Teaching Academic English to Future Masters of Science

Gulyusa Rafaelevna Zamaletdinova, Gulnara Fandasovna Zamaletdinova, Kazan Federal University, 2 Tatarstan Str., Kazan, Russian Federation

Tatiana.I. Kuznetsova
D. Mendeleev University of Chemical Technology of Russia, Moscow, Russian Federation

Abstract

The future Masters of Science have achieved a certain stage in their knowledge of English and they are now facing the task of developing their communicative competence to the level which makes it possible to use English as a medium in their work in science and technology. Many foreign learners while formulating their thoughts in English subconsciously proceed from the assumption that there is a direct and straightforward relationship between Russian and English. They mistakenly believe that the way they choose and arrange words or select grammar structures in English is similar to what they automatically do in their mother tongue. But this is not the case. The strategy of using Russian as the source language and English – as the target language cannot yield good results since they do not know the language well enough to be able to switch over to a new linguistic code, to break away from their mother tongue and to overcome and counteract its influence.

This means that science students should be helped to work out a totally different learning strategy to be used when they deal with the functional style of Academic English. When they are only beginning to read scientific publications belonging to various genres, they should be taught that it is not enough to understand the main content of the paper. They should also pay attention to the language the authors use, to the linguistic means chosen for expressing their ideas.

Keywords: communicative competence, teaching Academic English, the target language, Masters of Science.
Introduction

Teaching English to students who have already obtained their BS degrees and who are being trained as future Masters of Science presents a number of problems for any teacher. These students have already achieved a certain stage in their knowledge of English and they are now facing the task of developing their communicative competence to the level which makes it possible to use English as a medium in their work in science and technology:

-- To become proficient in reading academic texts, listening to lectures and taking notes;
-- To write academic papers and publish them in international professional journals;
-- To attend international conferences where English is used;
-- To be active participants in debates and panel discussions;
-- To make successful presentations in English;
-- To discuss academic and professional problems with colleagues from other countries; etc.

All that means that the focus should shift to studying the so-called Professional Academic English, both in its written and spoken forms. It should be emphasized that students must first of all be made aware of the fact that what we call "language" manifests itself in various ways and in various functions. The language we use while discussing a scientific problem is naturally different from the language we use when talking about everyday things with our neighbours. What is usually taught at school is the so-called "General English" which in most cases is considered to be the main object of study for foreign learners and which is the main means of communication in everyday situations.

Students should be made to realize that as native speakers of Russian they have a natural mastery of different varieties of their mother tongue. They can easily switch over from what is usually referred to as the functional style of everyday communication (i.e. the kind of Russian used in everyday speech) to more formal functional styles – Business Russian or Academic Russian (the kind of Russian used when discussing problems of science and technology).

Methods and Materials

As far as English is concerned, this switch over from everyday English to Academic English does not come naturally to students, because, as has already been said, they have mainly been taught only one variety of the language – spoken, or colloquial English which forms the basis of everyday communication. The first task of the teacher, then, is to make students familiar with the features of "the language of science" which differentiate it from everyday English. These features, which, as is well-known, involve various levels of language, from vocabulary to morphology and syntax, can easily be demonstrated on the material of extracts from different kinds of scientific writing.

It is generally recognized that Academic English is classified into three main categories:

a) General structures and patterns that form the basis for all kinds of communication, scientific communication included;

b) The basic language of scientific English made up of words, structures and patterns which are common to all scientific disciplines;

c) Special (terminological) vocabulary of a given academic subject area.

The first category should present no problem to students who have already mastered the elements of general English and have a Basic English vocabulary. The emphasis should be made on the second category which forms the essential framework upon which the subject-specific vocabulary is superimposed. As for the third category, the acquisition of these special vocabularies generally presents very little difficulty, first, because they are mainly international words which, as a rule, are easy to understand, and second, they usually have very specialized meanings and students are competent enough to deal with this specialist terminology.
Teaching experience shows that the main difficulties arise when students are asked to review the article they have read, or to make a short report on the subject of their research, or to make a presentation on a scientific problem – the tasks where they are naturally expected to demonstrate Academic English "in action". Strangely enough, even good students in this situation often fail to say something in a more or less acceptable way, so that at times it is even difficult to decode their messages and to understand what they really mean. The same applies to situations when students are to present their reports in the written form, or when they are, for example, asked to write an abstract of an article on the problem they are investigating.

The reason for this appears to lie in the fact that very often studying Academic English is reduced to studying its elementary parts – isolated words or, at best, two-component collocations. These are memorized and subsequently used by foreign learners as the "building material" for their own utterances. But the strategy they choose for generating their own texts (whether written or oral) is invariably the same: first, to formulate what they are going to say in Russian, and then to translate this Russian text into English, using mainly the words and constructions they have known since their school time, i.e. using the so-called School English which is simple, elementary, and to some extent even primitive. While doing this they often have to turn to a dictionary, but it is always a Russian-English dictionary, so that the basis of what they write or say is always Russian.

When students turn to a Russian-English dictionary in search of an English equivalent for a Russian word they seem to be unaware of the fact that words in a dictionary can only give them a general idea of how the same concept can be expressed in English. But words always function in speech, and the factors to be taken into account when selecting a word are not only the lexical meaning of this word, but also the way it can or cannot be combined with other words in speech chain. As J.R. Firth aptly remarked, "you shall know a word by the company it keeps." The choice of this or that word is influenced by its combinability: what nouns, or verbs, or adjectives, or prepositions the word is combined with, what words can precede or follow it, and so on. This is what can only be learned from unilingual dictionaries, in particular, dictionaries of collocations.

Still more important, it should always be borne in mind that we do not speak in words but in units larger than a word (that is, word-combinations, sentences, or even paragraphs). In other words, one cannot arbitrarily choose and combine words into sentences: the choice and arrangement of lexical units must comply with the rules and norms of combinability which are specific to the English language. Actually, this point becomes very clear whenever you look at any stretch of conversation.

Consider, for example, the following dialogue in English:

A: Marc, would you like a cigarette?
B: Thank you very much, I'd love one.
A: Here you are.
B: Thank you. I wonder if you could tell me the number of the bus to the Square from here.
A: Mm oh let me think for a moment… I'm not absolutely sure, but I think it's the number twelve. Yes, Marc, you can catch it just around the corner, if I'm not mistaken.
B: Oh, thank you. Hope you don't mind my asking, but do you work down there?
A: Mm, a little bit further along, actually. I work in a bank.
B: Oh, I'm not quite with you there. What do you do in the bank?

As can easily be seen, the whole dialogue consists of nothing but stereotyped phrases, clichés or formulae which are regularly reproduced in discourse by various speakers. These are ready-made units which anyone can make use of whenever need arises. Their function in speech has been
highlighted by famous Russian linguists (see, for example, works by Л. В. Щурба, В. В. Виноградов, А. М. Пешковский and others).

The same is true of any functional style: not only of the style of everyday speech, but also of the language of science. It can be demonstrated how this principle works in professional communication both in written and spoken English – in articles, reports, round-table discussions, and the like. Here, for example, is an extract from a report at a scientific conference obviously written in Professional Academic English:

This paper has presented a detailed treatment of shear strengthening of concrete beams using fiber-reinforced polymer composites. Various strengthening schemes have been classified, and their advantages and disadvantages discussed. Some guidelines for the selection of a suitable shear strengthening scheme for a given situation were also presented.

It must be emphasized that the technique of shear strengthening of concrete beams using FRP composites is still at its early stage of development. Current understanding of the behavior of the strengthened beam is limited and much further research is needed. While the design method recommended here is believed to be conservative as far as the contribution of bonded FRPs to shear resistance is concerned, it should be kept in mind that there is still considerable uncertainty concerning the total shear capacity of a concrete beam with bonded FRP shear reinforcement. Therefore, care must be exercised in practical design and expert advice or experimental evidence should be sought whenever necessary. (FRP Reinforcement for Concrete Structures, Proceedings of the 3rd International Symposium, Sapporo, Japan, 1997)

Although stereotyped phrases and linguistic formulae of this kind are abundant in practically every case when Academic English is used, they seem to escape the attention of science students who tend to concentrate on the scientific information or the subject under discussion rather than on the linguistic structure proper. As a result, when they are to form and formulate their own ideas in English, they are left with only a very limited linguistic repertoire and have to fall back on their mother tongue in the vain hope that they could somehow cope with the difficulty by translating the familiar Russian phrases into English. And that's where, metaphorically speaking, the shoe pinches, that is, where real trouble begins. In the overwhelming majority of cases students' final products are utterances or sentences composed of English words and grammar structures which, nevertheless, are far from being English in the proper sense of the word. One can easily see the original Russian patterns through them - Russian syntactic structures, Russian word-order, Russian choice of words and combinatoriality, Russian prepositions, the use of zero article where the definite or indefinite articles should have been used (because in Russian there are no articles at all) – all this shows that they don't know where to draw their linguistic resources from. Many foreign learners while formulating their thoughts in English subconsciously proceed from the assumption that there is a direct and straightforward relationship between Russian and English. They mistakenly believe that the way they choose and arrange words or select grammar structures in English is similar to what they automatically do in their mother tongue. But this is not the case. The strategy of using Russian as the source language and English – as the target language cannot yield good results since they do not know the language well enough to be able to switch over to a new linguistic code, to break away from their mother tongue and to overcome and counteract its influence.

This means that science students should be helped to work out a totally different learning strategy to be used when they deal with the functional style of Academic English. From the very start, when they are only beginning to read scientific publications belonging to various genres, they should be taught that it is not enough to understand the main content of the paper. They should also pay attention to the language the authors use, to the linguistic means chosen for expressing their
ideas. This is very important because this forms the basis for developing the learners' own academic style.

Science students should learn to break down the text they are reading into elementary "building blocks" many of which are reproduced from one text to another; these should make part and parcel of their own language resources as far as Academic English is concerned. Students should draw freely on the vocabulary and grammatical structures of the original texts, i.e. individual words, word-combinations, speech patterns, and even complete sentences, especially those which they can safely imitate in their own speech and writing. They can borrow directly these larger-than-a-word units from the original texts so as to make them their own and to integrate them into their own way of forming and formulating thoughts. This is the only way to enrich and enlarge students' own vocabulary and their knowledge of new syntactic structures characteristic of Academic English.

To make the task easier, the original paper can be subdivided into logical parts which usually include:

-- The objectives of the research conducted and the hypothesis under test;
-- The experiments carried out;
-- The methods used;
-- The collection and analysis of the data;
-- The results obtained and the conclusions to be drawn from them;
-- Directions for future work.

**Conclusion**

In conclusion, one more important point to make: the task of teaching Academic English is only realizable in collaboration with specialists working in the field students major in (for more detail, see, for example: N. Dudley-Evans, M.J. St John. Developments in English for Specific Purposes. Camb. Univ. Press, 2011). This collaboration can take various forms: these specialists can give lectures in English to students or they can be present when students make their reports or presentations and take part in the discussion. This seems to be very important for various reasons. First of all, the specialist will discuss scientific problems on the level that is probably inaccessible to the teacher of English who is only a layman. Clearly, the teacher of English is not competent enough in chemistry, mathematics or any other branch of science that students specialize in, and therefore his or her ability to take part in professional communication is limited. Contrary to that, when students get a chance to talk to a person who is a recognized expert in the field, the whole situation is drastically changed and they get involved in the discussion on a professional level. They are motivated to ask questions, to make statements, to give arguments, etc. Academic English in this case "is taken out of the classroom", so that the whole situation of professional communication becomes more realistic. Besides, even if the specialists' English is far from being flawless, they can still demonstrate to students how the principle of "language in action" works in professional communication.

**Summary**

Students' attention should be focused on easily reproducible stereotyped phrases used in each of these sections. They should concentrate, for example, on the way the authors describe their experiments – what words, phrases, etc. they use, how they arrange them, and so on. They should go over the remaining sections in the same way, trying to choose the expressions, clichés and patterns that can safely be used in their own work. The next step is to get this material firmly fixed in their minds. It goes without saying that the selected language material can only be made their own through practicing it in their own speech and writing. Therefore, students who major in a scientific subject are advised to model their own English on
texts intended for the purposes of professional communication. To alleviate the difficulties that arise when they begin studying Academic English, it appears reasonable to give them two or three lectures introducing them to this comparatively new field of study:

1. Academic English; what makes it different from General English.
2. Academic English as it is used in a particular specialist subject.

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