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WORDS AND SYMBOLS IN ELECTRICAL MARINE TERMINOLOGY TEACHING (A CASE STUDY)

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Abstract:*The Case study started from the necessity of teaching the electrical marine terminology as quickly as possible. The electrical and electronic terminology is not very resourceful; the process of teaching it can be sometimes slow and dull and many students lose interest when they still have long to wait until going on voyages, where they are supposed to understand and use the terminology. The case study involved two groups of students studying English electrical terminology. One group was taught using original texts that they were encouraged to read and translate, do vocabulary tasks or exercises in order to understand and learn the vocabulary. The other group was taught using the visual prompts, mainly symbols of the electrical objects and systems that can be found on board ships. The differences in terminology acquisition between the two groups and the students' reactions towards the two methods of teaching are presented in this case study.*
Key words*: electrical terminology, symbols, ESP, teaching*

Introduction

Teaching English for Specific Purposes (ESP) or in our case English for Academic Purposes (EAP) involves some characteristics of the teacher, students and material taught. First of all, the teacher should try to permanently develop new methods of teaching, or as Gebhard observed a teacher needs to self-develop. (Gebhard; 2006) In the book with the subtitle A Teacher Self-Development and Methodology Guide, the author depicts the following central factors for teacher self-development: being concerned with student learning, beingcommitted, solvingproblems, exploring for exploration's sake, paying attention and reviewing the basics of teaching, searching out opportunities to develop and cooperating with others. (Gebhard; 2006) Part of these factors are important, in our opinion, for every teacher but especially for ESP teachers, who are supposed to go sometimes beyond the English teacher knowledge and willingly or not step into specialty. Although we have been teaching for a long time, we are still concerned with the student learning, solving problems and exploring new trends sometimes just out of curiosity. That is how and why we decided to try developing new materials for teaching our students English for special purposes. This case study is centered on materials and tests designed for marine electrical engineering students.

Method of research

The electrical and electronic terminology is not very resourceful; the process of teaching it can be sometimes slow and dull and many students lose interest when they still have long to wait until going on voyages, where they are supposed to understand and use the terminology as part of their job. Starting from this rationale we decided to use two different groups of students in the same year of study for an experiment based on different methods of teaching the same curriculum. The case study involved thirty people studying English electrical terminology. One group was taught using mainly original texts that they were encouraged to read and translate, do vocabulary tasks or exercises in order to understand and learn the specific terminology. The other group was taught using mainly visual prompts, symbols of the electrical objects and systems that can be found on board ships.They were also exposed to English texts, although the main point of teaching was to understand the connection between the object represented by a picture or a drawing and the corresponding English word. Various symbols were also used as the students' future job implies reading and understanding electrical diagrams on board ships. After one term of using different methodology for the two groups, a multiple-choice test was designed for each group according to the way of teaching. The testing of each group offered the chance to evaluate the two methods of teaching in comparison and find out which one proves to be the best for the future needs of our students.

The first multiple-choice test has 60 items: 50 items of specialty and 10 items of word formation including suffixes, prefixes and compounds. The fifty specialty items were designed using specific marine electrical terminology. Except for two items with multiple answers specified in the test, the

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other items have only one correct answer.Here are some examples of items:

1. The safety of passengers, crew and ship from electrical…….is to be assured.
a. emergencies b. hazards c. services d. sources

2. Which of the following services are NOT considered necessary for minimum comfortable conditions of habitability?
a. domestic refrigeration b. fresh water
c. mechanical ventilation d. cooling water

3. A '…….' is an assembly of one or more protective devices arranged for thedistribution of electrical power to final sub-circuits.
a. section board b. distribution board
c. switchboard d. switchgear

4. Which answer is **NOT** correct: ……is to be inserted in an earthed conductor.
a. no fuse b. non-linked switch
c. no conductor d. non-linked circuit-breaker

Word-formation items include inexistent words or terms formed with prefixes, suffixes that should be spotted by the student, such as 'jogness':
Which is **NOT** a correct noun made with a suffix?
a weakness b darkness
c readiness d joggness

As we have mentioned above there are two items involving translation with more than one correct answer:
Choose the correct English translation for the following words (more than one answer is possible):

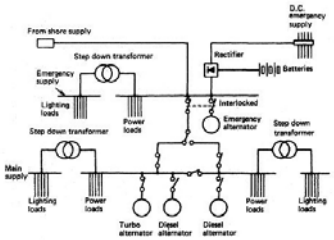
1. izolator
a. isolator b. rubber
c. insulator d. stress

2. conductor
a. conductor b. conduit
c. duct d. wire

The first item has two correct answers a and c while the second item has all four answers correct although, as we know there are no perfect synonyms.

The second multiple-choice test, applied to the students that were taught mainly by using visual prompts, has the same number of items and the same structure, however, only the word formation items remained unchanged. Fifty items were transformed into a picture test. It is not an easy endeavor to design a test based on images, especially for a specific terminology like marine electrical engineering. It is even more difficult to develop a picture test to have the same items as a traditional one. In order to make the comparison between the two methods we considered that was the best possible way. For some of the items we used symbols and pictures of words in a suggestive way (in our opinion) or as they can be found on board ships. Here are some examples of picture items corresponding to the items using words for multiple-choice:

1. The safety of passengers, crew and ship from ……. is to be assured.

a. 

b. 

c. 

d. 

The correct answer for both number 1 items is b.

2. Which of the following services are NOT considered necessary for minimum comfortable conditions of habitability?

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a. 

b. 

c. 

d. 

The correct answer for both number 2 items is d.

3. A ……. is an assembly of one or more protective devices arranged for the distribution of electrical power to final sub-circuits.

a. 

b. 

c. 

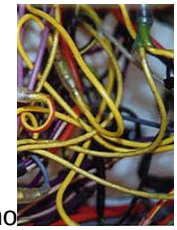
d. 

The correct answer for both number 3 items is b.

4. Which answer is NOT correct? ……..is to be inserted in an earthed conductor.

a. No 

b. non-linked 

c. no 

d. non-linked 

The correct answer for both number 4 items is c. Examples of other items that are a combination of pictures, symbols and words are the following:

A ……. is a voltage exceeding 1000V a.c. or 1500V d.c. between conductors.

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a. 

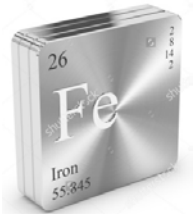
b. 

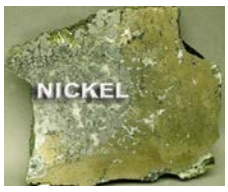
c. 

d. 

Earthing conductors are to be of ……. or other corrosion-resistant material.

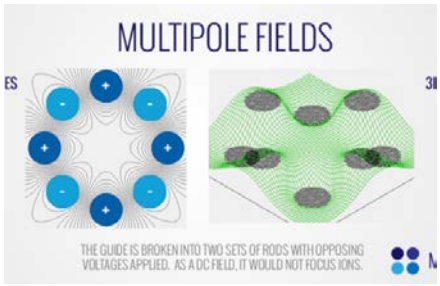
a. 

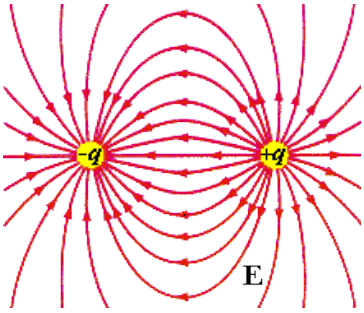
b. 

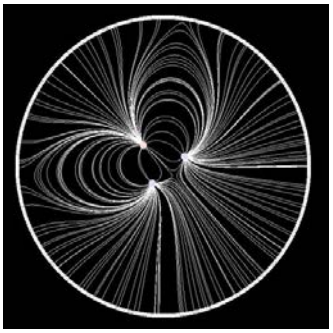
c. 
d. 

In the case of generators rated at less than 50kW, a…….linked with a fuse will be acceptable.

a. 

b. 

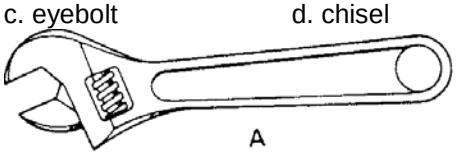
c. 

d. 

Another type of combination between a picture and a multiple-choice item with only one correct answer, i.e. a, is the one given below:

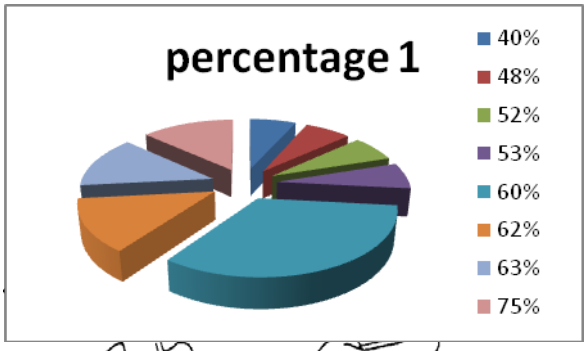
The tool in the picture is a…….

a. wrench b. vice
c. eyebolt d. chisel



Results

The 15 students from one group sitting the first test had results that started from 24 to 45 points out of 60. A diagram showing their results in percentage is shown below.



The greatest number of students, five (the big chunk of blue), got 60% of the test right. That means that they failed to recognize in a way or another 40% of the terminology if we consider that the test covered the necessary specialty vocabulary to be known including word formation.

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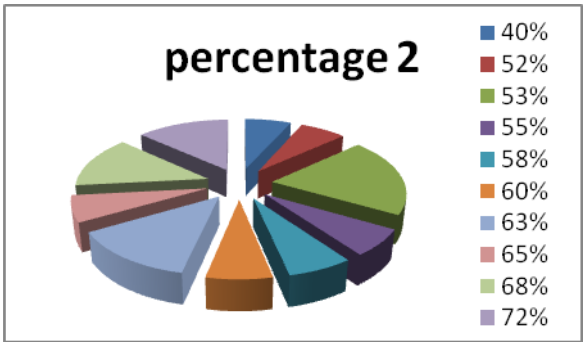
However, 13 of the respondents got results over 50% which meant a passing mark with half of the terminology learnt.

The second group of 15 students taking the picture test got results starting from 24 to 43 points out of 60. The corresponding diagram of percentages is shown below.



The second chart looks different because one percentage is shared by no more than three students and this is the case for 53% while for 63%, 68% and 72% there are two students that can share the same result. The lowest percentage is the same but the next percentage shows that the student acquired more than 50% of the terminology right. In comparison to the first test the second one stops at 72%, which means a bit lower. If we try the same rationale we will find out that only one student did not pass the test, and generally speaking there are better percentages showing better knowledge.

Conclusions

The picture test is an experiment made in order to evaluate a method of teaching or learning based mainly on images and symbols. According to the results there is not a very big difference between the knowledge acquired in the traditional way and those acquired using pictures. The student needs to make the connection between the realities of his future job and the English concept. In our opinion the only way of connecting the theoretic concept to the real one is by using visual materials of all kind, starting with pictures and symbols and going on to documentaries on the internet, if we can have access at technology for the whole group. However, the test could be also used for distant learning evaluation so that even the students that are in voyages can study and be evaluated as fair as their colleagues because the test should be rendered at a computer. The students' feedback at the end of the term was neither totally for nor against the picture course and test. Half of the students being taught using images complained that the pictures in the test had been confusing and that the best way of evaluating the specialty terminology would be by using the pictures and the words at the same time. Our opinion after this experiment is similar to that of our students; perhaps the most useful method of teaching and evaluation for specialty in English would be a combination of images and words. The final tests should also combine more types of items, not only multiple-choice, in order to involve the students like a game and make them also thing not only use their memory.

Bibliography

[1] Basturkmen, H., Ideas and Options in English for Specific Purposes, Taylor & Francis eLibrary, 2008.
[2] Current Issues in Second/Foreign Language Teaching and Teacher Development: Research and Practice, edited by Gitsaki C., Alexiou, T., Cambridgr Scholars Publishing, 2015.
[3] ESP in European Higher Education.Integrating language and content.edited by Fortanet-Gómez, I., Räisänen, C., John Benjamins Publishing Company, 2008.
[4] Gebhard, J. G., Teaching English as a Foreign or Second Language. A Teacher Self-Development and
[5] Methodology Guide, University of Michigan Press, second edition, 2006, p 8-10.
[6] Huchinson, T., Waters, A., English for Specific Purposes, A learning-centred approach, Cambridge University Press, Seventh printing 1992.

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