Has the Educational System Failed to Meet our Students Needs?

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How many times have you and your colleagues complained that your EFL students failed to understand the instructions on a test, were unable to apply present knowledge to a new situation, were careless in considering details and after making a superficial attempt to understand, would give up and guess at an answer? How many times have you heard teachers say that students were lacking in intelligence because they were unable to logically reason out a problem and reach a conclusion? They assumed that because some of the learners were able to correctly complete the assignment or successfully take the quiz or test, obviously the others should be able to do the same. Perhaps, instead of blaming the students, we should look at our educational system more closely to see why our students tend to have these problems.

One day the author ventured to ask students why they had difficulty in completing an exercise in their EFL textbook and the discussion that ensued (in Spanish) enlightened my view of students and their problems. Even though I had explained what they were to do, read the example in class and helped them to complete the first item, they had still not totally conceived what I expected of them. The student argued that their problem was neither syntactical nor grammatical, but instead, they simply did not "understand" what the textbook or I expected of them. After discussing that the skills the students needed to solve the exercises were not only language skills but also skills in logic and reasoning. The text and the teacher were presupposing that the students possessed reasoning skills that had not been taught to them, neither in English nor in Spanish.

According to Bloom (1956: 201-207) there is a hierarchy of cognitive learning abilities which should be reflected in teacher objectives and activities. This hierarchy, usually represented as rungs of a ladder, begins with the basic rung *memorization* which most children in the first year of elementary school can achieve, and gradually advances through *comprehension* and *application* before reaching the highest levels of *analysis*, *synthesis* and *evaluation* which are expected of most junior high school students in English-speaking countries.

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When preparing a lesson plan to achieve the institutional goal and general objectives for a course, a teacher must decided upon a series of shorter, attainable, instructional objectives stated in behavioral terms which will progressively enable the student to achieve the course objective. After stating the specific (instructional) objectives, the teacher should choose and sequence, according to Bloom's taxonomy, the appropriate learning experiences to accomplish these objectives and to provide the students with the opportunity to advance cognitively.

It is the author's belief that it is at this point that we have failed our students. A student must be repeatedly exposed to learning experiences which will gradually elevate them to the higher levels of Bloom's taxonomy because no single isolated learning experience can have a very profound influence upon the learner. In other words, adding to you lesson plan an occasional activity in which the student would need to operate on the higher levels will not produce the desired effect if the majority of the activities require the students to function on the lower ones. Changes in fundamental habits, in major operating concepts, and in attitudes and interests occur slowly. Educational experiences must be organized in a horizontal fashion across the curriculum in order to reinforce each other and to produce the desired cumulative effect. Naturally, all this requires time for the affective communication between all (not only EFL) teachers when preparing their objectives and learning experiences but, unfortunately, teachers in Mexico are not at this time being provided with the monetary incentive to motivate them to do this.

Through investigation into the problem, the author found that what the majority of the students had needed until then to function in the educational system was to perform only on the memorization and comprehension levels. For this reason, many were unable to jump to the higher rungs on Bloom's ladder of hierarchy which was what the teachers and the English textbooks were requiring of them. At this point the writer decided that the problem should be approached, not as a problem of intelligence, but rather as one with its roots in the culture of the educational system.

Culture as a word eludes a specific definition. Its meaning is extremely broad and includes all the concepts that make one society different from another. Culture influences our habits, beliefs, customs, values, and ideas. Culture is not overtly taught, but is assimilated by living within it (i.e., through the educational system). Most aspects of our culture are related to language since language is what transmits and molds the culture; language is both a component and a product of culture. Possibly for this reason, students, who were expected to correctly execute exercises in their English books that were produced in an

English culture and that required logic skills that had not been expected of them in their other classes in Spanish, were not able to perform as the teacher or the editors of the book expected.

According to English language culture, *poor thinkers* lack the habit of close analysis, whereas *good thinkers* have developed a logical pattern of working through a problem; they work persistently, drawing on old knowledge to solve new problems and relate, interpret and integrate what they already know in order to develop a logical method for problem solving. These are the skills that textbook writers and publishers except the student to bring to the classroom. Of course, some students acquire these skills from their home or school experiences, but many others do not. Does this mean that we should not expect them of our students or should we be aware of this possible problem area and work to develop the logic skills necessary to further their education?

Logic is defined by the *Heritage Dictionary* (1975) as "The study of the principles of reasoning, especially...in deductive reasoning; ...showing consistency of reasoning;... able to reason clearly." The verb *to reason* is similarly defined as "...to think logically; ...to determine or conclude by logical thinking." Obviously, one term implies the other and they will be used in this way throughout this paper.

Reading academic material in Spanish or English is not only an exercise in word recognition; it is actually thinking. Learning to comprehend what you read is learning to reason and to associate meanings. Since reading texts written in English is the ultimate goal for the *English for Science and Technology (EST)* students at my university, I decided to not only investigate the problem further, but also to attempt to collect materials to prepare them for the type of logical thinking that would aid their comprehension of all university textbooks and at the same time would help their acquisition of English. The remainder of this paper consists of explanations of important aspects to consider in teaching reasoning and examples of some exercises that can easily be included in any reading component for intermediate and advanced English students.

Levels of Comprehension

Academic texts are not as easily read as magazines and newspapers. The student is not only concerned with the facts that are written (**literal**), but also with what was intended (**interpretive**) and how it can be applied to other situations (**applied**). University professors assume proficiency on all three of the following levels for class discussions, assignments and exams.

1. ***Literal***--At this level our students have fewer problems because comprehension depends on their understanding of the syntactic and linguistic organization of the sentence. It is at this level that the students can find the correct answer explicitly written in the text, memorize and repeat it without ever understanding its importance. For example: *When did Columbus discover America?*

2. **Interpretive**--At this level students begin to have problems. In order to interpret meaning they need a number of skills. They must relate what is said in the passage to either other passages or to facts they already know. They must figure out what the author means, but does not directly state in the passage. For example: *How did the discovery of America change the course of history?*

3. **Applied**--Now, the students must apply the message that they interpreted to a new situation or experience. This level involves analysing, synthesizing and evaluating. For example: *If the discovery of America had been postponed for 200 years, would the results have been the same? What changes would have occurred in the history of the world and why?*

The following is an example of the type of exercise you can give to your students to reinforce the three levels. They must read the passage and the three statements that follow it carefully in order to decide which level (literal, interpretive or applied) each statement represents. If the teacher lacks Xerox or other types of copying facilities, a student can write the passage on the board. Similar passages can be found in almost any introductory history, biology, psychology, etc. textbooks.

No one knows what causes aging. However, scientists have pointed out possible contributing factors. Some emphasize genetic inheritance. Certain genes are thought to direct deterioration, just as others direct development. That is, at a certain point in life, these genes naturally cause deterioration, no matter how healthy the individual may be. This may be why each animal has a definite potential life span, characteristic of its species. Fruit flies may live for up to fifteen days, frogs as long as twenty years. But they very rarely live much longer. And, although medical science has increased the average life expectancy of individual humans, it has not changed the potential life span of the human species. The latter remains about 70 to 80 years, as it has been for centuries (though there are small, rather isolated groups among which a life span of 100 years or more seems to be common.) (Greulach 1977: 115)

1. Medical science cannot accomplish everything.
   LEVEL? _____
2. Fruit flies may live up to fifteen days.
   LEVEL? _____

3. All animal aging is probably caused by genetic inheritance.
LEVEL? _____

Extension Practice

As students increase their proficiency for correctly recognizing levels of comprehension the instructor should begin to have students in small groups or pairs write statements representing the various levels. These can be interchanged among groups and returned to the original authors to check for correctness.

Bloom and Broder (1950: 76) studied both academically successful and unsuccessful university students at the University of Chicago. According to these researchers, the poor thinkers lacked the habit of analyzing, whereas the good students had developed a logical and sequential pattern of working through difficult material. The academically poor thinkers collected facts, but were unable to see relationships while the better students were good problem solvers and were able to relate, interpret and integrate knowledge to draw logical conclusions.

Experiments have been conducted with good and deficient college readers, the result of which exemplify two features of the poorer reader.

> First, there is one-shot thinking rather than extended, sequential construction of understanding; and second there is a willingness to allow gaps of knowledge to exist, in effect, an attitude of indifference toward achieving an accurate and complete comprehension of situations and relations. (Whimbey 1975: 55)

Whimbey believes that the *poorer thinker* can learn many of the qualities of the *good thinker* through exposure to problem-solving activities which will increase their analytical reasoning. Some examples of problem-solving activities which will help our students to become more like the *good thinker* and at the same time motivate and advance their level of English are provided below.

Problem-Solving

Word problems can seem confusing when you first read them but if they are broken down into small, sequential steps the answers become quite clear. Also, you can advise students to draw a diagram of they have problems. You may recognize that many of these types of exercises are used on psychological exams to test intelligence and on standardized college entrance tests, such as the S.A.T. Begin your students' experience with problem solving with some of the simple ones.

1. According to the pattern, what numbers and letters should come next in the series and why?

G H 2 K L 3 P Q 4 _____ _____ _____ _____

2. According to the pattern, what numbers should come next in the series and why?

1 2 3 6 4 5 6 15 7 8 9 24 10 _____ _____ _____ _____

3. Which set of letters is different from the other three sets and why?

a. GHIF b. MNOK c. RSTO d. CDEB

4. Tim, Larry and Dave got different scores on a history test. Tim got higher than Larry, but less that Dave. Their last names, not in order, are Lewis, Davis, and Conners. Davis got the lowest score and Lewis got the highest. What are Tim and Larry's last names?

5. Mary is shorter than Carol but taller than Kathy. Sue is taller than Mary but shorter than Carol. Which girl is the tallest?

6. Which letter is as far away from M in the alphabet as R is from P?

7. In how many days of the week are there more than three letters and less than 5 letters preceding the part of the word that is the same in all seven?

8. Face the south and turn to your right. Make another right turn and then an about-face (180 degrees). In which direction are you now facing?

9. Ellen, Carolyn and Betsy each finished the road race at a different time. Their last names, not in order, are King, Wilson, and Harris. Wilson finished before Harris but after King. Betsy came in before Carolyn and Ellen was last. What are Betsy and Ellen's last names?

10. Fran, Sally and Marsha collected old books from different countries. Together they had a total of 18 books. Six of the books are from Spain with one more than that being the total from the Orient and one less being the total from Holland. Sally has two books from Spain and Fran has an equal number from the Orient. Marsha has twice as many books from the Orient as Fran has. Both Marsha and Fran have only one book each from Holland and Fran has only one from Spain. How many books does Sally have and how many does Marsha have?

The problem-solving skills that students use the successfully to complete the above types of exercises are the same as those used in the successful reading of university texts. In other words, a confusing point in the text should be simplified and broken down into smaller, more manageable ideas--the same as must be done to answer problem-solving activities.

Analogies

An analogy is another kind of test item to measure logic and reasoning on popular commercial exams for college entrance. Besides testing logic, the items are also testing vocabulary knowledge. Depending on the level of the EFL students, they could be allowed to use a dictionary during the exercise.

In order to correctly answer an analogy exercise, the students must first understand the different relationships that exist between the first two items and then apply the same relationship to the second set. These relationships need to be mentioned to the students, but since they are the same as the notions that many texts are using today, the students may already recognize the terms. The ideas for the following exercises have been tken from *Breaking Through College Reading*, text for ntive English speakers who were found deficient in logic and reading skills.

Relationships

1. synonyms (similar in meaning)
2. antonyms (opposite in meaning)
3. classification (identifies class, group, sets, etc.)
4. characteristics (describes qualities or traits)
5. function (describes the use or purpose)
6. part of a whole (describes a segment of a larger whole)
7. degree (shows differences in intensity)
8. cause and effect (shows the reason for the result)

For the first type of exercise the student must read the set of analogies and supply only the correct relationship used.

1. A *wing* is to a *bird* as a *foot* is to a *man*.
   Relationship ___(part to whole)___.
2. *Hot* is to *cold* as *agree* is to *argue*.
   Relationship _____.
3. *Sour* is to *lemon* as *sweet* is to *sugar*.
   Relationship _____.

In the following exercise the student must choose from the list the correct word to fill in the blank as well as to supply the relationship.

1. *Selling* is to *profit* as *germ* is to ____(d) *disease*___.
   a. carelessness b. vaccination c. wealth d. disease
   Relationship ____(cause and effect)____.
2. *Potato* is to *vegetable* as *pine* is to _____.

a. wood b. fuel c. house d. glass
Relationship _____.

3. *Kind* is to *considerate* as *courage* is to _____.
a. soldier b. bravery c. fear d. fighting
Relationship _____.

This exercise allows the student to supply a word without providing any possible answers. Since multiple answers are possible, oral checking of responses can provide interesting classroom discussion.

1. *Soft* is to *pillow* as *humid* is to _____.
Relationship _____.
2. *Work* is to *success* as *study* is to _____.
Relationship _____.
3. *Towel* is to *absorb* as *oven* is to _____.
Relationship _____.

As a follow-up to these exercises, allow students to design their own exercises to be given out to other members of the class to answer. And remember, even though the students are enjoying themselves, they are not only learning English, but also thinking more logically and increasing their reasoning power.

Main Points and Details

The main ideas of paragraphs, short passages and articles has been included in EFL programs for decades, but we as teachers are still amazed when many students are unable to offer even a remotely close-to-correct main idea for a simple reading. They have problems in distinguishing details from the main points which is also reflected in their outlines. As we know, outlining is an important academic skill for students planning on furthering their education, but it requires a good understanding not only of English. but also of main points and details. Again, the author would like to suggest that the acquisition of these seemingly simple skills entails more than mastery of the second language; the students must be prepared to recognize the logical organization of written texts, be they in English or Spanish. The following is a series of sample exercises. These are only suggestions for the types of exercises that are useful in teaching main points vs. details. Teachers can easily use the formats to design more exercises based on available passages or better yet, once students have been exposed to one or two practice activities let them write their own exercises based on material you are using.

Example 1

The first is an simple exercise in identifying the main topic from a list of specific ideas related to this general idea. Students circle the most general term in the list. These practices are easy to make or find in books.

corn	wheat	grain	oats

Example 2

Since main ideas of passages are more often stated as phrases rather than as single words, the next exercise is meant to expose the student to main ideas (which are to be circled) as well as more specific points. This exercise can also be useful when initiating the study of general and specific ideas or when teaching the different grammatical forms for expressing phrases.

walking in the surf
riding the waves
picking up seashells
vacationing at the beach

Exercise 3

In textbooks and journal articles students receive an overload of details; therefore, they must learn to differentiate between the major and minor details so as to concentrate on only those that support the main idea. In the following exercise three details are provided for the main topic provided as a title at the top. The student determines whether the details offer minor or major support for the topic; in other words, which details are needed to prove or explain the main point? As soon as the students understand these types of exercises they should be able to write their own in small groups.

Quality Control in a Restaurant

Cleanliness is checked by periodic inspections which include making sure the floor is mopped daily.

In selecting an appropriate restaurant location, the site should have easy access to main highways.

The meat for hamburger must contain 100% beef with no substances to add extra weight.

Exercise 4

Each of the following groups of sentences relate to a general topic. The students must circle the phrase (of the three that follow the sentences) that best

describes the main topic and then circle the letter of the sentence that best expresses the main point.

a. Although newborn infants seem unresponsive, new research shows that they sense more of their environment than previously thought.

b. Infants show preferences to sweet-tasting liquids as opposed to salty at only two days of age.

c. An infant can recognize its mother's voice from a group of female voices at one week of age.

Infant Taste Preferences
Early Infant Responsiveness
Mother's Sweet Voice

Exercise 5

The student is now ready to write his own topic (in a phrase) or main point (in a sentence) for a group of related sentences.

a. The United States' largest manufacturer, The Ford Motor Company, is changing to the metric system in designing new parts.

b. Many canned and packaged foods carry metric equivalents on the labels, and some are sold in metric bottles.

c. In several states road signs show kilometers as well as miles, and weather is being reported in Fahrenheit and Centigrade.

Topic? _____

Exercise 6

An exercise that helps students to advance gradually from main points and details to presenting them in an outlining format is shown below. Lists of main ideas and supporting details have been mixed together as a list of words. The students must think about how the ideas should be organized and rewrite them in the outline form provided.

grapefruit, tomato, food sources of vitamins, vitamin E, green peppers, vitamin C, whole grains, cod-liver oil, vitamin B, wheat germ oil, liver

Title .

I.
- A.
- B.
- C.

II.
- A.
- B.

III.
A.
B.

Conclusion

The purpose of this paper was not to downgrade the present educational system nor to insinuate that it is sub-standard in comparison to that of English-speaking countries. The purpose of this paper was to advise teachers of the results of a study conducted by the author concerning a problem affecting students and to provide some exercises which have proven useful in improving students' logic and reasoning abilities as well as perfecting their EFL reading skills. Many times it is very easy for teachers to place the blame on the students for their problems in our class but if we ask ourselves and the student *Why?* we may be surprised by the answer.

References

Bloom, Benjamin S. 1956. Taxonomy of Educational Objectives, Handbook I: Cognitive Domain. New York. David McKay Company, Inc.

Bloom, B. S. and L. Broder. 1950. Problem-Solving Process of College Students. Chicago. University of Chicago Press.

Greulach, Victor A and Vincent J. Chiappetta. 1977. Biology: The Science of Life. New York. Scott Foresman and Company.

Smith, Brenda D. 1983. Breaking Through College Reding. Glenview, Illinois. Scott Foresman and Company.

Whimbey, Arthur. 1975. Intelligence can be Taught. New York. E. P.. Dutton & Co.