

## English Communication for Engineers in a Non-native Environment

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*Thailand does not have a strong English background although there has been considerable growth in recent years. The normal approach is grammar-based which fails to stimulate students. At Mahidol University's Engineering Faculty a practical, project-based approach is used that treats English as a method of communication and not as a series of exercises.*

*Projects run alongside practical classroom input and include a poster, a concentrated presentation of 20 slides, 20 seconds for each slide and a movie. These are designed to emphasize the importance of collection and control of information. The idea of data control is used in the latter half of the course when students prepare two papers. The content depends on the student group and if it is possible to use input from one of their technical courses.*

While many countries in the region historically have a background of English teaching, that is not the case in all. Both Britain and France controlled nations in what is now ASEAN (Association of South-east Asian Nations). While English was taught in certain of the countries, French teaching may have given students of those nations an edge when it came to English as a second language in the expansion that it saw from the 1990s onwards. That is a question that will not be addressed in this paper.

Thais are proud of the fact that they were not colonized, but an effect may have been a lowering of the importance of second languages until recent years. Maurice Broughton (1994) [1], reflected on the advances that he had noticed over a number of years of Thai experience -- living and working -- and felt that while English was a language of the elites earlier, this had changed by the mid-1990s. It is now common to meet ordinary Thais, for example bus staff and taxi drivers, who are able to help tourists with some basic phrases.

Despite several improvements, Thailand does not have the same strong English background as some of its neighbors. Although there has been an expansion in availability of International programs, most universities teach courses outside these programs in the native language with some courses in English. This reduces the exposure of students to English. Despite a recognized need for additional language skills in Engineering (recently expressed by ASEAN Secretary General, Dr. Surin Pitsuwan), course availability is varied and there is some resistance, both from students and faculty members.

The traditional approach here has been to rely on grammar-based teaching, which the students have suffered for many years. Much of the teaching tends to focus on the importance of reading as a source of information, which of course is important. However, this is to the detriment of other skills, particularly writing: the short term benefits override the long-term needs.

In some cases the teaching repeats the same grammar-based concepts with the result that the students learn little new and are not stimulated in the same way as they might be with their major subjects. This can affect their future employment either through grade-point changes or poor language abilities. In addition, while there is this concentration on grammar, little attention is paid to improving vocabulary..

Rather than compound the problems of grammar-based instruction, a different approach is taken with the English Communication courses offered at Mahidol University's Engineering Faculty. We have tried to emphasize that English is not a classroom subject and demonstrate this in two ways:

- Where numbers allow, the tables are moved into a boardroom format rather than the teacher-centric, face-the-front style. This brings out the professional flavour of the course which is preparing the students for the workplace.
- The course also uses a project-based approach that deals with English as a medium for communication of information, which is what (as qualified engineers) they will be expected to do. As part of the emphasis on projects, there are no formal exams.

Throughout the course there is a focus on collection and control of information, starting with some simple tasks, running through different media and ending in some practical writing projects. The projects run alongside practical classroom input and start with an easy task of creating a résumé (or CV).

As the students are approaching graduation it is useful to have this already on disk, but it provides a simple emphasis on the two points of collection and control. The résumé is a concise record of events and experience. For the best effect on a potential employer, the information should be presented in clearly, organised into prioritised sections and above all it should look good. The students use a ready-made matrix to collect information and relevant dates, then decide on how the résumé should be designed. A review of the students' work in class highlights problems and students are able to make improvements.

It is a short step for the students to turn the data into text outlines of their lives, using the sections in the resume as a basis for paragraphs. At this early stage, a teacher might not expect too much from the students, but at least it is a demonstration of how a piece of writing may be developed from more basic outline data.

This is followed by a poster project to add to the importance of collecting and controlling information. This is not in the form of the poster that may be seen at conferences, but is more in the style of an advertisement or movie poster. In this way these Engineering students are given a little artistic elbow-room.

Several subjects have been used -- Energy, Smoking, Work Safety -- and the interpretations of these deliberately short titles are the students' own. As the posters veer towards the artistic and there is a tendency to view them subjectively, in the interests of fairness they are judged by at least three teachers and the marks averaged.

The students are also given instruction in presentation skills. As they are used to the presentation style of teachers, additional input and variety comes from a number of videos of professionals from industry: for example the announcement of the iPhone by Steve Jobs in 2007 [2].

A selection of in-class presentations is made with a formal list of subjects for brief presentations, and using random subjects: the student is required to deliver a couple of minutes on a theme picked out of a hat: for example, sun, moon, stars, as well as more technical ideas. The purpose here is not to put the student on the spot (as may well happen in the work place), but to enable the teacher to provide feedback.

The culmination of this is the second project when the students are tested by way of a 20/20 format: 20 slides, 20 seconds each slide. As is demonstrated in the videos they are shown, the best presentations are a result of what they know rather than what they remember, coupled with good rehearsal.

Students are given fairly free rein over the subjects for the presentations, but they need the teacher's approval. This is to guard against duplication, subjects that may be too complex, and those which the student knows nothing about: in these cases, the problem is that the information would be downloaded from the internet and memorized.

The tight format of these presentations, particularly the time limits, makes the better students prepare carefully and, one hopes, provides clear lesson in collection, control and (particularly) prioritisation of data.

To finish the first half of the course, students create a 10-minute movie in pairs. With the limits of equipment, the picture quality is not expected to be high, although as all students have access to computers, it is possible to improve or dub a soundtrack. Subject matter is open although, again, the teacher should approve the subject to avoid duplication, to check that the idea is feasible and also to limit the possibilities of risk.

After each of the first three projects is marked, and to add to the professional theme, within reasonable limits, the teacher negotiates with the students as to the weighting of each project: 10, 20, 20; 5, 25, 25; or an acceptable

alternative. If the offer is taken up by the class (and not all do) then they are able to see how their own input can have an effect on an outcome.

In the second part of the 14-week semester the focus is on writing skills and makes full use of the information-handling features of the first half. Two papers, depending on the groups being taught, are produced: a proposal and a process paper. The writing develops through a series of drafts and, instead of formal teaching sessions, the course switches to a tutorial system so that the students, who usually work in small groups, can be better advised.

the project proposal depends on the groups. Final Year Electrical Engineering students need to complete a senior year project and have to write a project proposal for that. As the Department of Electrical Engineering has always required the proposal to be in English, this dovetails neatly with the English for Communication Course. Other groups write a project proposal that depends on technical subjects they are taking during the semester.

Students are shown how to prepare for the writing task and first must produce an outline. All parts of the task have rigid deadlines. After the outline is checked and advice given, students will begin to write the first draft of the proposal.

Four major obstacles appear when Thai students are asked to write.

- The first is translation. This is the most natural to them and this is how their earlier English courses have taught them to deal with English. It is also the kiss of death to English grammar.
- In addition, from before high school they have been shown how to collect information by xeroxing newspapers and books, and later by copy and paste from the Internet.
- Many students act as if text is concrete and may not want to change what has been written.
- Thai students feel that they have to produce perfect work immediately and do not have faith in the process of editing, while at the same time understanding that they do not have good English skills. There is a contradiction here that may be resolved in the students mind by resorting to copy and paste.

To try and limit the students, the first draft has several restrictions:

- Maximum sentence length of ten words
- No conjunctions

- No contractions
- Write with pen or pencil

This is clearly not an easy task, but limiting sentence length in this way forces the students to think about what they are writing while they are writing it, which reduces the reliance on translation. It also goes some way to ensuring that the text is cleansed of excessive words (verbosity) which is better for engineers: technical writing demands clarity.

A further benefit is that it is fairly easy to identify any information that has been copied from the internet or from textbooks. It is not easy to persuade some students that a native speaker will be able to identify the different styles that writers create and this goes some of the way to forcing the students to use their own ideas and only to use information from external sources that will support and not replace their ideas. In some cases, in the first and subsequent drafts, plagiarism may still occur, but with explanation and persuasion these examples may be excised or properly referenced by the time the paper is submitted. Or the students may be penalized.

Once the handwritten first draft is accepted, there are several days until the second version is due. In the time available, students must put the text onto a computer. When they attend for further consultations, they are asked to bring all drafts so that comparisons may be made as the paper develops.

While there is a minimum number of consultations, in reality these are not enough and the best students attend several times. In doing this, they are getting insights into the writing process and noticing when and how they are likely to make errors. Two groups of students attend the least: those who are over-confident, and those with low confidence. The former think they do not have to do much, while the latter know they are not good and are worried that the teacher will criticize their errors: there may be a certain link back here to high school instruction, as there is with the question of plagiarism.

As the whole process of working with a teacher directly is new to these students, something in the region of 4-6 weeks is allowed for the writing of the several drafts needed and for consultation. In the interim, classes are being run and, for example, the 20/20 presentations are run at the same time. Most meetings between teacher and groups of students occur at lunchtime, after classes, or out of hours: for a number of years, sometimes large groups have attended my house -- evenings and weekends -- and good advances may be made then: this is after all when students do most of their work.

The second paper is a paper in which the students carry out a task and create their own data. It takes one of two forms, depending on the size and

main study area of the students. If large groups of computer engineers are learning, they will carry out a survey of computer use in the Faculty of Engineering, from creating their own questions to administering the survey, class by class.

A small group of Computer Engineers and other groups of students, carry out a test of condoms. This is done for a number of reasons: engineers understand the need for materials testing; the materials in the project are comparatively cheap; and there is a secondary purpose in the project of education: many Thai undergraduates are surprisingly naive.

To write an introduction, students need to remind themselves (or learn) of the reasons that condoms are used: looking at research data gives them a clearer insight to the range of problems and makes it clear for the reasons that the product must be tested. It would be easy to adapt this to any other form of materials testing depending on the student, teacher or culture.

With the experience of the proposal behind them, they are able to create the main sections of the paper easier, and then follow the same procedures with the writing.

The end results, in both the process paper and the proposal before it, may not be perfection, but the students will have a better idea of how data and ideas must be managed in the writing process. With the earlier parts of the course, it is hoped that the semi-realistic projects and the writing may give them a better appreciation of English use as well as prepare them for the workplace.

## References

[1] Broughton, Maurice. "The Importance of the Affective Domain in ELT Projects", Chapter 2 in *Reflections in Language Learning: in honour of Antonietta Celani*. Ed. Leila Barbera, Antonietta Celani and Mike Scott. Multilingual Matters, U. of Michigan; 1994.

[2] Jobs, Steve. *MacWorld San Francisco 2007 Keynote Address*. Available, Apple Keynotes, Tech News, Video Podcasts, Podcasts, iTunes Store. 10 Jan 2007.