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HOW TO MAKE ENGLISH FOR STUDENTS OF CHEMISTRY MORE FUN. TIPS FOR TEACHERS OF ESP

Introduction

The last several years have seen a growing interest in teaching English for Specific Purposes (ESP) in Poland. There is a vast array of textbooks and reading materials for ESP courses, yet most of them deal with business and management, law, economy etc., while there is still a shortage of ready-to-use materials concerning such fields as, for example, chemistry. Moreover, the available coursebooks often present the material in a schematic way; they seem to lack stimulating texts and motivating practice activities.

I have been teaching English to the students at the Faculty of Chemistry for seven years and to provide my classroom with movement and diversity I have designed the collection of activities described below. The aim is twofold: to enrich students' vocabulary connected with chemistry and to practise their speaking skills. The level of difficulty ranges from A2 to C1 as described by Common European Framework (CEF). Although the techniques are not always innovatory and do not provide practice for every topic to be covered during the course, I hope they can set an example of how any ESP teacher can make their course more challenging. And this can be considered as one of the most important steps towards students' success in learning English – also English for Specific Purposes.

1. Chemical elements

Have you ever tried learning chemical elements in English? This might seem a strange question, but it clearly illustrates the level of difficulty that students encounter when starting to learn terminology in chemistry. There are more than a hundred chemical elements known so far; most of which have names similar to the Polish ones to a certain degree. As a result, students experiment with both the pronunciation and the spelling, trying to guess the name of the required element,

and, needless to say, they often make mistakes. Trying to find a solution to the problem, I realized they need more practice; every teacher knows that the more exposure learners have to a new word, the better they remember it, and the fewer mistakes they make. But the trick is how to get them to hear the names of the elements more often without the boredom of monotonous drills.

1.1. Element Bingo

Level: A2–C

I recognised the role of fun in teaching English a long time ago. To start with I decided to use well known game-drills. My first choice was 'Bingo'. I adapted that simple game, usually played with children, to the needs of my students. First I had to clearly define the list of chemical elements I wanted to practise: twenty-five to thirty at the most. I asked my students to draw a simple grid with six empty squares (Fig. 1). Then I instructed them to fill in the squares with six chemical symbols chosen from the list (not full names!). Finally I briefly reminded them of the rules.

The teacher reads the names of elements from the list at random; when the student hears the name of the element written in his grid, he crosses it out. When all the six symbols are crossed out, he shouts „Bingo!". The first student to do so is the winner. The game can be repeated two or three times.

What do I expect to achieve with this game? It provides students with additional exposure to the names of the chemical elements correctly pronounced and, which is also very important, it teaches them to associate an English name with a chemical symbol – a skill vital for chemists. The reaction of my students encouraged me to follow that direction in looking for different ways of teaching professional vocabulary. They clearly had fun and enjoyed the sense of competition. What is more, they did not dismiss the game as childish, something I had been concerned about.

1.2. Element puzzles

Level: B1–C1

The next activity I want to describe requires some preparation on the part of the teacher before the class.

The teacher should choose four elements – neither well-known ones like carbon, nor more obscure ones like thorium. He prepares descriptions of these elements (the Internet is of great help here!), including such basic information as the atomic number, atomic mass and both physical and chemical properties. Students work in groups of four, and each of them gets a different text from the teacher. Each student reads his description silently and then chooses the three most important (to him) pieces of information, creating his „puzzle". The other players' task will be to guess which element is being described.

The students should be encouraged not to make their puzzles too easy and obvious for the other players in the group. I set the time limit for this activity, e.g. seven minutes. Then the students tell their puzzles to the others in the group. If a puzzle is too difficult, the student might add one or two more pieces of information to give the other students a chance to guess it. The exercise can be repeated several times throughout the term, provided the teacher chooses a different set of chemical elements each time.

2. Chemical reactions

Level: B1–C1
Another exercise connected with the elements focuses on students' ability to read chemical reactions in English. I prepare little cards with names of highly reactive chemical elements printed on them, such as carbon, hydrogen, oxygen, sulphur, calcium, etc. (Fig. 2) and give each student a card with one chemical element. Students move around the classroom looking for elements that can react with theirs. For example, when a student with 'hydrogen' comes across someone with 'oxygen', both of them should write a chemical reaction and – which is very important – read the reaction aloud. Then they continue to look for other reactants, separately or together if they want to find a third element that both their elements can react with.

When the teacher announces the end of the activity, the student who has the greatest number of reactions writes them on the board and the teacher points to individual students to read them aloud.

3. Chemical compounds

Level: B1–B2
With advanced learners the teacher can assign more difficult homework, treating that as an introduction to the next class. At home students should prepare short three-minute speeches about a chosen group of chemical compounds, for example lipids or alcohols. In class they work in pairs. Each of them presents their speech (mini-lecture) to their partner, who should take brief notes and try to remember as much as possible. When both students have finished, they ask each other five (difficult!) questions, checking how much they remember. There is one point for each correct answer. The winner is the student with the most points.

4. Laboratory equipment

Level: B1–C1
What else should every chemist know? Obviously he/she must be able to label the basic equipment in a laboratory. Having introduced such words as U-tube, separating funnel, air lock, mortar, pestle etc, usually with the help of a pictorial dictionary, I still need to provide further practice, since this vocabulary is not easy to remember.

In advance I prepare a set of cards, each with a picture of a piece of equipment from the laboratory. There should not be more than twelve of them in a set. Students play the game in groups of four and each group gets one set of cards. They place them face down on the desk. The first student chooses a card, shows it to the others and names the object in English. If he is correct, he can keep the card; if he gets it wrong, another student can win the card by giving the correct answer (Fig. 3).

There is one student in each group, called 'the instructor', who is given the whole set of pictures with captions and, preferably, with the pronunciation. 'The instructor' helps when nobody can come up with the correct answer. The student who has most cards at the end of the game is the winner.

5. Chemical experiments

Level: B2–C1
When students are acquainted with the basic vocabulary used in a laboratory, they should move to the next stage, that is, describing a chemical experiment. I usually introduce the subject bringing an extract form a scientific publication, the experimental part. Students learn such expressions as "place the solution in a separating funnel", "dilute with water", "transfer the solution thus obtained to...", "adjust the pH of the solution to..." (Domański, 1996: 94) and many other useful phrases. Then I ask the students to work in pairs and describe an experiment they have recently carried out. They are asked to write each step on a separate line.

When this activity is completed, I distribute pairs of scissors and ask the students to cut their descriptions into thin strips, which they then mix up and swap with another pair of students. Their final task is to put the sentences received from the other pair of students in the correct order, remembering that the wrong sequence could result in an explosion...

The authors of the descriptions check the final version.

Conclusions

The game-like activities described above suggest how the teacher might transfer well known techniques to different contexts – teaching ESP. I started to appreciate them only when I had become a little bored with traditional methods of teaching chemical vocabulary, like the analysis of a scientific text with questions, clozes, true/false statements, etc. I do not dismiss these, since I still regard them as a vital component of any ESP course but, in my opinion, lessons can be considerably enriched by activities which bring variety and fun to learning English.

Bibliography

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Appendix

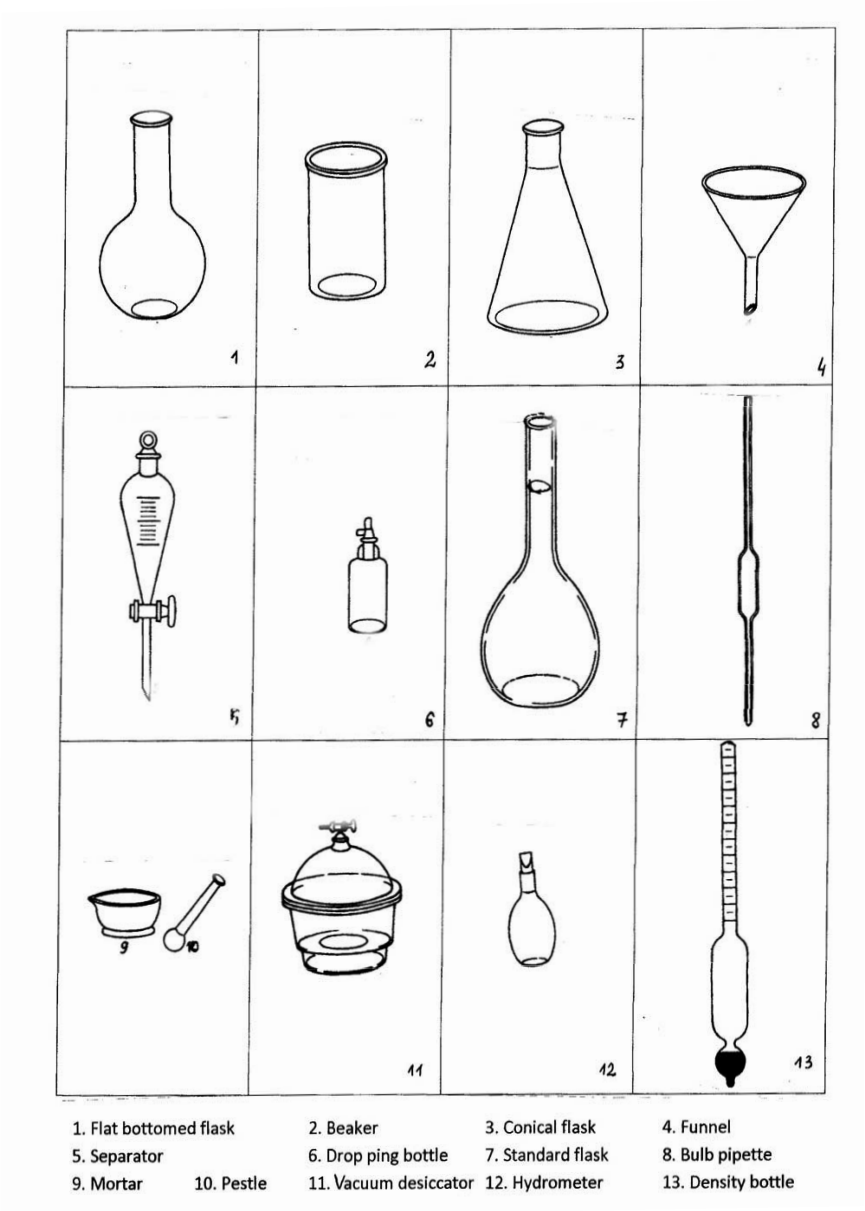
Figure 1

Cu	Fe	H
Pb	Na	Cl

Figure 2

Carbon	Hydrogen	Oxygen	Sulphur	Calcium
Carbon	Fluorine	Oxygen	Chlorine	Copper

Figure 3



Drawings for this set of cards were copied from Domański 1996: 275–277