and their linguistic competence. The main problem is how to design a course which will help to improve the students' language proficiency to such an extent that they can function effectively in the real world, but with the limitation that there are only three hours per week in which to do this.
LANGUAGE PROFICIENCY (N = 65)

1. Rate your proficiency level: good, fair, poor (corresponding to your academic record of approximately 80%, 70% and 60%) in the following skills:

<table>
<thead>
<tr>
<th></th>
<th>POOR</th>
<th>FAIR</th>
<th>GOOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>33</td>
<td>30</td>
<td>2</td>
</tr>
<tr>
<td>S</td>
<td>42</td>
<td>23</td>
<td>-</td>
</tr>
<tr>
<td>R</td>
<td>20</td>
<td>39</td>
<td>6</td>
</tr>
<tr>
<td>W</td>
<td>38</td>
<td>27</td>
<td>-</td>
</tr>
</tbody>
</table>

2. Which skills do you want to improve most? (Some students chose more than one skill.)

<table>
<thead>
<tr>
<th></th>
<th>RANK</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>17</td>
</tr>
<tr>
<td>S</td>
<td>24</td>
</tr>
<tr>
<td>R</td>
<td>8</td>
</tr>
<tr>
<td>W</td>
<td>22</td>
</tr>
<tr>
<td>All</td>
<td>10</td>
</tr>
</tbody>
</table>

3. Which skills do you consider most important for your____? (Students chose more than one skill.)

<table>
<thead>
<tr>
<th></th>
<th>GRADUATES</th>
<th>WORK</th>
<th>STUDIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>9</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>S</td>
<td>5</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>R</td>
<td>52</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>W</td>
<td>28</td>
<td>22</td>
<td></td>
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</tbody>
</table>

4. State your reasons for taking this course......

5. Describe (in about 10 lines) your present work and/or your future career.

2a
FROM NEEDS TO GOALS

The translation of students' needs into course design and implementation must be considered in the light of several factors which affect effective teaching and learning. In this paper, three main factors will be focused upon: linguistic aspects, pedagogical decisions and administrative concerns.

I. LINGUISTIC ASPECTS

The majority of students' linguistic competence does not reach the level at which they can express their ideas coherently or communicate information successfully. Does this mean that students need more knowledge of linguistic rules? Does the teaching and learning of the grammar of English (at this level) help improve communication skills? From my experience, the answer is NO. University-level students have been taught linguistic rules for nearly twenty years (and some are heartily sick of learning these rules year after year). Yet they cannot transfer this knowledge to the actual business of communication. The majority of students have acquired the rules of grammar and could do well in a test which is designed to assess this knowledge objectively, such as TOEFL Part II (the test of STRUCTURE). What they lack is the ability to transfer these grammatical rules to the creation of coherent passages of discourse, and the opportunity to practise and produce language in meaningful context, which in this case is their specialized field of studies.

The course to be designed thus aims to promote the active use of language, to encourage the students to participate, and to give them confidence and a feel for communicative value of language. With guidance and illustrative models in the target language (communicative conventions; the organisation and discourse structure of scientific genre), together with the provision of the opportunity for extending their linguistic competence and intellectual ability, it is expected that the students will gradually improve their productive skills.
The shift of focus to communicative properties and productive activities is not intended to downgrade the teaching and learning of grammar. In a situation where English is a subject, and not a medium, the knowledge of linguistic rules is always significant. But we see that the acquisition of linguistic rules does not automatically result in the development of productive skills, and the repetition of remedial teaching of grammar at the post graduate level often causes frustration and rejection by the students. Grammar, though important, must therefore be given a subsidiary role and only the features which are important for the development of communicative acts or which are linked to the rhetorical patterns of scientific conventions will be focused on. For example, the use of defining relative clauses in a formal definition or passive voice in a process description should probably be included.

Since the focus is on communication, and not on linguistic forms, criteria for assessing the students' performance in some of the oral and written tasks must be based on communicative effectiveness rather than grammatical and structural accuracy. The guideline used is the same as that adopted in the work at Ngee Ann Polytechnic, which states that "...unless the grammatical deviations are of such a nature or on such a scale as to interfere with the main message of the communication, the criteria for judging spoken and written discourse must be the appropriacy and acceptability of language used rather than grammatical flawlessness or accuracy. The concept of 'tolerance level' is applicable to judging grammatical accuracy in communication." (Tan San Yee et al 1988:132).

The operational concept of 'tolerance level' is adopted in order to encourage the students' participation and the generation of discourse, and to remove the burden of a high proficiency level of linguistic competence and to allow the students to concentrate on conceptual and communicative aspects of language. Grammatical problems which may result from these productive and interactive activities and which may impair the transfer of information or distort the gist of discourse will be tackled as they arise. In the future attempts will also be made to identify the areas of grammatical structures which cause continuing 'trouble spots', and the students will be directed to repair these weaknesses in the 'Self-Access Learning Centre' (which has recently been opened at CULI). This arrangement is expected to solve, to a certain extent, the problem of limitation of alloted time for teaching and learning.
II. PEDAGOGICAL DECISIONS

From the analysis of the questionnaire, the students indicated that the skills they want to improve most were listening, speaking and writing. Reading was still considered to be important, but long years of training at secondary and tertiary levels, together with the schematic knowledge of the subject matter, enabled them to tackle rather successfully the conceptual and communicative intents of texts. Does this mean that reading should be left out? Is there any inter-relationship between receptive and productive activities or between reading and writing, listening and speaking? According to Professor Widdowson, all linguistic behaviour is related to the underlying activity of interpreting. Even though a particular exercise may focus on a particular skill or ability, its effectiveness will often require the learner to make reference to other aspects of his communicative competence. He explained that

The approach...should avoid treating the different skills and abilities that constitute competent in isolation from each other, as ends in themselves. What the learner needs to know how to do is to compose in the act of writing, comprehend in the act of reading, and to learn techniques of reading by writing and techniques of writing by reading. If the aim of language learning is to develop the underlying interpreting ability, then it would seem reasonable to adopt an integrated approach to achieve it.

(Widdowson 1978:144)

In designing the course for post-graduate students, I have adopted an integrated approach on the grounds that reading activities provide inputs for writing tasks, opportunities for exploring discourse structure of the target communication (thereby equipping the learners with the model for both constructing and assessing their own writing) and they also stimulate and extend the interpretative ability (which the learners bring to bear when they read) to the usable skill of writing. In this approach reading and writing, as well as listening and speaking, can thus be viewed as two sides of a coin, the activities of the one complementing the activities of the other in the interactive and negotiative process of communication.
With an awareness that the students need to improve their productive abilities, English is thus used as a medium of instruction to provide linguistic and conceptual inputs for developing the receptive skill and stimulating response in the target language. When the students occasionally face difficulty in understanding, the mother tongue can be exploited to summarize and clarify certain points. This advantage of the mother tongue cannot be overlooked at the initial stage. But when the students feel competent in understanding and negotiating their way in English, the mother tongue should be phased out to enable the students to really function, to operate in the target language.

To achieve this goal of being a competent user of the language, the student should be given every opportunity to practise the four skills in a real communicative context and in an integrated framework. Examples of the combinations of various skills include writing down brief notes while listening to a speech, giving verbal reports as well as making them in writing, and summarizing the gist of what is read. The four skills can even be combined in task-based activities which are built on appropriate topics and situations. The information gained from reading and listening can be used for discussion and report writing. This promotion of practice and use in an integrated framework serves, according to Professor Strevens, two particular ends, "they assist the learner to make the leap from receptive to productive learning, and they enable him to gradually improve the accuracy, fluency and quality of his command of English" (Strevens 1988: 11).

In summary, the students' needs must be considered in the light of the pedagogical context, which is based on a sound theoretical framework and brings about a design for a realistic, relevant and authentic course of instruction. The success and failure of an ESP programme, however, depends not only on these linguistic and pedagogic considerations, but also on other important contributory factors such as the policy and support from client institutions, facilities for assisting effective teaching and learning (e.g. self-access learning center, multimedia teaching aids) and, most of all, dedication and professionalism on the part of the teachers. These factors will be dealt with in the next section.
III. ADMINISTRATIVE CONCERNS

The status of ESP courses at Chulalongkorn University varies with the changing climate of the administration. Twenty years ago when I first ventured into the realm of ESP, the courses were run by the Technical English Section of the Faculty of Engineering. Technical English was given full support and priority. It was a compulsory subject and the engineering undergraduate students had to take at least 2 three-credit courses, and, possibly, another optional report writing course in their final year.

At present all service English courses are run by the Language Institute which was set up to pool resources from various faculties. In the process of centralization, the close contact and cooperation between the language teaching staff and the subject specialists disappeared. In consequence, the majority of subsequent ESP courses were designed without consultation or collaboration with the faculties concerned and without an analysis of the students' changing needs and goals. This resulted in the criticism that some ESP courses were unrealistic and unable to prepare the students to cope successful with their demanding academic and professional activities. During the succeeding years, the courses which were designed to serve both engineering and science undergraduate students came to be regarded as too general to serve their specific needs and, consequently, were no longer required by the faculties concerned whereas those for non-science students still enjoy the support of the faculties which request the service.

To restore the status of ESP, to take account of the clients' needs and aspirations and to regain the help and support from the faculties, I interviewed the coordinators of post-graduate courses and a number of staff members during the planning stage of an ESP programme for post-graduate science and engineering students. They stated that English was important both for graduate studies and work. But they would prefer English to be an optional subject due to the heavy work load of specialized subjects and long years of language training at a secondary and tertiary levels. If the students decided to take the course, it must be on its merits and their needs, and not only because it was a requirement of the faculties. Only the representative from the department of industrial engineering declared that the department would send all their students to attend this course (Presumably many of their students will work
for or come into contact with increasingly large numbers of international companies in Thailand). They expected that this three-credit course would bring the students' standard of English up to a level at which they could function satisfactorily in real world communication.

With the students' varying academic background, varying language proficiency level, the limitation of the allotted time and the high expectations of the course (some of which can be fulfilled and some are unattainable) I have endeavoured to devise a programme which, hopefully, will motivate and sustain the students' interest and guide them towards the pre-established goals.

The programme can be broadly described as 'integrated skills practice,' with multi-media inputs which complement rather than replicate the students' specialized subjects. One good source of reading materials of this type can be found in the New Scientist, which presents information in such a way that can be comprehended by non-specialists, reporting on the development of current and interesting topics which extend the frontier of the students' schematic knowledge. The materials can also be adapted for listening comprehension, further discussion, summarizing, and descriptive and argumentative writing. The course culminates in the students' presentation of their specialized subjects, an integrated skills practice. The students research and prepare the text in advance, read from notes, respond to their classmates' questions or requests for further information. The audience takes notes of the presentation and, subsequently, gives an assessment of the presenter's performance.

The emphasis on productive and interactive activities throughout the course means that the teacher must be well-prepared and able to tackle both linguistic and conceptual problems as they arise. And as Professor Strevens (1988:10) points out that "becoming an effective teacher of ESP requires more experience, additional training, extra effort, a fresh commitment, compared with being a teacher of General English", the training and education of ESP teachers, in linguistic, pedagogic and to a certain extent schematic knowledge of the specialized subject, must be supported by all concerned: the language institute, the faculties and the university at large. This is because ultimately it is the teacher who plays a crucial role in bringing out the desired outcome of the course.
CONCLUSION

This paper is a report of an ESP programme at Chulalongkorn University. It is an attempt of a non-native speaker (inspired by the view that there are rarely global solutions for local problems: in Swales (1985:188) in an L2 situation to understand her students' weaknesses and needs and to offer tentative solutions. The programme designed takes account of the 4 skills, students' linguistic competence and particular field of study, students' communicative competence and students' academic and occupational needs. It is based on theoretical insight and practical experience, which shape the construction of appropriate syllabus, the preparation of suitable materials and the selection of effective methodology. In the final analysis, it is the students, the clients, who will judge whether the programme satisfies their target needs, helping them to successfully carry out certain academic and occupational activities, to develop a capacity for conducting interactive and negotiative exchange of meanings or, in short, to become a competent user of language for real world communication.

REFERENCES


CONSOLIDATING SKILLS
FOR ENGINEERING AND SCIENCE GRADUATES
(G.E. 092-520)

COURSE DESCRIPTION

This course is designed for engineering and science students who have a fairly good command of English.

The aim is to develop in students an ability to handle the kind of written English that they will be concerned with as an integral part of their specialist subject.

The approach is based on the belief that learning a language is not merely a matter of learning sentence patterns and vocabulary but must also involve an understanding of how people use these linguistic forms to communicate. The course is thus structured in such a way that students will be aware of the way English is used in written communication, thereby helping them develop techniques of reading and providing them with a guide for their own writing. The skills of listening and speaking are, from the beginning, integrated into each lesson and subsequently form a major component of the course, preparing students for taking part in academic discussion and presentation.

An important feature of the course is that it is not designed to teach the subject-matter, but to develop in students an understanding of how their specialist subject is expressed through English. The students are encouraged to exploit their background knowledge to gain new information. The course thus combines the use of language and subject-matter in a meaningful context.

OBJECTIVES

It is hoped that by the end of the course students will be able to:
1. read, interpret and analyze their scientific and technical material efficiently;
2. write a summary of what is read;
3. express ideas and views through argumentative discourse;
4. understand statements and short lectures in English;
5. give a short presentation on scientific and technical matters in English.
COURSE ORGANIZATION

This course consists of 10 units as follows:

First Half
Unit I: Exploring Text Structures
Unit II: Establishing Textual Cohesion
Unit III: Vocabulary Building
Unit IV: Interpreting and Constructing Precise Statements
Unit V: Summary Writing

Second Half
Unit VI: Processing and Producing Complex Structures
Unit VII: Discovering Communicative Functions
Unit VIII: Developing Basic Types and Patterns of Arguments
Unit IX: Listening and Note-Taking
Unit X: Oral Presentation

EVALUATION CRITERIA

Mid-Term (Units I-V) 30%
Final (Units VI-X) 30%
Classwork 30%
Attendance 10%

60% and above will be considered satisfactory (S)