

Testing English for Specific Purposes in Science (TESPIS) and EChemTest Centres

Walter Zeller

E-mail: astyle@aon.at
Astile linguistic competence (Austria)

Abstract

Former EU projects created language courses and consequently they created examinations to evaluate the students' performance after they had completed such courses. These examinations, however, do neither reliably distinguish between the language levels B2 and C1, nor do they reflect the needs of linguistic skills in industry to the extent that they should. With all these ideas and experiences as the background, however, the idea of "Testing English for Specific Purposes in Science" (TESPIS) came into existence. The main targets of this project are: - Define the language levels based on the Common European Framework; - Assess the difficulty of a text electronically; - Test the candidates in their reading, listening, writing and speaking competences; - Elaborate guidelines for developing B2 and C1 ESP examinations for future examiners. The co-operation with European Testing Centres for evaluating knowledge and skills in chemistry will lead to an increased use of both examinations: TESPIS examinations and the eChemTest. The eChem Test is an electronic test developed by the European Chemistry Thematic Network Association, and aimed at evaluating knowledge and skills in chemistry at three different levels. As the EChemTest sessions are offered under controlled conditions in fully equipped Testing Centres, TESPIS may join these activities. The Centres are awarding the relevant ECTN European Chemistry Certificate and could, as a future perspective, award the TESPIS examination certificate.

1. Introduction

Samuel Johnson once said, "Language is the only instrument of science, and words are but the signs of ideas." As a conclusion what could be more rewarding for language teachers than to have scientists as students in their classrooms. In real life it sometimes turns out to be different, but here we are not discussing the role and suffering of language teachers in the classroom. We rather prefer to discuss how the success of teaching chemistry and language teaching in particular can be assessed objectively. This represents the main task of the project "Testing English for Specific Purposes in Science", abbreviated to "TESPIS".

Testing the scientific knowledge of students objectively is an important issue for guaranteeing the employability of people who are about to be awarded a diploma degree or for finding out whether a candidate is fit to take part in any of the mobility programmes offered by the EU or by other countries, resp. educational institutions. For this purpose the echemTest was developed in the past years. The test comprises a treasure trove of questions in chemistry. These multiple choice questions were attributed to a certain level and/or field of chemistry. In the actual test situation they appear randomly on the screen at the right level of difficulty and in the desired field of chemistry, such as organic or inorganic chemistry. After having gone through a series of questions the candidate, the employer or educational institution receives an immediate feedback and the decision for a mobility project or for granting the candidate a new position in a company, can be taken immediately.



2. How could it happen that all these projects have merged?

The eChemTest, one of the products of the European Chemistry Thematic Network Association (ECTN) project, was the first of a series of projects which now have become an ensemble. “English for Specific Purposes: Chemistry”, or ESP:C, followed. In this project a language course was created targeted at chemists whose native language is not English. ESP:C received a sister, called ESP:T, a course specifically made for therapists. Another project propagating virtual campuses, in this case for conservation scientists, was also created and this project “received” an English course tailor-made for conservation scientists.

When all these language courses were created, it became clear that the pedagogical endeavours had to be assessed in a way that guarantees objectivity. The challenge was great to achieve this target and TESPiS was created and finally granted support by the authorities in Brussels in 2008. The project concerned with the development of “eChemTest Centres” were rewarded with an approval one year later. It probably does not need further explanations why these projects with common interests support each other by co-operation and exchange of ideas and experience.

3. The TESPiS objectives

To formulate the objectives of TESPiS is a simple task. It would read “Test the candidates’ linguistic performance objectively and scientifically taking into consideration their professional needs and their language level”. However, how can one achieve that? And with this question the problems begin.

Language is certainly not a field of logic with set rules and regulations. Language is a living, ever-changing part of human life with certain conventions and with its purpose to communicate facts, feelings and even foul thoughts. “Language is the source of misunderstanding” as Antoine de Saint-Exupery phrased it. At the same time Cato the Elder already recognised that “Grasp the subject, the words will follow” and which scientist would have known the words for his or her discovery/theory or whatever you may call it before he or she had the idea of the new scientific concept. How can one grasp such intangible matters then?

First of all, in the last decades the Common European Framework of Reference for Languages: Learning, Teaching Assessment (CEFR) has been developed, one of the most helpful tools of “measuring” language. It defines 6 different language levels. A speaker may be able to order a meal in the target language, but not be able to complain that the vegetables are not salted and still hard. Another speaker may be able to discuss highly complex chemical process or therapeutic methods in the target language over a nice meal. We, who work with assessing language, may say that the first speaker has reached level A1, the second speaker should perhaps be ranked at the level C2.

TESPiS took these definitions and studied them carefully as a first step. As the next and most difficult step it became necessary to adapt these definitions so that they describe what a chemist, conservation scientist or therapists needs in his or her professional world. As soon as these definitions were ready, the first examinations could be carried out and assessed. Naturally, it turned out that these first trials of defining “objective language levels” were not completely satisfactory. Thus the process of improving the wording and making the phrases more comprehensible to a wider range of examiners became obligatory. Probably this process will never end, but at the same time it appears that a final and valid version has been achieved.

4. The design of a TESPiS examination

TESPiS offers examinations for 3 subject areas at the moment: chemistry, conservation science and therapy at the levels B2 and C1. It has proven in the meantime that the need for C1 is very limited



whereas it could be stimulating for some professionals to start on an easier level and then continue with a higher one.

A TESPiS examination has four parts: Reading, Writing, Listening and Speaking. The candidate completes the 3 parts, Reading, Writing and Listening, during one long morning or afternoon. The order of these parts is of no real importance but it shows that beginning with "Reading" the candidates get used to the foreign language; "Writing" usually represents the most challenging part and it certainly is the longest of them. "Listening" is the shortest and usually comes at the end. "Speaking" requires a totally different setting.

What are the 4 parts all about?

4.1 Reading

So far we have used three different texts for each examination and level. The candidate should be able to understand the texts in detail but should also be able to read for the gist. Instructions, articles and reports are the main text types because these are the most likely ones you find in the professional world.

As task types we take cloze tests, finding the best heading or the best sentence (always together with a distractor) or true/false questions, whereby the candidate must not only give the right answer but indicate in which line of the text the answer can be found.

When designing a B1 text, it has turned out that it might be necessary to use several texts because at this level the candidate is not yet able to comprehend longer and more complicated sentence structure. The easier a text, the more it is necessary to deviate from authentic material and "doctor" the original, however slightly that may be.

The allocated time to this part is one hour for all levels.

4.2 Writing

Writing consists of two parts: the first part is a highly directed piece; usually it is an e-mail. The candidate receives an e-mail or message from a colleague or friend to which s/he has to reply and give clear answers to the four or five points, often added in hand-writing. It can also be that the candidate shall answer to this mail from friend and then write a longer text to another person mentioned in the e-mail. This allows us to test formal and informal language.

The second part is less guided. A personal statement or opinion about a topical issue of the subject area is expected from the candidate.

The number of words expected from the candidate depends on the level. A short mail to a friend might only be 50 words long on level B2. Part 2 should contain some 200 words at level C1. As the candidate of level B1 is only expected to convey messages of a simple nature, four or five different parts are necessary and not all of these messages need to be written in full sentences.

The allocated time to this part is 1.5 hours for levels B2 and C1.

4.3 Listening

"Speaking" consists of two parts again: Part One is a lecture and Part Two a dialogue. Often one of these parts is paraphrased and words which are said are left out and have to be filled in by the candidate. The other tasks are similar in nature to "Reading".

Both the texts are repeated and have a length of approximately five minutes each. Hence the time needed for this part of the test is approximately 35 minutes including the time for the candidates to fill in the Answer Sheet.



4.4 Speaking

In Speaking two or three candidates are assessed at the same time. An interviewer moderates the candidates' responses and an assessor listens carefully to what is said.

In the introductory first part the candidates are asked personal questions to warm them up and make them used to the examination. For Part Two the candidates are given task cards giving them a topic about their subject area. They have either one minute to prepare for this “speech” (level B2) or two minutes (level C1). After each candidate has given this speech, the partner must ask a question. The candidates are expected to speak with each other about a topical issue in their subject area. Ideally, it should be an authentic discussion between the candidates only so that their communicative competence can be tested. In reality it may turn out that a candidate below the level is not able to lead a discussion competently. In this case, the interviewer must step in to give the candidates the opportunity to show their linguistic competences properly.

With two candidates present “Speaking” lasts (approx.) 14 minutes at level B2 and (approx.) 18 minutes at level C1.

4.5 Assessing

It might not be obvious to everybody that such examinations do not need any corrections but only assessment of the candidates. For each part the candidate can receive a maximum of 25 points and as we set the level of a pass at 60% (= 15 points) the total number of points also gives the percentage of the pass.

Assessing for “Reading” and “Listening” is really simple. Only one correct answer is possible, so the number of correct answers is added and the points are given “objectively”.

Assessing “Writing” and “Listening” requires experience by the assessors. The descriptors help to define the candidates' performances reliably, but certainly the human factor counts more than when dealing with a simple “True/False” test. Therefore TESPiS made use of the same descriptors obligatory and that two assessors assess the candidates' performances. As soon as a discrepancy of point in the assessment shows a third assessor must take the final decision.

When the number of points adds up to 60, the candidate has passed the TESPiS examination and receives a certificate. Candidates “have passed with distinction” when they reach 90%.

5. Examination Rules

To assess in the same way internationally requires clear rules which does not only mean that all candidates must switch off their mobile phones and must not talk during the examination – for all these details the candidates receive a notification before the examination. It must also be clearly said how many examiners must be present during the written part and during the speaking; it will also help when a list of the “Do not forgets” is provided.

6. Future co-operations and developments

In the meantime the eChem Test has been translated into several European languages but the original questions were all in English. Consequently, the first question that arises is whether these questions can be used in language testing, as well. However, how can one define the language level of a short question? Must the question only be understood or also be answered? Are we testing language or chemistry and to combine the two will probably not be possible.

Testing centres for the eChem Test already exist. Can TESPiS use the same centres and create online examinations for them? Online examinations have the advantage that certain types of questions are immediately analysed by the computer and results become available. At the same time the



assessors of Writing need not struggle with the handwriting of some candidates and have beautifully typed answers in front of them. These testing centres will also guarantee that the candidates do not find leaks into the internet world.

In many university degree programmes language examinations have become obligatory. Usually a B2 level is required for bachelor or master studies with a tendency for C1 for the Master's diploma diploma. On the other hand it has been found that not everywhere is the level of English high enough to enter a B2 examination. In other words it shows, that B1, B2 and C1 are the language levels which are relevant for testing English as required by professionals.

Testing centres can be run by the respective educational institutions; creating examinations is not yet a job paid by the state. Therefore it will be necessary to commercialise TESPiS and charge a fee from the candidates which will be as high as all the other institutions that offer internationally recognised examinations.