Challenges of Teaching Technical Vocabulary at University Level

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Abstract: This paper is based on a comparative study into the challenges of teaching technical vocabulary encountered while teaching at a Technical Science College in Turkey and at University Malaysia Pahang, Malaysia. It is a fact that delivering technical terms in English poses some difficulties to the teachers. Some of these obstacles stem from the task inside classroom itself as a specific point in teaching language field. The second comes from teachers, as they are generally less productive to present the vocabulary items in the event of encountering teaching complications. Some problems arise from learners themselves as they generally fall behind of essential language level or they lack motivation. This paper aims (a) to analyse the challenges of teaching technical vocabulary from the teachers' perspectives, (b) analyse them in terms of syllabus design, and (c) render some recommendations towards stakeholders in order that they should take all these barriers into account while designing their curricula.
Keywords: Teaching vocabulary, Technical Terminology, Technical vocabulary

Introduction
Language Learning as a Key Competence

Learning a foreign language is nowadays considered to be the most important factor after the basic skills in Vocational and Training (VET) organisations for the formation of knowledge-based society. For example, the EU Commission adopted a proposal for a Recommendation of the European Parliament and the Council on key competences for lifelong learning. Eight key competences were determined and regarded as a must that all citizens should have for a successful life in a knowledge society. The first two of these key competences are 1) communication in the mother tongue and 2) communication in foreign languages (COM: 2005). Communication in the mother tongue is the ability to express and interpret thoughts, feelings and facts in both oral and written form (listening, speaking, reading and writing), and to interact linguistically in a suitable way in the full range of societal and cultural contexts — education, training, work, home and leisure. Communication in second or third language requires knowledge of vocabulary and functional grammar and an awareness of the main types of verbal interaction and registers of language. Knowledge of societal conventions, and the cultural aspect and variability of languages is important. Essential skills consist of the ability to understand spoken messages, initiate, sustain and conclude conversations. One has to read and understand texts appropriately to cater to the individual's needs also. Individuals should be able to use aids for example printed materials, and electronic communicative tools accurately in order to enhance learning languages informally as part of lifelong learning process.

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New Approach to Language Teaching

In the last century, there has been a change in the characteristic of the world of foreign or second language teaching and learning. This change has been in the field of teaching practices as linguists have begun to understand more about the complex processes of language acquisition. Thus, language teachers have gained insight into what techniques and content should be used to accelerate language acquisition in the teaching and learning environment. Above all, there has been a shift of focus from grammar to the lexicon. According to David Wilkins (cited in Thornbury, 2002), "Without grammar very little can be conveyed; without vocabulary nothing can be conveyed." Michael Lewis (1993) states, a revival of interest in vocabulary acquisition became apparent. In his book, Michael Lewis put a greater emphasis on the meaning and use of the different language items than on communication. According to Michael Lewis, "the Lexical Approach is not a new all-embracing method, but a set of principles based on a new understanding of language."

Word and Vocabulary

Word and vocabulary are the two terms that are used often as synonyms. However, one may not make any distinction between these two, but when it comes to the precise and technical way of handling these two terms, the difference is obvious because they are two different concepts. The term "word" refers to an individual entity while the term "vocabulary" is a term referring to a collective concept or to a collection of many entities that are called words. Vocabulary refers to the total or partial stock of words that an individual or a language has. The term word is widely spoken about in linguistics while the term vocabulary is in the field of education, one at the theoretical level of understanding and the other at the practical level of application.

As language teachers, we should not regard vocabulary as lists of words. It is more than words themselves. Folse (2004, pp. 2-9) discusses set phrases, variable phrases, phrasal verbs and idioms. Thornbury (2002, p. 6) uses the term "lexeme" as "a word or group of words that function as a single meaning unit." According to Larsen-Freeman (2001, p. 254), knowing the form of a phrasal verb includes knowing whether it is followed by a particle or by a preposition, whether it is transitive or intransitive, whether it is separable or not, and what stress and juncture patterns are used. And knowing the meaning encompasses literal, figurative and multiple meanings. Finally, knowing the use covers understanding the fact that phrasal verbs are part of informal discourse and that they operate by the principle of dominance. We should also be aware of the fact that knowing a word also implies knowing its collocations. Here "collocation" refers to the combinations of words that are natural and normal to native speakers (see Lewis, 1993, 1997 and 2000; Nation, 2001; Thornbury, 2002). Another aspect to be mentioned here is the cumulative nature of the process of vocabulary learning. According to some researchers, (e.g. Anderson, 1999; Nation, 2001), learners need frequent encounters with a new word in order to fully understand and to learn it. Knowing a word involves a wide range of understandings and skills related not only to the form but also to the meaning and use of that particular word. Some other researchers stress the importance of context (Johns, 1997; Nagy, 1997; Read, 2000; Nation, 2001; Meara, 2002). They argue that speakers cannot assign any meaning to words in isolation, and thus, meaning is derived from the connection between words in a context. Meara (2002, p. 400) says: "*context can radically change the meaning of words, making familiar words opaque, and unfamiliar words completely transparent.*"

There were some other aspects that needed to be mentioned in the scope of this study. These aspects comprised constraints on the use of words, when to use a lexical item, frequency and informal expressions. However, we would not do this given the limitations of the study.

The Significance of Teaching and Learning Technical Vocabulary

Technical vocabulary is a group of specialized vocabulary of a specific field. These group of specialized vocabulary have specific definitions within the field, and their meaning do not have to be the same as their meaning in common use. In this context, teaching and learning of technical vocabulary is of high importance for the students of technical and vocational fields. Thus, the departments of our training organisation are technical based, teaching technical terms become a very important aspect of both language education and technical training.

In this study, technical vocabulary refers to the technical terms used in the technical departments of our training organisations. Given the limited number of lessons assigned for this purpose, the lecturers are more interested in the "heavily used" terms in each department. For example, the department of electronics should have different technical terms from the department of "shoe design". However, we have adopted a general perspective and tried to look at the "vocabulary" issue from the same viewpoint. Thus, this study tries to shed a general light upon "teaching technical vocabulary" issue.

Research Material and Method

The Study

This study was based on a comparative study on the challenges of teaching technical vocabulary encountered while teaching at the Selcuk University in Turkey and in University Malaysia Pahang, Malaysia. The study was conducted in two different places covering different organizations. The first part of the study was conducted in the Technical Science College, Faculty of Technical Education and the Faculty of Vocational Education of the Selcuk University. The second part of the study is in Malaysia which covered English Department, Centre for Modern Languages and Human Sciences, University Malaysia Pahang. As these training organisations themselves are of technical characteristics, teaching and learning technical vocabulary is an indispensable part of their curricula. Hence the scope of the study is well chosen. The aim was to determine the challenges of teaching vocabulary in these technical training organisations taking into consideration the views of the lecturers who taught English or Technical English.

The views of the lecturers were determined based on focus group interview technique and to evaluate using the qualitative research approach. Since the interviewees were lecturers themselves, they could be regarded as experts and that was why focus group interview could be an effective technique. Furthermore, the researchers themselves were teaching technical English and that means they could be good moderators during the interview.

The Limitations of the Study

The population of the study comprised of the lecturers who taught technical English at two universities in two different countries. Although this may pose a limitation as to the population

of the study, the rate of differences seemed to be lower than expected. Furthermore, the background of the students and the lecturers at the two universities in two different countries could be regarded as limitations at the first hand. However, the findings indicated that these limitations had so little significance as the challenges of teaching technical vocabulary that they could be considered as having the same traits.

The Focus Group Interview

This study was based on a qualitative research technique: focus group interview. The meeting room was quiet, comfortable, and free from outside distractions. Participants all sat around a table so they could see one another. The chairs were comfortable. Light refreshments were served in such a way as not to distract the respondents from the discussion.

The researchers were the facilitators to the focus group discussion done in Turkey and Malaysia. The facilitators directed the discussion without being a part of the discussions. The facilitators were able to create a relaxed, informal atmosphere where the participants felt free to express their opinions. The facilitators avoided expressing their own opinions or making judgments on the opinions of the participants. The facilitators asked a series of open-ended questions from general to specific in order to get the participants to express their opinions, experiences, and suggestions. The facilitators allowed the discussion to lead into new directions as long as the topics were pertained to the subject of the focus group interview. All members of the group were encouraged to participate so that not one person was allowed to dominate the discussion. The sessions were tape recorded and transcribed after the meeting. A member from each group checked the texts.

Four groups were formed consisting of the English lecturers who were willing to participate in the interview. All of them had their PhDs in Education. In the Turkey part of the study, two groups were formed. In each group, two English lecturers were from the Technical Education Faculty, two English lecturers were from Technical Vocational Faculty and one English lecturer was from the Technical Science College. Two of the English lecturers were females and three were males in each group. The same number of lecturers was interviewed in Malaysia part where the English lecturers were a group formed from Centre for Modern Languages and Human Sciences. Each group consisted of two males and three females. For the interview, the same procedures were applied to each party.

The open-ended questions were arranged in such a way to learn the English lecturers' feelings about the syllabus they used, the challenges they faced in the classroom, their expectations from the students and the feedback from students themselves on their performance in the subject taken. The irrelevant data gathered from the participants were not taken into consideration.

Data Analysis

The focus group interview generated a lot of information. This information was coded and summarized for analysis and discovery. The tape recording was transcribed, omitting the names of the speakers and using codes like T1, T2, T3, T4 and T5 for the participants in Turkey and M1, M2, M3, M4 and M5 for the participants in Malaysia. After the discussions were carefully typed, the researchers read the transcript, looking for key words and concepts that reoccurred.

Then the keywords were grouped and phrased into categories. After the key words and phrases were grouped into categories, the interpretation step began and the central themes and issues emerged.

Findings

With the analysis of the data collected through the focus group interview, the followings were found:

- All the English lecturers/participants were of opinion that the time assigned for this purpose is limited. "I do not have enough time to teach technical vocabulary", "Lack of time to finish the technical report writing is a problem for me" and "I think I need more time to explain the meaning of words technically" are the typical common statements.
- All the English lecturers expressed their difficulties in teaching technical vocabulary in grammatical forms. "Students are confused with the technical words when they try to use them in tenses", "They are usually confused on how to use the forms of technical verbs especially in accord with the tenses", "They can not distinguish the used word or verb in a jumbled text of tenses in the write-up" are some of the common expressions by the participants.
- All the participants agreed that they need more confidence when teaching technical vocabulary. "I think I lack confidence in teaching technical vocabulary", "I and the students need more exposure on the correct use of technical vocabulary" and "I want to discuss with the Engineering lecturers for more input" are the statements commonly expressed.
- More than half of the participants (6 from Turkey and 7 from Malaysia) felt that students "lack understanding in using the technical vocabulary", they "can not use the vocabulary in the incorrect way" and they "fail to show they understand the technical jargon clearly".
- 15 participants (8 from Turkey and 7 from Malaysia) argued that "there should be emphasis on the different vocabularies needed by each engineering faculty", because "each field is different on its own" and it should be noted that "categories of vocabulary according to each faculty" should be determined.
- Generally all the lecturers proposed to teach vocabulary in context and they noted that "technical vocabulary is not into context", "technical jargons are not fully utilized in write up" and "technical words are left hanging".

Discussion

With the analysis of the data collected through the focus group interview, the point is that the lecturers who teach technical English in both countries have almost the same challenges. This is a striking point when we consider that English is regarded as "foreign language" in Turkey whereas it is viewed as "second language" in Malaysia. Another striking point is that, although the backgrounds of the organisations, lecturers and students are different, they have similar problems regarding syllabus, timing, students, time constraints and relevancy of technical vocabulary.

It is understood that some of these challenges stem from the task itself as it is a specific point in teaching language field. The lecturers who teach technical vocabulary can be regarded as the teachers who are specialized in any specific field, which is ESP. Therefore, the determination of

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the technical vocabulary to be taught in that specific field seems to be of high importance. "There should be emphasis on the different vocabularies needed by each engineering faculty", "each field is different on its own" and "categories of vocabulary according to each faculty" are the expressions and phrases indicating that the lecturers themselves are aware of this need. Whether this categorization is the task of the organisation or that of the lecturers is the main point to be determined here. It is understood that the lecturers expect this task to be carried out by the organisations themselves. However, it also indicates a shortcoming on the part of the lecturers themselves. To overcome this challenge is their task rather than that of the organisation because teachers are generally productive, or are unwilling, to present the vocabulary items in the event of encountering teaching challenge. Their complaint about the limitation on time is both related to the syllabus and their ability to find immediate solutions. If they have such ability, this will also contribute to their self-confidence and that of the students as well. This ability will enable them to find proper contexts to use the technical vocabulary and thus to eradicate the confusion in the minds of the students on the meaningful use of technical vocabulary. Consulting or discussing the matter with the lecturers who teach technical fields can contain this context issue. This will urge both the lecturers who teach technical English and the lecturers who teach technical subjects to have a sustainable cooperation. This cooperation will also motivate the students who will be exposed to similar context in nearly all the subjects. When the students are aware of the meaning of the technical term or jargon in their mother tongue, it will be easier for them to comprehend and distinguish the technical meaning or content of these newly learned vocabulary.

The problem is also related to the background of the students themselves. When the students do not have enough language background (both in the target language and in the mother tongue), this will arouse some difficulties in teaching the target language. Some students "lack of understanding in using the technical vocabulary", is mainly due to their poor command of the language. In this case, the lecturers have to spend more time to make up for this gap, and this will, in turn, lead to time consuming efforts, wearing out of the lecturers and disorientation of the other students who are eager to learn more and to go beyond. This is again related to the student admission policy of that training organisation.

In short, the challenges sometimes stem from the nature of the task itself, sometimes from the lecturers themselves and sometimes from learners. However, it seems that these challenges are interrelated and cannot be handled independently of each other. Therefore, the lecturers, their training organisations, the students and the learning program and policy, need to play its own respective role to create these problems. Yet, we are sure that they will play the same role in the same way to solve these problems as well.

Recommendations

The following recommendations can be given to minimize the challenges displayed above:

1. It is clear from the findings that language teachers need to improve their competency in teaching technical vocabulary by exposing their grasp of the vocabulary to the usage in the technical field too.
2. Collaboration between technical lecturers and language teachers is essential to improve the module for the teaching and learning purposes in dealing with technical vocabulary.

3. Students must have ample time to read and digest the text related to technical vocabulary.
4. Language teachers should give grammar exercises as an enhancement to improve the student's understanding of the technical vocabulary.
5. Students should have the chance to demonstrate their technical vocabulary understanding not just through writing assignments but also through presentation (products, processes and procedures, labelling, charts, graphs and others).
6. Scenario-based examples are very useful for the language teachers to create a new paradigm for the students in understanding the usage of the technical vocabulary especially when they graduate later on.
7. A variety of materials will come in handy for the language teachers in classroom especially for weak and below average students.
8. Observations from the technical lecturers in the language classroom are also needed so as to get feedback and extensive discussions on the appropriateness of the technical vocabulary.

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