In many countries, suitable English for special purposes (ESP) textbooks and materials are difficult to find. ESP teachers and program coordinators often must develop their own materials, but preparing such materials requires training. One model that has served as a guide to numerous ESP materials projects is the Hutchinson and Waters' model. This model consists of the following components: input, content, language, and task. In describing their model, Hutchinson and Waters present ample explanations and examples for illustration. While the model explains what materials should or can contain and what sequence lessons and exercises can take, it does not thoroughly explain the process of conceptualizing, planning, and writing materials for a group of learners. This document presents a process-oriented model for materials development and preparation and is geared for use by untrained ESP teachers. The nine-step model describes the steps involved in planning, developing, and designing materials and points out the necessary background knowledge needed to assemble appropriate lessons for the target group of learners. The steps, in order of operation, include the following: reviewing the existing materials; identifying goals for the materials project; developing a plan for the design of the materials and the collaboration arrangement; gathering and collecting prose and non-prose texts; evaluating collected texts for potential tasks and exercises; drafting tasks, exercises, and units; revising the material; training teachers and staff; and piloting the materials. Contains one diagram and 14 references. (KFT)
Introduction:

In many countries, suitable ESP textbooks and materials are difficult to come by. As a result, ESP teachers and program coordinators often develop their own materials. Here lies the dilemma. Quite a number of ESP teachers are forced to either develop or modify existing materials to answer the needs of their learners and/or institutions. Furthermore, not all teachers can be materials writers. This is not to say that one cannot learn on the job. But developing effective materials for a specific group of learners who often have clear expectations from the course requires a certain degree of training in ESP materials preparation, and lacking this, at least some clear guidance on the process.

One model that has served as a guide to numerous ESP materials projects in the Philippines is the Hutchinson and Waters' model (1987, page 108-127). The model consists of the following components: INPUT, CONTENT, LANGUAGE, and TASK. "Input" is described as any text (written or oral) or piece of communication data that is used, among other things, as a stimulus for activities, as a topic for discussion, as a source for "new language items" and "correct models of language use". "Content focus", the second component, is drawn from the input. These are exercises meant to stimulate thinking and "meaningful communication in the classroom". "Language focus" on the other hand, is meant to enable learners to use language by analyzing and manipulating it. Finally, "task" is supposed to lead learners towards the use of the previously learnt content and language in a particular communicative task/activity. In describing their model, the authors present ample explanations and examples for illustration. Indeed, they

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have a fine example of the result of following this model in their textbook Interface (Longman, 1984).

As one can see, however, the Hutchinson and Waters model explains what materials should or can contain and what sequence lessons and exercises should take. The model answers a major concern of the ESP materials writer. But not other concerns. In particular, it does not thoroughly explain the process of conceptualizing, planning, and writing materials for a group of learners.

We believe, therefore, that for the first-time ESP materials writer, a process-oriented model for materials development/materials preparation is needed. This should describe the sequence of steps involved in planning, developing and designing materials, as well as point out the necessary knowledge/background (associated with English for Specific Purposes) needed to assemble appropriate lessons for the writer’s chosen group of learners.

The model developed out of experience revising the materials for an English for Engineering course offered at De La Salle University in Manila, Philippines, which has a well-established undergraduate English program following the ESP approach. The original materials were first developed in 1979; we began revising these in 1988 until publication in 1995. The 8 years it took to modify and in the process, develop, new materials, would probably have been cut shorter had we had a better idea of how to go about the process. In this paper, I describe the steps involved in developing an ESP textbook for tertiary level, engineering students at De La Salle University, Manila, Philippines. My co-presented, Cora Balarbar, illustrated part of this model by discussing the results of a survey she conducted to collect feedback from students and

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teachers about the ESP engineering textbook.

The Model

The model being presented here (Figure 1) is a cyclical rather than a linear one. Although an initial event begins the process, some of the succeeding steps are recursive and the 9th and last component is not being proposed as the final step. In fact, it sets in motion a series of events that initiate the process once more. Within this model, influencing, guiding, even inspiring it are two concepts: collaboration between subject specialists and the ESP teacher/materials writer (Selinker, 1988; Carreon, 1990; Balarbar, 1995), and genre analysis (Dudley-Evans, 1988; Swales, 1990). Both in themselves are activities. In this model, however, they do not happen as a specific step or event in the process. On the contrary, both are considered and undertaken frequently as part of each step in the process.

Step 1: Reviewing existing materials

The ESP teacher who plans to develop suitable materials for a specific group of students within the institution he/she is working in begins by surveying what he/she already has that may be helpful or relevant to the materials writing process. This involves first of all, a review of the curriculum and course description for the course goal and objectives and comparing these to the stated purpose/s and objectives of the current materials. Are they compatible?

Next, one should evaluate the current textbook or materials being used employing an ESP model for materials evaluation (e.g. Hutchinson and Waters 1987). Perhaps a revision of the current textbook or materials can be undertaken rather than a completely new textbook/materials. Part of the evaluation of existing materials involves obtaining feedback from users (teachers and

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students) regarding usefulness, relevance, level of difficulty, versatility of texts, variety of activities and tasks. As these factors change as a result of changes in student needs and wants, as well as teacher qualifications, this evaluation in itself is important in program maintenance.

Another part of evaluation is to review materials keeping in mind the articulated statements of the language program's view of English for Specific Purposes, of language learning and of language teaching. Suffice it to say, they have to be compatible. This step in the process can be undertaken informally, with the materials writer reviewing materials alone, with or without the knowledge of the department head or coordinator. It can be part of or based on a paper prepared for a graduate class that a junior faculty member is taking.

Find out what profile of the students are available (descriptions of the language, academic, literacy, social, and personal needs and goals). Perhaps the department or program has conducted a needs analysis of the students. If this is fairly recent, the results can serve the purposes of the current project. Perhaps the office of student affairs has conducted needs surveys of particular groups of students. Some of the results can be directly useful. If not, at least they may provide some insights to help in designing a needs analysis for the project. If no profile or data about students are available, then the materials writer has to undertake a needs analysis which involves not only students and teachers (both ESP and subject specialist), but also school administrators (including heads of programs from which students are drawn). In addition, if there is strong support for vocational/professional English, then the materials writer needs to gather feedback on students' language-related needs as well. Needs analysis can be a long and difficult process for one person to handle without support from the program/department. It is wise, therefore, to

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investigate at the outset the amount of administrative and manpower help one can expect.

Finally, in ESP programs, a number of texts used in class as samples and reading/writing input are "authentic", i.e., texts not specially written for language teaching purposes, but come from journals, magazines, textbooks, the internet, and other sources. When these are used in the ESP classroom, they serve as links to the academic disciplines language students are currently in or will be part of in the near future or professional fields students will eventually join. How are these "authentic" sources used and presented in the current materials or textbook? Are they being used mainly for grammar practice, for register analysis, for discourse analysis? Are explanations and exercises provided that can help students build an understanding of purposes, disciplinary contexts, as well as discourse forms and grammar issues?

**Step 2: Identify goals for the materials project**

Based on the review of existing materials, the materials writer should sit down and describe the institutional, disciplinary, course, teacher, and student needs relevant to the ESP course. A well-articulated description is particularly helpful as it will serve as one of the bases for important choices that will have to be made later in the process, such as those related to types of texts or genre, language/grammar/syntactic considerations, difficulty and length of reading input, task/project types. For example, if in reviewing earlier materials for engineering students, one learns that some input texts, despite the fact that they are based on a physics or chemistry topic are boring to students, then one has to consider substituting other texts. These may address other topics in engineering or present the same topic in a more interesting manner.

Supporting data will be necessary to back up results and claims, particularly when the

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description/report is being submitted or presented to administrators or other teachers in the program.

In addition, reviewing current materials and gathering information on learner needs provide opportunity for the materials developer to clarify to himself/herself the principles of language learning and teaching which should underlie the new materials. For example, whether they should be process oriented, communicative/topical, task-oriented, whether grammar exercises are motivated by genre characteristics or based on second language acquisition studies, etc.

At this point, the materials writer also has to decide whether the old materials will be modified, updated, or completely changed. If modified or updated, then sections or parts to be changed should be identified. Also to be decided is how “specific” the new materials will be, i.e., focussed on common core academic genres like problem-solution, data commentary, or discipline/professional genres like feasibility studies, technical proposals, memoranda.

Finally, this is an opportune time to consult administrators, one’s department head or coordinator, on possible funding for the endeavor. Part of the exercise to secure this funding involves a proposal to be written, in which one will need to devise a time table that will include a projected publication date and trial phase.

Step 3: Develop a plan for the design of the materials and the collaboration arrangement

Once the objectives of the project are set and the needs of students and teachers understood, it is time to divide up the work. If the materials project will involve more than one

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ESP author, then deciding on who takes what part/chapter becomes important at this point. Individual interest with certain topics, as well as level of expertise and experience in materials writing are two considerations in deciding assignments. A subject specialist/s will also need to be considered. Will the project need just one subject specialist or will a number of them be consulted? What will be the amount or level of involvement? What will be the role of the subject specialist? For example, would that specialist be providing sample texts, reviewing/suggesting exercises and tasks, writing tasks and exercises himself/herself?

Formulate a timetable for the project, including the pilot and evaluation stages. Review the steps outlined in this paper and allot time/days/months for each step or stage. Most first time materials developers may not have any idea how much time to allot for each step. However, one should attempt an intelligent guess, adjusting the schedule as one proceeds. In fact, in materials writing, one has to exercise a certain degree of flexibility with schedules and deadlines. In addition, the timetable should be shared with all concerned, including administrators who may need to be informed of this added responsibility for one of its lecturers.

**Step 4: Gather and collect prose and non-prose texts**

Developing a bank of raw materials is an essential part, not just of the materials design process, but of language teaching in general. One finds materials in newspapers, magazines, advertisements, and books. In ESP, however, one should also look for materials in uncommon places. Students’ textbooks is one such place, also the academic journals they are assigned to read for assignments. There are also brochures from companies, reports, business letters and

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instruction leaflets (that come with any device or gadget one buys). Once an ESP teacher has a particular group of students in mind, he/she can investigate the kinds of discourses commonly used in the field and try to get sample texts. If students attend numerous lecture courses, for example, then an audio or video recording of a lecture might prove useful in the future, so are the classroom notes that one or two students make based on the lecture. Samples of lab reports, annotated bibliographies, "book reviews", etc. assigned by content teachers would be part of this bank of materials. As an ESP teacher, I've become aware of the importance of always being ready to consider various texts that come my way. Chances are many of these authentic texts found will not end up being used in the current project. They may still find their way into future revisions or as supplementary classroom materials. Still, the principle of 'the more the merrier' applies here.

As a final word on the matter of collecting materials, it is always helpful to note down bibliographic details of the 'found' text as soon as it is discovered to eliminate the chance in the future of not knowing from where one had taken an interesting bar graph or definition paragraph.

Step 5: Evaluate collected texts' potential for tasks and exercises

This step relies on the results of the review of existing materials (Step 1) and the goals that have been identified (Step 2) to determine which of the raw materials or found texts are potentially useful as exercises and tasks. This step encourages the materials writer to draw up a list of the most important criteria for deciding the inclusion or non-inclusion of certain materials. For example, in revising the English for Engineering textbook for De La Salle University

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engineering students, we drew up seven characteristics of the materials and activities for the
textbook (Carreon and Balarbar 1995, Preface) based on feedback from students and teachers
who have used the earlier edition. These seven characteristics are as follows:

1. Relevant content and genre to Filipino engineering students
2. Understandable content to both the first year engineering student and the ESP teacher
3. Potential for creative use of the language
4. Potential interest to different specializations within the field of engineering
5. Variety
6. Content stirs up interest in technical and scientific topics/issues in the Philippines
7. Clearly highlights language/rhetorical features characteristic of engineering discourse.

Step 6: Draft tasks, exercises, and units

This is the stage when a model such as the Hutchinson and Waters model (1987) becomes
the most useful. In this stage, one decides the scope and sequence of the materials. Some of
these issues are: the content/subject matter and elements (input material, exercise types) of each
unit, the sequence of these elements within each unit, the sequence of content and language
features across the various materials, and the difficulty level of texts.

With the course syllabus as guide, one can proceed to (a) identify the final output or genre
required to be covered (e.g. a technical proposal or proposal presentation), and on this basis (b)
search the materials bank (discussed in Step 3) for a piece of text that can be exploited as an
input/starting point or as a final task. One can also begin with the ‘found text’, analyzing it for its
possibilities as input or task. In other words, one can begin writing materials roughly following

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the course syllabus or begin more creatively, allowing the raw materials found to lead one towards certain kinds of exercises and tasks. In reality, the writing process is more likely a combination of both approaches.

Once the input or final project has been chosen, one begins deciding on and developing the exercises and activities for language structure, vocabulary, language functions, etc.

If the input task was the starting point for a unit, one should plan for a final task which requires students to compose a text or put together a multimedia project similar to the input in terms of discourse features, but which should be more demanding in both content and language.

If, on the other hand, the final task was the starting point in writing up the unit, one then develops a starting task, like a non-prose text or a brief report/memo, compatible to the final one in content or language/discourse features or both.

These steps are repeated until one has covered the various goals and objectives found in the syllabus or the goals developed especially for the ESP materials/textbook.

Step 7: Revise the material

Once a draft has been put together, plans for reviewing it should be formulated. The review process can involve colleagues or consultants who are aware of the project and its goals. Some review of Steps 2-6 with this group is helpful. This stage is best done as a collaborative effort to improve the materials, and not as a critical review of the material writer’s product.

Trying out the materials or sections of it in an actual class is extremely helpful in judging its effectiveness. The materials writer, if teaching a class for whom the materials are intended, can pilot parts of the materials in his/her own class. At the same time, one or two other similar

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sections taught by other teachers can be used as well. One should consider, however, in choosing these other sections, the teachers' understanding of the materials project and their experience in teaching ESP. This pilot testing can be done for at least a term to collect feedback, formally or informally, from students and teachers. Revision is then made accordingly.

**Step 8: Train teachers and staff**

In addition to the materials, it is also the materials writer's responsibility to provide future teachers with accompanying guidelines or notes to help orient them to the objectives, underlying principles/approaches, structure, and effective use of the material. Once an experimental version is ready, current and future teachers of the course should be introduced to the material by means of a meeting, training session or workshop conducted by the author. It would also be helpful to invite subject specialists who may have collaborated in the writing of the materials to answer questions from the teachers or to extent whatever support they can to the teachers. Having the subject specialist consultants at this session can set the tone for collaborative teaching or some form of collaboration that usually enriches an ESP course.

**Step 9: Pilot the materials**

For some, the materials writing process ends with the duplication or publication of the newly-written materials and their general use in the intended course/s. However, usually there is some further refining and polishing to be done, so that another stage, an experimental stage, consisting of a full year or more of use in classes, is necessary. Consequently, an evaluation process is also put into place, wherein mechanisms (via a interview, questionnaire, and/or class observation) are set up to gather feedback from a larger group of students and teachers.

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Information from this process is reviewed vis-a-vis the materials, and depending on the results, the materials writing process begins once more.

Results of a survey on the ESP Engineering textbook

The present ESP Engineering textbook used by undergraduate engineering students at De La Salle University, Manila is a second edition of the 1983 text written by a different set of authors (Luzares, Flores, and Puertoliano). It maintains the same goals as the first edition, which is “to provide the engineering student with materials that would develop his ability to write intelligently and critically the various forms of writing which engineering students and engineers are often asked to do” (Preface). However, it is different from the first edition in that “it emphasizes the active use of language and the acquisition of relevant knowledge of the discourse of science and technology as a means to achieve both fluency and accuracy,” and it includes mostly updated exercises and activities.

This second edition (1995) was conceived as early as 1987, after feedback on the first edition showed teacher and student dissatisfaction with the text. Revisions and experimental editions followed until its publication. Following our own materials writing process model, an evaluation mechanism was put into place in the form of survey questionnaires. Results of this survey should provide the authors help in developing supplementary materials and ideas for future revisions.

The survey was conducted during the second term of school year 1996-97. A random sampling of sophomore engineering students (# = 72) from two sections was chosen. These

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students were taking English for Specific Purposes: Engineering, a writing course which focuses primarily on the building and fine-tuning of academic writing skills required in engineering and technical courses.

Findings from student survey

A majority of the students (88%) had used the text. Nine out of the 72 students said they had not used it. However, 50% of the sample said their teacher used it only occasionally. A very small number (4/72) reported that it was used very often.

In the textbook, each unit concludes with a project or task for students. We wanted to know whether teachers assigned these tasks to their students. A majority of the students (90%) reported that the teachers had asked them to perform the tasks at the end of the units. Only 6 out of 72 said they were not asked to do them. Most of the tasks (70%) were done in class with teacher supervision while only 30% were assigned as homework. When students were asked about the level of difficulty of the tasks, a majority (72%) said they found them difficult while the rest found them relatively easy. Only three out of 72 noted that the tasks were too difficult.

Among the difficult tasks enumerated were: sequencing, rewriting exercises, writing technical reports and project proposals. Among the tasks mentioned as easy were: information transfer (from prose to non-prose) and matching type exercises. However, writing technical descriptions was mentioned as both a difficult and an easy task. This may be explained as resulting from two types of descriptions taken up: static and process. Of the two, process description involves sequencing events or steps, which was reported as a difficult task.

When asked whether the tasks were interesting or challenging, 65% of the students said

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they were interesting while 35% said they were not. 70% said that they were challenging while 30% said they were not.

Regarding the relevance and usefulness of the textbook, 50% of the respondents said the text helped them in their engineering subjects while 46% said it did not. When queried on how it helped, the students said the text established a pattern for writing technical reports, descriptions, and project proposals. Some of them pointed out some skills like organization, vocabulary, correctness of language that were developed through the text. One comment said that the text helped interpret ideas in laymen's terms."

Among the suggestions given by the students for improving the text were:

1. A more specialized text for specific areas of engineering, such as civil, mechanical, manufacturing, electronic, chemical, industrial, production management.
2. Updating of the articles
3. More examples of project proposals
4. More graphics
5. Further elaboration on some topics (e.g. parts of the project proposal)
6. Simplification of certain texts to make them more interesting and understandable to the students.

Finding from teacher survey

Eight teachers took part in the survey. All but one taught part-time. Two of the teachers have doctoral degrees, one in higher education, and the other in language and literature. They have had extensive experience in teaching and administration in schools other than De La Salle.

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However, they were relatively inexperienced in teaching English for Specific Purposes, especially to engineers, having taught at De La Salle for only one or two terms. Four of the other teachers have master’s degrees—two in education, another in language and literature (major in ESP), and the last one in English with a bachelor’s degree in English, minor in Physics. All four are experienced teachers, each having taught for more than five years. However, two are relatively new to ESP engineering, while the other two teachers have taught it intermittently for 5-10 years. The other two teachers have bachelor’s degrees in English and are new to the course, having taught it for only one term.

When queried on whether they used the text in their classes, all 8 teachers said they did. Only one reported using it every class session. When asked whether the text provides enough materials for classroom use, the teachers were divided in their responses. Half said it did; the other half said it did not. Most of the materials were found to be relatively easy, in contrast to the students who found the tasks rather difficulty. The teachers also noted that the tasks prepared their students for the written requirements in their content courses “to a certain extent.” They pointed out the units that were most helpful, particularly the final unit (The Project Proposal), Unit 4 (Explaining Concepts and Phenomena), Unit 7 (Research Skills in Engineering), and Unit 8 (Writing a Technical Report).

Suggestions for improvement were solicited from the teachers. Among their suggestions were: update the reading passages to make them more interesting and relevant, improve illustrations to make them clearer, and include more models for the writing outputs. It is quite clear that the suggestions of both students and teachers match. In addition, both groups felt that

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the text was a valuable tool for preparing them to do the writing tasks in their content courses.

Although the surveys are far from extensive, the feedback is valuable in planning the future revision of the textbook.
References


A PARADIGM FOR EST MATERIALS PREPARATION

- REVIEW EXISTING MATERIALS
- TRAIN TEACHERS AND STAFF
- REVISE THE MATERIAL
- DRAFT TASKS, EXERCISES, UNITS
- IDENTIFY GOALS FOR THE MATERIALS PROJECT
- DEVELOP YOUR PLAN
- GATHER/COLLECT PROSE AND NON-PROSE TEXTS
- EVALUATE POTENTIAL FOR TASKS AND EXERCISES
- GENRE STUDY

--based on the paper presented by Edwina Carreon and Corazon Balarbar at the Orlando TESOL (March 14, 1997)
A Paradigm for EFL Materials Preparation

Edwina Carreon and Corazon Balasar

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