TESL

Teaching English as a Second Language

Vol. 6, No. 1 Laie, Hawaii Fall 1972

Enquiry Method and Problem Solving in the EFL Classroom

by Mary Lawrence

The foreign students we teach in our English classes are intelligent. In fact, I'm convinced that most of my students are a good deal smarter than I am. Moreover, they are adults (though I guess I'm not willing to concede their superior maturity). We would like to provide these mature intelligent adults with English instruction which is intellectually challenging but at the same time remains within the constraints of their limited capabilities in English. Enquiry method is one means to achieve these two seemingly disparate objectives.

Basically, enquiry method, as applied to second language teaching involves four cognitive processes, which are methods of thinking we all engage in every day. The student is guided to:

1. frame questions
2. impose order on data
3. make extrapolations
4. make syntheses.

Enquiry method is cognitive in that it relies on the student's natural intellectual capacities. Everybody can think, in the sense that we are all question-framers. We all impose order on the multiplicity of data with which life confronts us. We all make mental leaps beyond the data at hand to form inferences and extrapolations of varying degrees of sophistication. We all combine and recombine data from more than one source.

These cognitive processes seem natural and somehow spontaneous in our own language. They can also form the basis of an approach to second language teaching.

Enquiry method has proved particularly appropriate in teaching composition to intermediate and advanced level foreign students. The student is provided with data,

CONTENTS

some of which are presented through graphs, charts, maps, pictures and even films, as well as in written form. He is asked to formulate questions about the data. The questions he writes focus on specific logical relationships, such as causality, or contrast. His written question must correspond to the type of answer required. For every kind of question he is expected to write, he is given a variety of sentence patterns from which he can choose. This practice is intended to produce in the writer the habit of logical question-framing.

He is asked to make inferences about the data. He matches his inference on a scale from necessarily false to necessarily true; he distinguishes between fact and opinion.

Mary H. Lawrence author of "*Writing as a Thinking Process*" University of Michigan Press, received her BA and MA degrees from Michigan although she did a large part of her undergraduate education at Saint Andrew University in Scotland.
She is affiliated with the English Language Institute at the University of Michigan.

Acceptable inferences range from simplistic to extremely sophisticated and ingenious. Students come up with surprisingly clever valid extrapolations, many of which never occurred to the teacher. The only criterion of acceptability is logical possibility.

In addition to framing questions and extrapolations, the student manipulates data. Let me illustrate. The student is given a diagram of a house in which a murder has been committed. He is also given scrambled information about the murder. He is asked to assume the role of a detective. In order to solve the problem, he must formulate questions, put the scrambled data into chronological order, and make extrapolations from the available data.

Problem solving exercises can provide practice in manipulating data according to a sequence of logical relationships: chronological order, spatial order, classification, contrast, causality, and so on. For each relationship the student must learn the appropriate vocabulary of relationships, including sentence patterns.

But no one outside traditional rhetoric texts uses only one logical method or organizing data in isolation. To avoid this artificiality, once the student has practiced a logical method in isolation, he is asked to solve problems by combining more than one method of ordering the data. For example, he is given information about two candidates for a job, and asked to decide between the two applicants. To arrive at a conclusion he must combine classification, comparison, contrast, causality, hypothesis and prediction.

Just as we do not solve problems by imposing order on data by one method only, we do not normally confine our thinking to one set of data. For this reason, problem solving exercises are devised to provide for synthesis of data from more than one source. This makes possible a continuous review of previous vocabulary. It also allows the student to draw on his own personal store of data. Consider the following exercises:

The student is asked to decide whether or not the Homestead Act was a success. To formulate his answer he can draw on data from previous exercises about U.S. immigration patterns, U.S. population growth and urban development. By classifying these data, analysing them, and extrapolating from them he can reach his own personal evaluation of the Homestead Act.

In another exercise he is given data about a hypothetical country including statistics and a map. He is asked to describe what will happen when a new road is built between two specified locations in the country. He can utilize inferences and data from a variety of sources to devise his answer.

This approach is used to attack questions concerned with air pollution, education, man's concept of work, and so on. Obviously, the topics are not ends in themselves. They are used to actively involve the students in communication in English.

At first, it seemed likely that the enquiry method approach could be appropriate only with intermediate and advanced level students who have some facility with English grammar and vocabulary. Still, our beginning and intermediate level foreign students are intelligent adults too. They also need intellectually challenging classroom experiences. Can problem solving be adapted to their limited proficiency in English?

To date we have tried at the English Language Institute a small number of problem-solving exercises with low-level students to supplement grammar and pattern

(continued on page 12)

Enquiry Method

(continued from page 2)
practice instruction. The exercises have been designed to reinforce grammar already presented. Enquiry method has provided very effective in forcing the student to put grammatical patterns into active use both orally and in writing.

Exercises in which the student imposes order on data according to chronological order are useful for realistic practice of tenses and time expressions. A modified version of the murder mystery problem can be handled by low-level students, for example. Problem solving which involves role play is particularly appropriate for involving beginning and low-intermediate students in realistic communication. Question-framing, extrapolation, and manipulation and synthesis of data have proved not to be beyond the capabilities of such low-level students. Even our lowest level class could accomplish the following exercise. The students were shown a series of slides of our coordinator and his family. The slides, taken over a period of years, were deliberately shown out of chronological order, with the children at various ages, houses in more than one country, two pictures of the coordinator's wife (one a recent picture in which her hair is grey, another showing her with red hair). One scene had snow, another showed a child riding an elephant, yet another had a camel crossing sign. The pictures raised specific problems. For example, who were the two women? Just how many children does the coordinator have? The students formulated specific questions about each slide. The next day the coordinator visited the class. The slides were shown out of order again; this time the students "interviewed" the coordinator directly. From the information they elicited in response to their questions, the students wrote coherent, surprisingly well-organized reports.

Problem-solving activities of this kind are controlled but avoid the artificiality of the controlled exercise which is no more than grammar manipulation. Within a teacher-directed framework, problem-solving provides the students with the opportunity for individual personal expression. It allows the student to put his linguistic skills, however limited, into active use by capitalizing on his natural ability to think.