

THE FIRST TEST

- 1 . Use in sentences :
span, tension, cohesion, experimental, seepage .
- 2 . Give the meaning of :
data, fracture, elevation, ductile, deformation .
- 3 . Answer false or true :
 - a . Mines cannot be constructed at low elevations .
 - b . Hydrographic surveys are often made in planning mines .
 - c . If a thing has fractured, it has lost its deformation .
 - d . Contour lines are often found on topographic maps .
 - e . If a thing is fatigued, it has plastic deformation .
- 4 . Insert the proper words in the blanks :
 - a . Around the ends of the dam are two _____ , which carry away the excess water .
 - b . It has a 10 - foot _____ down the middle which is covered by grass .
 - c . As the water flows around the ends of the dam in this way , it has _____ energy .
 - d . The dam is constructed of _____ , or stone and concrete .
 - e . The body of water which is held back by the dam has _____ energy .

THE SECOND TEST

- 1 . Use in sentences :
interested, situation, determine, ductile, hydraulic .
- 2 . Give the meaning of :
get confused, undertake, spillway, hydrographic, kinetic energy.
- 3 . Answer these questions :
 - a . How much weight must the truss support ?
 - b . What are turnpikes usually made of ?
 - c . What is mine surveying concerned with ?
 - d . When does fatigue occur ?
 - e . What decides the shape of the dam ?
- 4 . Write a coherent paragraph , of about 80 words , on the major problems we find with dams .

already heard from other lecturers, but we are reading literature with them, though adapted ; and literature is meant to be enjoyed, and once enjoyment is attained, learning takes place, mostly unconsciously (29) .

With the use of literary material, methods have to be modified. In brief, the three steps of effective literature teaching are : first, presenting the literary text entire as quickly as possible to help students get the general drift, or impression, quickly . If the text is too long, it should be divided into self - contained episodes, and each should be made the subject of one lesson. A good reading aloud by the teacher is very helpful here. Secondly, discussing with the class the work, or the episode, read to get the details clearer. And finally, looking at the work, or the episode, read whole again. A final reading, in which the class can take part, is the appropriate method at this stage, but the last impression must not be a bad reading . (30)

We feel that this kind of training in English should not be limited to first - year students only ; it should really continue throughout the course of study, and for all students whatever their specialisation(31). For to gain mastery over a foreign language, one has to keep in contact with it all the time, one has to hear, speak, read, and write it as often as possible (32) . What is the use of having English for only the first year ? It is obvious that when it is abandoned for the rest of the course, it is bound to diminish and be forgotten in the course of time. This would be a great waste for our students, especially after having studied this language since the age of eleven(33). Furthermore, it would be an unforgivable offence against the English language itself which, with its literature and the ideas and ways of life it reflects, can help to make an essential contribution to the development and the flowering of the civilizations of other nations, including ours . (34)

29. See Mayhead, R., *Understanding Literature*, Cambridge University Press, 1965, pp. 8-9. See also Thompson *op. cit.* p. 4.

30. See Pattison, B., "The Literature Lesson" ,*ELT*, Vol. XVIII, No. 2, 1964, pp. 61-62. See also Elliott, A. V. P., "The Reading Lesson", *ELT*, Vol. XVII, No. 1, 1962, p. 15; and Barnard, G.L. , "Reading to the Class 'With Expression' ", *ELT*, Vol. IX, No. 1, 1954, p. 25 .

31. We have just established that English lectures on specialised subjects are not enough to develop the students' oral and written expression in the language.

32. See Nasr, R. T , *The Teaching of English to Arab Students*, Longmans, 1963, pp. 3-4.

33. Learning English in Iraqi state schools starts at the age of eleven when children are in their fifth primary school year .

34. See Editorial, "Foreign Language Studies: Their Place in the National Life", *ELT*, Vol. I, No. 1, 1946, pp. 5-6.

to consume the time and energy of our English lecturers, it is best transmitted by specialist lecturers, who are supposed to master both content and language. English lecturers, and the writer is one of them, had better devote their time and energy to giving pure English lessons to these students who, as the tests show, desperately need practice in English. This kind of training would certainly compliment the work of other specialist lecturers and help to produce students ready to understand their lectures and also capable of self-expression at the same time.

Some might well ask, "What kind of material should be used with our students instead?" This query is fair enough, since we have expressed doubts about the utility of "Special English". Taking into account the present standards of our students in English, we believe that adapted literary material, like short stories(24), short novels(25), or in fact science fiction(26), could be used effectively(27) to teach the structures and "mechanisms" of English in a context of situation - in the context of literature, whether adapted or otherwise(28). Here, we can easily secure the students' interest in, and enjoyment of, their English lessons. We are not really repeating, in different, sometimes the same, contexts, terminology they have

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24. Adapted short stories first like the ones published in Longmans Simplified English Series, then more advanced material, like that published in Longmans Bridge Series, and the Heritage of Literature Series, could be suggested. We also suggest here material from the National Council of Teachers of English, **English for Today, Book Six, Literature in English**, McGraw-Hill, 1964, and John Millington Ward, **British and American English**, Longmans, 1967. Then short stories from the following could be chosen: W. Somerset Maugham, **Collected Short Stories Vols. 1-4**, Penguin, 1967, and **Favourite Stories**, by the same author, Avon Book Division, New York. Stan Barstow, **The Desperadoes and Other Stories**, Penguin, 1965. Alan Sillitoe, **The Loneliness of the Long Distance Runner**, Pan Books, 1965. W. W. Jacobs, **Selected Short Stories**, Penguin, 1959. Ernest Hemingway, **The Essential Hemingway**, Penguin, 1967. Wallace and Mary Stegner (eds.), **Great American Short Stories**, Dell, 1957. And Penguin Modern Stories, Penguin.
 25. Like George Orwell, **Animal Farm**, Penguin, 1955; Doris Lessing, **Five**, Penguin, 1960; and **Six Great Modern Short Novels**, Dell, 1959.
 26. Like H. G. Wells, **The Country of the Blind and Other Stories**, Longmans, 1955, and **Selected Short Stories**, by the same author, Penguin, 1964. John Wyndham, **The Seeds of Time**, and other works by the same writer. And Penguin Science Fiction edited by Brian Aldiss, Penguin, 1963.
 27. We say "effectively" here as the students' response to this kind of material has been very encouraging since we switched over from "Special English" to literary English.
 28. See Thompson, D., "What is Literature?" in National Association for the Teaching of English, **Eng. Lit. and English Literature**, Bulletin Vol. III, No. 2, 1966, p 5.

the scientific content and facts of these texts (18) ; but when it comes to speech and writing, the oral and written expression of their thoughts in the foreign language, they suddenly become incapable(19). This deficiency, shown through the tests above , requires immediate investigation. Obviously, any kind of treatment would not be effective without pinpointing the cause of the trouble. To the writer, the core of the problem is the tendency to teach so - called "Special English" by English teachers to students of non - literary pursuits. If the primary purpose of prescribing this kind of English is to acquaint students with, and help them to master, the scientific or technical terminology, as is the case in our Colleges of Science, Engineering, and Agriculture(20), we feel that both our students and English teachers are wasting their time. Scientific and technical terminology is already tackled by other specialist members of staff in their lectures. Through constant repetition, terminology is absorbed gradually, and sometimes quite unconsciously. The same thing need not be done twice, once by the expert lecturers, and then by the English teachers(21). This obviously creates boredom in the students, and once boredom sets in, learning stops (22).

From the writer's point of view, what the students need is not really training in scientific or technical English to be able to follow their specialised lectures delivered in English, but training in everyday English itself. For what is the difference] between scientific or technical English and ordinary English ? The answer is simply that the former variety of the language is really composed of the latter plus terms or expressions required by the subject(23). Scientific or technical English, therefore, does not have

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18. Here, the writer has his own science and engineering students in mind as well as those taught English by his colleagues, and whose case is discussed with him.
 19. Many a time, non-Arab members of our University staff have complained to the writer of their students' incapability of intelligible expression when they talk to them on specialised, or general subjects, for that matter, although they are certain that the students do absorb the terminology and jargon of their lectures.
 20. See p. 20.
 21. The writer remembers some very awkward situations he fell into when he was asked by some of his science and engineering students about certain specialised terms he failed to understand himself, let alone explain to the students. Similar situations are frankly admitted by our colleagues who teach this so-called "Special English".
 22. The writer distinctly remembers the students' discouraging response to "Special English". "Not the same thing again!", "We've already had that, sir. Why can't we have something else? Something different!" are among the comments heard. Comments like these have sparked off this investigation.
 23. See Herbert, *op.cit.*, p.v.

engineering students(15), also consists of four questions on the same material as the first test. The first two questions are the same as in the first test, except that the words, or terms, chosen were not all strictly engineering, they included literary ones. The third question consists of five engineering queries to be answered in complete sentences. And in the fourth one, the students were required to write a composition of about 80 words on an engineering topic. Each test was marked out of 100, with twenty - five marks allotted to every question. One hour was allowed for the first test, and two for the second. (16)

A glimpse at the results in both tests shows the students' efficiency in the first test and their defficiency in the second one. The disparity in these results is so obvious that it calls for careful consideration. In the first test, 96.7 per cent of the students passed , and their marks range from 83 to 100, whereas in the second, only 39.2 per cent passed with marks ranging from 50(17) to 71. The only question that lowered the scale of marks in the first test is the first one, where the students had to construct grammatically correct sentences using the words, or terms, given. This obviously indicates weakness in the language. But in the second test, all questions got bad, or low, marks, especially the fourth one, where the students had to write a continuous and coherent piece of compositon of about nine lines long in correct English. Their effort in this particular question consists of jumbled sentences which do not really make sense as far as language is concerned . In addition to their poor performance in composition , it is surprising to notice that their language weakness is centred round anything that is not purely engineering .

The results above clearly illustrate that although the texts used are especially prepared or prescribed for the convenience of our science, engineering, and agricultural students, these books do not seem to have done, or be doing, very much for them in so far as mastery of English is concerned. Their language skills , particularly speech and writing, are sadly lacking. Admittedly, these students are able to master, and reproduce when asked,

15. The other groups are taught by another teacher.

16. The writer thought that one hour would be quite enough to do the first test. More time was allowed for the second test because, besides the composition, it had items in it that were not strictly engineering.

17. This is the lowest pass mark in Iraqi schools and universities.

“English for the Students of Science , Part 1” (8) consists of comprehension passages about scientific subjects ranging from Mathematics and Geology to Chemistry and Medicine. Every passage is followed by questions designed to train students in sentence - construction , paragraph - building , and note - taking in relation to purely scientific topics . The other text , “Special English - Engineering , Books 1 and 2”, originally prescribed for engineering students, (9) is composed of lessons. Every lesson consists of three parts : A, B, and C. Part A is a dialogue between two or more people about an engineering topic; Part B, called “Terminology Practice”, explains words and expressions thought difficult by the authors , using everyone of them in three , sometimes more , sentences to make it clear ; and Part C, termed “Check - up ”, is an exercise to find out if Parts A and B are understood. The third text, “Special English - Agriculture, Books 1 - 3”,(10) is written in exactly the same manner as the second one, except that the subjects are, of course , different .

The methods used by all English teachers at these colleges (and they are three including the present writer) are more or less the same.(11) The students are given an assignment to do at home ; then this particular assignment is discussed in class, and the same procedure is followed with exercises. Both teacher and students cooperate to make everything clear.

To find out how helpful the texts are in increasing our students’ knowledge of English and ensuring their command of it, two tests were administered on one type of these students as a pilot experiment . The first test paper , given to first-year engineering students, consists of four questions on lessons 6-10 in their text.(12) The first one is five engineering terms to be used in meaningful sentences ; the second is again five engineering terms to be explained in English ; the third question is five engineering statements to be identified “true” or “false” ; and the last one is five engineering sentences with five blanks to be filled by students. (13)

The second test paper (14) , given to the writer’s groups of first-year

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8. This text is now used with first-year students at the College of Agriculture. **Special English- Agriculture** is abandoned for reasons to be mentioned later .
 9. We say “originally” here, because this text has ceased to be used for reasons we will explain later .
 10. As mentioned earlier, this text is replaced by **English for the Students of Science, Part I**.
 11. From time to time, we discuss our methods with the intention of coming to an agreement about the best to be used in relation to specific subjects or lessons.
 12. **Special English-Engineering, Book 1**.
 13. and 14. Copies of these test papers are supplied at the end of this investigation.

TEACHING SCIENTIFIC OR TECHNICAL ENGLISH TO IRAQI UNIVERSITY STUDENTS

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The tendency to teach "Special English" to non - English students of science , engineering , agriculture , medicine and other non - literary fields is not new. There are in fact quite a few courses, or texts, especially written for these types of student.(1)The primary object of these texts or courses is supposed to train students in the special language, or register, used in these specialised fields, and help them to master it.(2)In Iraq, this kind of training is considered most important since the medium of instruction at the university colleges of science, engineering , agriculture, and medicine, is English; and almost all books and references used are written in English. Therefore, special material is prepared (3), or prescribed, (4) for first-year students(5)of the University of Mosul Colleges of Science,(6) Engineering, and Agriculture. (7)

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1. See Brookes, H. F., and Ross, H., **English as a Foreign Language for Science Students**, Vols. 1 and 2, Heinemann, 1967 .See also Ewer, J. R., and Latorre, G., **A Course in Basic Scientific English**, Longmans, 1969. Herbert, A. J., **The Structure of Technical English** , Longman, 1970. English Language Services, **Special English-Medicine**, Books 1-3, The Macmillan Company, 1966. Close, R. A., **The English We Use for Science**, Longman, 1969. And Garwood, C. H., "The Teaching of English to the Non-English-Speaking Technical Student 1 and 2", **English Language Teaching, ELT**, Vol. XXIV, Nos. 2 and 3, Oxford University Press, 1970 .
 2. See Ewer and Latorre, op. cit., p. IX.
 3. Al-Khatib, I., et al., **English for the Students of Science, Part I'**, Mosul University Press, 1970 .
 4. English Language Services, **Special English-Engineering**, Books 1 and 2, The Macmillan Company, 1967. English Language Services, **Special English-Agriculture**, Books 1-3, The Macmillan Company, 1966 and 1967. This material is prepared, or prescribed, with the standards of Iraqi students in English in mind .
 5. Why English is studied only in the first year will be discussed later .
 6. Although English is no longer taught here, **English for the Students of Science, Part I** is still used with the students who failed their English last year. Why English is no longer taught at this College will be discussed later.
 7. The writer cannot understand why English is not taught at the College of Medicine. Throughout this investigation, the writer is focusing on the University of Mosul since his language teaching experience is acquired there .