

Evaluating English for Science and Technology: Postgraduate Viewpoint Teaching

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Abstract

The present study aims of evaluating teaching English for postgraduate students from their own point of view. It is restricted to postgraduate (M.A.) students in the College of Engineering \ University of Tikrit. The study covers (40) students. They are (40) male and female students distributed as (13) civil, (12)chemical, and (15) Mechanic Departments. A sample of (37) students has been chosen randomly from the population for this research. A questionnaire of (5) domains and (15) items has been prepared and used for the purpose of collecting data. These data have been analyzed statistically using T-test formula for one sample. The research concluded that there are weak points in most of the domains. However, there are good signs in some of them. In the light of the findings. Some points have been recommended.

1. Significance of the Study:

English for science and Technology (ESP) course has been expanding rapidly. However, some teachers of English language have long experience in teaching English for "general" purposes. The majority of English as a foreign language activities are characterized by an attempt to teach as much as possible for the system and components of a language for general purposes. In most cases these activities have little application to the necessities of science students.

The functions of English Language users are becoming surprisingly numerous that they are no longer restricted to a specific learner category. The interest in English Language may also reflect the mounting increase in the use of English for educational and scientific goals (Stevens;1987:56).

The first step in English Language Teaching is to specify the purpose for which a certain course or programme is designed, such specification will enable us to define what needs to be learnt. This is why such questions as "what is the language used for?" "what do students do with the language?" and "which text book shall we teach?" etc., are often brought into the foreground (River;1983:25).

Within English teaching, it is important to distinguish between (ESP) English for special purpose and (EST) English for Science and Technology. Robinson and Pauline (1980:6) define ESP as follows: by 'ESP is meant that the teaching of English, not as an end in itself but as an essential means to a clearly identifiable goal'. While 'EST' covers the area of written English that extends from the peer writing of scientists and technically to the writing aimed at by skilled technicians. Peer writing is exemplified by books and articles written by experts in one field for other experts in the same field or for experts in a related field. Skilled technicians are those who differ from engineers in the same field only in that they (sometimes) lack equivalent training in theory (Trimble;1985:5).

Essentially, Iraqi postgraduate students participate in English courses not because they have any interest in English, but because they are obliged by the university regulations to pass the examination as a requirement of their graduate programme. This apparently means that they do not have an actual interest in learning English as a foreign language; therefore, they perceive the whole task as quite irrelevant to the field of their study and some methods of

teaching encourage the feelings that learning English at this stage is, in one way or another, purposeless, or even valueless. "This understanding, however, causes serious problems and creates important difficulties for their teachers because it may manifest uneasiness, confusion or even resistance in the requirements of classroom activities" (Deckert;1987: 17).

2. The Problem of the Study:

Teaching EST attracts the attention of many scholars and linguists, even it has very difficult problems. Therefore, they present methods in teaching EST.

Harrison(1973:61) distinguishes three stages in the teaching of scientific English. The first is the common elementary course in the language, with no scientific reference. The second encompasses a superstructure that could serve any scientific purpose, while the third includes a subsequent superstructure serving a specialized scientific purposes.

The process of ELT for postgraduate students has not yet been rightly evaluated. Studies in the field of EST tend to concentrate on the teaching of English for students who need guidance and economical use of English to pursue a course of

academic study. But nothing has been done in respect to EST for postgraduate students due to the fact that the approach to the task of teaching are essentially alike, and the purpose is no doubt identical. This research is primarily concerned with the assessment of the present situation and the suggestions that my pave the way for further investigations.

3. Aim of the Research:

The present research evaluates teaching English for postgraduate students at the technology and science colleges from their own viewpoint.

4. Limit of the Research:

The current research is limited to postgraduate students at the College of Engineering (Civil, Chemical, and Mechanic) Departments for the academic year 2009- 2010.

5. Definition of Terms:

1. Evaluation: It has been defined as follow:

" The Judgment about the worth of the programme. It generally refers to the degree to which an educational programme meets it is intended outcome". (Wolf;1982: 495).

2. Teaching: It has been defined as:

- A planning procedure followed by a teacher in dealing with students to facilitate teaching (Sa'eed;1990: 11).

- Operation Definition:

The research defines teaching as a 'a group of activities and practices done by teachers of English to interact with students and to fulfill the educational aims of teaching English to postgraduate students in the College of Engineering.

3. Postgraduate Students:

It has been defined operationally as a 'university academic stage following the bachelor's degree. This stage includes Master and Doctoral degrees. Students in this stage study academic and scientific subjects concerning their field of study.

Section Two

2.1 Scientific Language Description

Scientific language has been described differently by different practitioners and syllabus designers adopting different approaches and criteria. There are three ways of approaching the description of scientific language suggested by Widdowson (1979:54). The first deals with and focuses on text, the second on textualization, and the third on discourse.

The first approach outlined in Halliday, McIntosh, and Stevens (19897). For them language varies in relation to the different people who speak it and in relation to the different purposes to which it is put. This is rather an axiomatic truth and a common observation. Scientific English and its various subdivisions are represented as distinct register of English varieties of language behaviour which can be characterized in terms of how the language system (langue) is manifested.

The second approach focuses on textualization. Whereas the first indicates only how the language system is formally manifested, the second indicates how it is functionally realized; while the first is quantitative and tells us what linguistic forms occur and how frequently, the second is qualitative and tells us what forms count as communication and how they express elements of discourse. Widdowson (1979:58) introducing the paper of (Lackstrom et al;1972:4) comments that in scientific and technical writing, the past tense is used to describe experimental apparatus which temporary, set up, perhaps, solely for the particular experiment being reported, whereas the present tense is used to refer to apparatus which is permanent. What is significant about these

tenses from the textualization point of view is not that they appear with a certain frequency only, but that they are used to make statements and description of different kinds which are part of the discourse of science.

In the third approach, the focus of attention shifts to the characterization of acts and the manner in which they are combined to form coherent stretches of discourse. The attention here is the universal different languages. Widdowson (1979:60) thinks of scientific surface variants in different languages, and textualization as analogous transformational processes which mediate between the two. The description of EST develops by Trimble (1985:71) claims that written EST discourse is isolated in three major types of descriptive formation: physical description. For example, the text developed mainly by physical description containing some function description and text developed mainly by function or process description containing some physical description.

Physical description gives the physical characteristics of an object and marks the spatial relation of the parts of the object to one another and to the whole, now other objects are concerned. The physical characteristics most frequently

described are dimension, shape, weight, material, volume, and texture. Function description gives the reader information relating, as a rule, to a device of some kind. This information falls into two broad categories: the use or purpose of the device for example.

The helical gear reduces the ratio: and the functioning of each of the main parts of the device for example, Depressing the lever causes the spring to compress function description is frequently associated with causality and result as the second example process description which can be characterized as a type of function description.

2.2 The Features of Language for Science and Technology

The language of Science and Technology (LST) has certain characteristics with regard to vocabulary and syntax; and morphology which plays an important part in it. The LST involves the following :

- 1- combination of ideas: scientific English makes frequent use of expressions in which a combination of ideas is condensed into a

compound noun (e.g. test-tube, i.e. lass vessel in the form of a tube, used for making test) or a grouping of nouns that has not been adapted as a compound (e.g. respiration occurs) (close ;1965:8).

- 2- Words describing things, i.e. indicating their shapes, measurements, properties, qualities or conditions. Such words are: round, square, dry, wet, rough, smooth.(ibid:9)
- 3- Names of things: science is concerned with matter, elements, substances, objects, solids, liquids and gases. Other names which are more likely to occur only in a scientific context are usually derived from Greek or Latian or occasionally from Arabic e.g. oxygen, hydrogen carbon.(ibid:9)
- 4- Expressions of impersonal activity: science is also constantly concerned with activity, but its emphasis is on what happens to things, i.e. impersonal activity, seen objectively, and not on what people do i.e. personal activity is seen

subjectively for example: the liquid was examined and was found to contain X.

The use of the passive form of the verb, (e.g. was examined), was found, rather than the active forms, e.g. (I examined the liquid and found that it contains X).

- 5- Style: LST contains statements of fact rather than expressions through imaginative figures of speech (ibid:8). Trimble (1985:20) presents various significant features of EST discourse such as:

- 1- Description: it is a rehetorical function and is divided into three types (a) physical (b) function and (c) process descriptions.
- 2- Definition: several types of definition are found in written EST discourse lend themselves well for teaching both reading and writing through the application of the rhetorical approach.
- 3- Visual- verbal relationship: it covers the placement of the textual material (the verbal) in relation to the visual- whether the two are separated or whether the

verbal is part of a visual itself. This placement text in relation to illustration frequently affects both the kind and amounts of information the text gives to the illustration and the textual.

- 4- Instructions: are found in technical discourse usually in technical manuals. They are defined as the rhetoric of telling someone what to do and how to do a tool to achieve a certain goal. There are two types of instructions: (1) direct instructions, which are stated in the imperative, and (2) indirect instruction, which often sound more like suggestions than command. This type contains model verbs: "can" "may" "should", and less often "must".
- 5- Classification: it is taken from two perspectives: (a) the direction in which a classification is made whether finding the members of a given class or classification. It is explicit or implicit, and if the former, whether it is a full, or partial classification.

2.3 Previous Studies

The following are some of the related studies which have been carried out in the same field of the current research:

1- Ibrahim (1982)

The aim of that study is the use of adverbials in scientific English. The researcher found that EST was not entirely different from other kinds of English. The sample of the study is a number of dissertations written by EST students. The result of that study was that there were a very small number of adverbs which are restricted to EST texts. However, the nature of EST texts invites the use of certain classes of adverbs in EST more frequently than in non- EST.

2- Suleiman (1988)

The aim of that study was to investigate two problems facing Arab graduate students in scientific writing of research papers and preparing bibliographies. The sample of that study was Arab graduate students in Dirasat Human and Social Science in Jorden university. He found that the first problem area proved to be an important aspect of writing scientific research papers which was to be contended with the second problems were not as serious as the first, but it still poses a

problem for a large number of the student samples. The result of this study was that many students mishandle the basic principles of 'blending source material in scientific research papers" and 'preparing bibliographies. Although the academic level proved to be a significant variable to consider, the problem is still serious and calls for further work and immediate action.

3- Kubaysee and et al (2008)

This research investigated the standard of (Arabic, Kurdish, and English) language teachers' performance concerning principles of active teaching at the institutes of preparing teachers from their students own point of view. The sample includes (100) students in the academic year (2007-2008). A questionnaire of (47) items distributed among five aspects had been prepared by the researchers for the purpose of this study. After analyzing the data statistically, the findings indicated that teachers of (Arabic, and English) languages have good ability to teach their subjects actively from their students' point of view.

Section Three

3. The Procedures:

The present research has been performed according to the following procedures:

3.1 The Population:

The population includes all postgraduate students (Master degree) in the College of Engineering \ University of Tikrit. For the academic year 2009-2010 who are studying English. They were (40) postgraduate students distributed among three departments.

3.2 The Sample:

A sample of (37) postgraduate students has been randomly chosen from the population; (15) students from Civil Engineering, (12) students from Mechanical Engineering, and (10) students from Chemical Department. The sample represents (92%) of the population.

3.3 Instrumentation:

A questionnaire of (15) items distributed among (5) fields of evaluating the teaching of English language. The validity of the prescribed tool has been fulfilled by presenting it to a jury of specialists in measurement, evaluation and methodology (Appendix). The reliability has also been computed using test method. The correlation coefficient is

(76.4%). Hence the questionnaire was fit to evaluate the teaching of English from postgraduate students' point of view.

The questionnaire has been given to the definite sample on February 2010. The collected responses have been substituted by (always= 3, sometimes=2, rarely=1). For the purpose of statistical analysis. The collected data have been treated statistically by using ratio, means, and percentage (Ferguson;1981:206).

Section Four

4.1 Results:

To evaluate teaching English and to know its standard, a ratio, means, and percentage score have been computed for each item in the questionnaire. Table (1) describes the statistical results of the questionnaire being used. It is clear that there are some significant items and other non-significant items. This will be illustrated concerning domains and items.

Table (1): Ratio, means, and percentages of the Item :

No.	Domains and Item	Ratio Means	Percentage (%)
	First- The Subject Matter		
1.	The teacher presents enough	0.80	80%

	references to enrich the knowledge.		
2.	The teacher gives multipractices related to	0.54	54%
3.	subject. The teacher presents the lesson which enriches and develops their potential to solve problem.	0.20	20%
	Second- Class Interaction		
1.	The teacher encourages students' role in illustrating the lesson and admires them.	0.85	85%
2.	The teacher accepts inquiries and answers them.	0.57	57%
3.	The teacher encourages the progress in the lesson.	0.20	20%
	Third – Class Administration		
1.	The teacher determines the curriculum activities (reports, research plan, translation etc.)	0.90	90%

2.	The teacher gives the lecture in time.	0.50	50%
3.	The teacher completes the syllabus as a whole.	0.20	20%
	Fourth- Homework		
1.	The teacher asks me to read other references to enrich knowledge.	0.93	90%
2.	The teacher asks students to prepare some research plans, reports and abstracts related to the subject.	0.52	52%
3.	The teacher follows up the homework.	0.22	22%
	Fifth- Test		
1.	The teacher evaluates answers logically.	0.92	92%
2.	The teacher gives enough test in a course.	0.51	51%
3.	The teacher uses different questions (open question,	0.21	21%

	closed, subjective questions).		
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From the findings in Table (1) we can conclude the following:

First domain: concerning the subject matter presented by the teacher to postgraduate students, table (1) shows two items which are non-significant items in comparison with the tabulated items. This means that those teachers are careless and don't have any interest in re-new the syllabus. This may be attributed to their misunderstanding of the syllabus demands for each department and each academic specialization which they teach. However, there is a good sign in the first item about presenting few information and knowledge to the students.

Second domain: it is clear from Table (1) that the interaction between the teacher and the students is good. There is one non-significant item in this domain. The communicative competence in English is built through interaction talks and thoughts between two sides (the teacher and the student, and students themselves).

Third domain: there are three significant items in class administration. This means that there is an interest in this domain; English teacher determines the activities, attends lectures in time and works hard to finish the syllabus in time.

Fourth domain: there are two non-significant items in this domain. This declares a weak point in assigning homework and they do not follow up their students' homework. Therefore, there is a good sign of asking students to read more references and enrich their competence in English.

The fifth domain: there are two non-significant items in this domain. There is no logical distribution of marks upon questions. There is no differentiation in questions. Therefore, there is a good sign for the benefit of those teachers in the first item as they correct the answers logically.

4.2 Conclusion

It is clear from the findings cited above that there is a weakness in most of the domains such as the subject matter, test, and assigning homework. However, there is a good sign in class administration and class interaction.

It is fair to admit that the presentation of EST for postgraduate students in the College of Engineering is not

promising, because it is widely different from the ever-expected standard required by the course.

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Appendix

Jury of Experts

No.	Academic Status	Name	Specialization
1.	Prof.	Dr. Al- Nassri, Nahda Majed	Method of Teaching
2.	Assist Prof.	Dr. Namful Saed Majed	Applied Linguistic
3.	Assist Prof.	Ar. Sultan, Amra	Method of Teaching
4.	Assist Prof.	Dr. Raad Edrass	Measurement
5.	Instructor	Mrs. Manal Omer Mousa	Method of Teaching
6.	Instructor	Mr. Ahmed Mohammed	Applied Linguistic

List of Abbreviation

EFT: English as Foreign Language.

EL: English Language.

ELT: English Language Teaching.

ESP: English for Special Purposes.

EST: English for Science and Technology.