This guide suggests techniques for teaching skills in summary writing to students of English as a foreign language (EFL) in scientific and technical fields. Activities include:

pre-summarization (identification of thesis sentences, conclusions and other essential components, multiple readings, notetaking and text-marking); summarization activities (summarization of text sections for class discussion, and full-text summarization); discussion of aspects such as summary length and level of abstraction; and evaluation and grading using peer comparison, class discussion, student-teacher conferences, and emphasis on positive aspects of student writing efforts. (MSE)
SUMMARY WRITING FOR EFL STUDENTS OF SCIENCE AND TECHNOLOGY

ARNA S. PERETZ
Ben Gurion University of the Negev, Beer Sheva

It is widely accepted that English has become a language of international communication. As such, it is used by native and non-native speakers to communicate with each other. The need to use English fairly often and with some degree of sophistication is most clearly felt by EFL professionals in the fields of Science and Technology. In fact, it can be claimed that advancement and job security are directly related to the ease with which the professional is able to communicate in English with a wide range of people.

EFL students of Science and Technology may deal not only with technical problems but also with organizational and managerial problems; the former are inevitably part of the latter. In order to propose a solution for a technical problem which in turn is part of a larger organizational problem, the EFL professional must communicate with different people from different backgrounds for different purposes. Moreover, the EFL professional's technical knowledge frequently needs to be transmitted so that such non-technical personnel as sales people and customers can understand it (Huckin and Olsen 1984).

One of the communication skills frequently needed by EFL professionals in the fields of Science and Technology is writing. Reporting of investigation results or suggested solutions to problems is often made in writing. EFL professionals need to be able...
to construct and compose arguments which are both logical and justifiable, to make suitable generalizations, and to identify, emphasize, and summarize main points in a concise and clear manner.

In an EFL setting it is possible to present the students with opportunities to practice such written communication skills, so that when they enter the real world they will possess the competencies that will enable them to be promoted to positions of managerial responsibility.

Procedures followed in class

Pre-summarization activities

The articles read by students of Science and Technology in their EFL classes can be categorized as being expository. Expository structure is here defined as "a composition whose purpose is to communicate knowledge about a given topic" (Amiren and Jones 1982:15). It is important to explain the structure of expository articles to the students in terms of overall organization. The teacher should point out that the thesis sentence is often found at the beginning, that there is normally a concluding statement at the end, and that many writers clearly define in the introductory paragraphs what will be discussed in the article. It is a good idea to have the students identify such parts of an article as the thesis sentence, the introduction, important details/procedures/steps/hypotheses, and the conclusion prior to any writing.

Reading articles for academic purposes is not the same as reading newspapers for pleasure. The former demands a greater degree of concentration, precision, and intensity than does the latter. The
teacher should emphasize that one reading is usually not enough
when the reader's purpose is to explain what the article is about,
elaborate on the meaning with accuracy, or formulate a generaliza-
tion. In other words, several readings are necessary when the
reader, and especially the FL reader, wants to completely understand
an article.

The teacher also needs to instruct the students in notetaking
and/or textmarking techniques. Ample opportunity for practicing
these techniques must be provided so that mental processing will be
increased, resulting in more complete and accurate work. Textmarking
techniques include underlining key passages, making marks in the
margin, and even writing notes in the margin. These techniques help
readers remember what they read, distinguish between important and
unimportant information, decide what should or should not be
included, and locate important ideas for later reference. The
teacher can use an overhead projector in order to illustrate text-
marking techniques and methods of notetaking to the entire class.

Summarization activities
Before dealing with an entire text, it is a good idea to first have
the students divide the text into sections. Each section can then
be summarized. This can be done individually, in pairs, or in small
groups during the lesson. Several samples of the students' text
division and section summaries are put on the chalkboard and a class
discussion ensues. It is also possible to have the students sum-
marize sections of an article orally before doing so in writing.
This activity involves what Taylor (1984:391) terms "analysis...that
activity that occurs after the subject has read the words and that takes place primarily during the second or third reading of text. It is during analysis that the reader thinks carefully about what he/she has read, so that important points are distinguished from details and examples.

Students need to be instructed about the importance of analyzing what they have read. They need to be made aware of the necessity of checking their ideas about the meaning of an article with the text itself. In other words, students must be sure that what they write in their summaries is an accurate representation of the author's meaning.

Students benefit greatly from these activities or exercises. They learn from practicing summarization skills, from discussing and analyzing their peers' work, from sharing problems, and from correcting and improving responses. They also become aware of their own abilities vis-à-vis summary writing and develop an understanding of how difficult a task it is.

Students frequently ask how long a summary should be and what should be included in it. These questions are related to the notions of conciseness and level of abstraction, which are themselves closely intertwined. Many teachers feel that a summary "should be about one-third the length of the original" (Taylor 1984:392). While this seems satisfactory, it does not answer the question of level of abstraction.

Level of abstraction refers to the amount and type of information a given audience requires. In the EFL class, the audience normally
consists of a teacher, who is usually the only reader; it may, however, also consist of peers if summaries are written in pairs or small groups and then shared with the other class members. This audience knows the writer(s) fairly well. The teacher reads carefully in order to ascertain what the writer is saying and has learned in order to grade the summary fairly. In short, the summary is read closely and thoroughly since the purpose of summary writing in a school setting is not to inform (as in the real world) but rather to demonstrate understanding and knowledge.

In the real world, the EFL professional faces a different audience. This audience includes people from various backgrounds who have different needs. Some may be experts who will study the summary or report in detail while others may skim and scan, looking only for the specific information with which they are concerned. Real world audiences are frequently less interested in supporting details than are academic audiences. The former often prefer generalizations as they are constantly under pressure and must read quickly under distracting conditions; they find that supporting details detract from their understanding of the subject (Huckin and Olsen 1984).

It is thus crucial that the teacher explain that level of abstraction depends primarily on the audience for whom the summary is being written. It is essential that students be given the opportunity to write different types of summaries so that they will be prepared for the real world.

Evaluation and grading

Students learn a great deal by comparing their work with their peers' work. Short summaries can be put on the chalkboard; longer
ones can be compared and alternatives suggested. Students can explain which type of audience might be most interested in a particular summary. All students benefit from such an evaluation process and the amount of learning that occurs is increased.

Class discussion of a positive nature, in an open and warm atmosphere, benefits everyone. Students should be encouraged to speak in terms of alternatives, to select the options they most like, and to suggest that other information is also important and should be included as well. The use of such positive expressions has its basis in humanistic educational theory. Each student feels that his/her ideas are important and that learning is a cooperative venture. This is in direct opposition to the usual evaluation process. In most class settings, evaluation of written work is a private matter, restricted to an oral and/or written exchange between teacher and student.

The teacher too needs to maintain an open mind and a positive attitude and to refrain from making judgments. Since judgments are not made, i.e. are left "open", students are encouraged to think and to make suggestions. Discussions and evaluation in such an atmosphere are relaxed and tension-free, and students are able to concentrate on the task at hand.

Grading is a requirement in most school settings. If the teacher follows the above procedures when grading, students will feel the summary they have written has some merit, at the very least. It is important to emphasize the positive aspects of the summary. This can be done in the margin or at the end of the summary. If the teacher's purpose is to encourage further writing it is important
that the student understand why the teacher has made specific suggestions concerning the need for additional or less information. Since this is usually not clear to the student, individual conferences should be scheduled by the teacher so that teacher and student comments, questions, and suggestions can be discussed after the summary has been graded.

Conclusion

The procedures described in this article can be used in any EFL or ESL class, assuming the students have attained the necessary level of competence in English. I have been following these procedures with EFL students of Science and Technology for the past three years. Student response has, on the whole, been positive, despite the fact that undergraduate students do not often have a clear idea of the job demands of their future profession. Student motivation has definitely been increased by the pre-summarization activities, class discussions, peer sharing of ideas and problems, and teacher-student conferences, as well as by the writing of different types of summaries for various real world audiences. It should be noted, however, that summary writing as described here is time-consuming; the planning, the organization, the grading, and the individual conferences require a teacher who is willing to devote a great deal of time to his/her students. It is, nonetheless, worth the effort if one's aim is to prepare EFL students of Science and Technology for professional life in the real world.

REFERENCES

