CAN MY STUDENTS DRIVE CARS? TEACHING ESP TO SPANISH STUDENTS USING SWALES' MODEL FOR RA INTRODUCTIONS

Meus Alunos Conseguem Dirigir 'CARS'? Ensinando Inglês Instrumental para Alunos de Espanhol através do Modelo de Swales para Introduções de Relatos de Pesquisa

> Elisa Ramón-Sales (University of Murcia) Pilar Aguado-Giménez (University of Murcia)

Abstract

Spanish university students face a lot of difficulties when reading research articles in English. In particular, Librarianship students from the University of Murcia, Spain, encounter many problems when identifying and classifying those research articles. This paper aims to present a proposal to enable these students to relate language learning to the task of cataloguing research articles (RA) written in English, using Swales' CARS model and inferring specific characteristics that papers from different subjects have in common. The results show a particular pattern of moves and steps that can be drawn for specific disciplines by means of the language used.

Key-words: research articles (RA); English for Specific Purposes (ESP); English as a Second Language (L2); language learning; genre analysis.

Resumo

Alunos universitários de espanhol enfrentam muitas dificuldades quando lêem relatos de pesquisa em inglês. Em particular, alunos de Biblioteconomia da Universidade de Murcia, Espanha, têm muitos problemas quando precisam identificar e classificar esses relatos de pesquisa. Este artigo tem como objetivo apresentar uma proposta para capacitar esses alunos a relacionar a aprendizagem da língua à tarefa de catalogação de relatos de pesquisa escritos em inglês, utilizando o modelo CARS de Swales e inferindo características específicas que

artigos de diferentes assuntos têm em comum. Os resultados mostram um padrão particular de movimentos e passos que pode ser elaborado para disciplinas específicas por meio da linguagem usada.

Palavras-chave: relatos de pesquisa; Inglês Instrumental; Inglês como Segunda Língua; aprendizagem de línguas; análise de gêneros.

1. Introduction

As English has become the universal language for science and technology, Spanish university students from different degrees have to face the task of reading numerous documents in English in order to keep up with their studies. Many times this task is made more complex by the students' need to browse through many scientific publications to obtain the ones most closely related to their purposes.

After several years of teaching English as L2 to university students of the School of Librarianship – now the Faculty of Information Science – we have become well aware of the difficulties these students find when they are facing this type of texts. It has also become evident that certain types of reading strategies must be developed if we want students to improve their reading comprehension of specialized academic texts.

This paper aims to present a proposal enabling librarianship students to (i) infer or guess some common linguistic characteristics in RA from their introductions following Swales' CARS model (Create a Research Space, CARS from now on) (1990); and (ii) use this specific language as a tool to help them classify the research articles by subject matter.

Specialization is a major feature of science, and the significance of scientific classification is widely recognized by researchers as can be seen in Langridge's work (1992). In any field of study, theoretical or practical, there is a need for a classification of objects, either concrete or abstract. This need for classification and how to do it properly is

especially relevant to librarianship students because they have to allocate documents in the appropriate places or shelves.

In the same way that a specialist looks at a document to search for relevant information, so the librarianship student must be able to decide what constitutes the core of a document. Also, he/she will have to reach that information quickly when he/she has the purpose of classifying it. We can say that research articles and other documents may be classified – among others – as physical objects, according to intended readership, by the author's point of view, or by subject matter.

Langridge (1992:29) shows that some problems may arise in the classification of documents:

Documents may be classified according to intended readership. This form of presentation gives rise to the greatest confusion between subject and form. With such titles as 'Statistics for engineers' or 'Psychology for nurses' it is easy to see how the mistake is made. It is wrong, however, to say that these books are about engineering or nursing. They are about statistics and psychology. The qualifications 'for engineers', 'for nurses' do not affect the subject matter; they merely indicate the treatment of the subject or selection of examples are carried out with the special requirements of engineers or nurses in mind.

These types of titles are also misleading for our librarianship students. Therefore, they must rely on some clues that would help them to better understand the contents of the English texts they have to deal with in their work. If librarianship students have to classify documents according to the author's point of view, another problem arises because sometimes it is difficult to identify them by just reading the title:

The main difficulty is knowing how far to go since every book may in some sense be said to have a point of view. Unless this is made clear in the title (which is rare) it is difficult to identify. (Langridge, 1992:30)

One of the main tasks librarianship students have to carry out is to classify documents by subject matter. It is here where their main problems and difficulties arise due to the handicap that the English language represents for them. Therefore, the interest in genre analysis as a new tool for teaching a foreign language has been motivated, as Holmes (1997) says,

By pedagogical concerns, in particular by the need to provide satisfactory models and descriptions of academic and scientific texts and to enhance the ability of non-native speaker students to understand and, where appropriate, to produce them.

Therefore, if we are to help the majority of our librarianship students to become familiar with English written texts in order to classify them by subject, we must develop in these students an awareness of how genres and registers work. Texts such as research articles can be included in a genre, in fact a genre of its own which, according to Swales (1990), is continually evolving. On the other hand, students must also know that:

Essentially, register refers to the way English varies according to the situation in which it is spoken or written. Register is the means by which a situation is analyzed so that it can be expressed through language. This means that register reflects what is being spoken or written about, who is being spoken or written to and how the message is given. These three aspects of a situation are termed field, mode and tenor. (Littlefair, 1991:9)

The texts chosen for this paper are authentic articles which deal primarily with scientific and technical topics taken from journals and magazines written in English which are intended for specialist readers. The main reason for focusing on texts with this type of content is as follows:

- The texts chosen show the typical features of scientific prose and genre as well as formal academic writing in English.
- The texts prepare the student for the kind of reading they will need in future work.
- The texts chosen make many demands on the students, not only linguistic but also intellectual ones because of the wide

variety of the topics. For example, by reading research articles from other subjects related to the fields of Library Science.

 Using this real reading material, the students can learn the language in a contextualised setting while they establish a relation between the language they learn and their broad/main area of study, Librarianship.

So, if the source of the material studied is going to be scientific articles written in English, it will be useful if our students become aware, as Widdowson (1979) says, that scientific English exhibits a relatively high proportion of certain syntactic features and a relatively low proportion of others, which may be useful for identifying the subject and content of scientific English texts. On the other hand, Swales (1981), when analysing research article introductions suggested that the series of parts which he calls **moves** occur in a predictable order. Years later, after Dudley-Evans (1986) investigations and Crookes' criticisms (1986), Swales (1990) modified his model reducing it to three **moves** and several **steps** in each move, which he presents in the **CARS** model.

We must not forget that language can be rather obscure and impenetrable when a great amount of technical terminology is included, especially if it is not from one's own field of work. Therefore we will have to help our students not to be overwhelmed by strange words and figures but instead to look for those syntactic features that are the key to their questions.

2. Materials and Methods

A corpus of 60 introductions of research articles from different subjects have been chosen at random for the purpose of this paper. They have been published in scientific journals of six broad fields of study: Medical Sciences, Bio Sciences, Library Science, Economics, Language and Literature, and they are cited in appendix 1. All the introductions were studied and analysed in terms of Swales CARS model, trying to locate the different moves and steps that occurred, as well as the linguistic structures or patterns (mainly syntactic and lexical) that characterize

these segments of text (The structure of the introduction usually follows a certain pattern which in a problem-solution model (Zappen, 1983) will show the goal, current capacity, problem, solution and criteria of evaluation, which later on will be developed by Swales (1990) with his theory of moves and steps).

After having studied the characteristics of the 60 articles chosen at random from the different areas mentioned before, the following results were obtained. These have been classified according to the following parameters:

- 1. Rate of occurrence of the different moves and steps in all the RA introductions.
- 2. Linguistic characteristics in each move (and/or step).
- 3. Patterns hypothesized to find a way to clarify the students' identification and classification of articles.

(See table 1)

	MOVE 1			MOVE 2				MOVE 3			
STEPS	1	2	3	1A	1B	1C	1D	1A	1B	2	3
Medicine	4	5	2	3	2	2	9	6	6	3	_
Veg.Physiology	5	6	3	6	_	1	5	8	3	1	_
Economics	4	5	3	8	3	_	2	10	4	3	4
Librarianship	5	5	6	2	5	3	4	6	8	2	2
Language	4	5	4	2	6	1	4	7	6	_	4
Literature	3	7	1	3	3	1	1	5	2	2	_

Table 1: Rate of occurrence of the different moves and steps in the overall introductions of RA¹

¹ The figures in each box represent the number of articles which offer a specific step in their introduction.

From table 1 we can see that *move 1* is always present in all the groups, at least in some of the articles of each group. *Move 2*, *step 1B* does not occur in Vegetal Physiology introductions. This also happens with *move 2*, *step 1C* from Economics, *move 3*, *step 2* from Language, and *move 3*, *step 3* from Medicine, Vegetal Physiology and Literature. Every move and step is always present only in Librarianship articles.

Let us study in detail the linguistic features each move presents in the different subjects referred in the RA.

Move 1: Establishing a territory. This move can be achieved through different steps:

Step 1: Claiming centrality. As Swales (1990:144) says,

Centrality claims are appeals to the discourse community whereby members are asked to accept that the research about to be reported is part of a lively, significant or well-established research area.

Swales proposes a set of linguistic examples that characterize this step. Present tense (both simple and perfect forms) and a set of lexical items related to the fields of 'importance', 'topics' or 'research', together with some temporal adverbial connectors are commonly used when dealing with this step. In the introductions we have studied, we find examples², among others, such as:

Antibodies against synthetic peptides are reliable probes for studying protein structure as they have frequently been found to cross-react specifically ... (Med #1)

Plant response to salinity is one of the most widely researched subjects in plant physiology (Veg #3)

In recent years the 'applied turn' in critical theory has gathered pace (Eco #3)

² From now on, all the examples will be referred to using the field of study to which they belong, combined with their reference number, quoted in appendix 1. So Medicine will be "Med", Vegetal Physiology "Veg", Economics "Eco", Literature "Lit", Language "Lan" and Librarianship "Lib".

Step 2: Making topic generalizations. In this step, statements about "Knowledge or practice, or about phenomena" (Swales, 1990:146) are usually found. *Simple present* again is the verbal tense mostly used, and references to *procedures*, *knowledge* and other general statements are usually referred. In the articles studied, we have found:

In a Very Fruteful and Pleasant Booke Called the Instruction of a Christen Woman, Juan Luis Vives, tutor to Princess Mary, firmly announces that he need give no 'precepts' about evil effects of books 'of war and love' –the genre that we call romance. (Lit #6)

Marketing has been defined by the Chartered Institute of Marketing as the 'management process which identifies and keeps selected customers efficiently and profitably'. (Lib #9)

Interlingual identification of similar sounds with their native counterparts was found to limit the degree to which learners approximate a foreign language, because it prevents them from 'making effective use of the auditorily accessible acoustic differences'. (Lan #1)

Step 3: Reviewing items of previous research. As Swales (1990:148) says, 'The third step in establishing a territory is the review of one or more items deemed by the authors to be relevant to that establishment'. *Passive voice* and the *past tenses* are commonly used in this stage of the CARS model. In the RA introductions studied, we found, for instance:

In a previous publication we reported the purification of thehalase from *Saccharomyces cerevisciae*. (Med #10)

In another influential study, Beniger located the origins of the 'information society' in some economic and technological developments of the nineteenth century. (Lib #1)

Yet Burke and Vico investigated many of the same problems and reached many of the same conclusions, ... (Lit #9)

Move 2: Establishing a niche. Swales (1990:154-9) states different linguistic signals which can characterize this move: *Negative quantifiers, adversative connectors, lexical negation* (typical of steps 1A and 1B), *questions* (as in step 1C), *expression of needs, desires* or *interests* and *logical conclusions expressed with modal auxiliary verbs* (as in step 1D). A set of examples of each step is presented, from the RA introductions studied:

Step 1A: Counter-claiming:

The standard gesture at this point would be to claim that this project has always been or at least has become inescapably theoretical and polemical. (Lit #1)

However, most of these techniques accomplish volume reduction by considering the [...], and do not play much attention to the structural nature of the language which may highly affect the level of compression. (Lib #4)

Although nicotinic transmission plays an important role in [...] and in certain parts of the CNS, neuronal nicotinic receptors have not been well characterized. (Med #3)

Step 1B: Indicating a gap:

The pathogenic role of anti-AcChoR antibodies [...] has been recently established but the process by which this autoimmune response is triggered is still unknown. (Med #8)

Although partnerships are better able than other insurers to monitor the activities of an individual partner, perfect monitoring is still impossible. (Eco #5)

RA introductions from the Vegetal Physiology field do not show this step.

Step 1C: Question-raising:

Why to this day are Byron's lyrics relatively ignored? (Lit #4)

But are these questionnaires fatally flawed? (Lib #6)

..., a central question has been how these few HLA molecules can interact with so many foreign antigens. (Med #6)

RA introductions from the Vegetal Physiology field do not show this step.

Step 1D: Continuing a tradition:

Corbett and Fraser (1993) have already demonstrated how a network morphology treatment of Russian inflectional morphology, [...], can deal with apparent morphosyntactic mismatches related to animacy ... (Lan #9)

The use of the scientific literature as a measure of research activity has a long tradition in... (Lib #2)

Text books and reference books on warfare serve it up with monotonous regularity as if stating a simple fact, and anyone seeking reassurance from LS-J apparently finds it... (Lit #8)

Move 3: Occupying the niche. This move has a specific role: 'To turn the niche established in Move 2 into the research space that justifies the present article' (Swales, 1990:159). This move can be organized in three steps; the first one being an obligatory element, it does not matter which of its two forms could appear.

Step 1: The linguistic features of this step are mainly the *deictic elements*, and the use of *simple verbal tenses* in *past* or *present*, and *eventually future* as a way of *expressing intentions*. In the RA introductions studied we have found examples such as:

Step 1A: Outlining purposes:

In this paper, I want to look at another type of irony, namely, the irony expressed by conjuncts like (...) (Lan #5)

This article explains challenges in CAP and discusses possible future directions. (Eco #9)

We describe here how the application of high-resolution chromatography steps [...] results in securing highly homogeneous phospholipase-free material. (Med #7)

Step 1B: Announcing present research:

In the present study the influence of various levels of Ca2+, with and without salinity, [...] was determined, by studying germination, growth, ... (Veg #4)

In this contribution, we will study, in general, similar relations to that between the GIF and the AIF. (Lib #7)

The remaining sonnets I shall discuss are known in revised forms. (Lit #7)

Steps 2 and 3. These two steps are linguistically characterized by the use of the *present tense* and a *descriptive style of writing* by means of the *passive voice*, useful to expose results and structures. In the RA introductions studied, we found the following examples, among others:

Step 2: Announcing principal findings (RA introductions from the Language field do not show this step):

I shall suggest that the differences in their religious visions and in their natures as poetic artifacts are very much bound up with ... (Lit #10)

The result will be an improved cost management system that helps managers focus on all the necessary elements ... (Eco #10)

The amino acid sequences [...] have been determined. These sequences have provided insight into the structure and evolution of AchR (Med #5)

Step 3: Indicating RA structure:

The article is organised as follows. In the next section, the dialectic of creativity [...] The following section analyses the backdrop [...], and explains how the lags [...] fueled the avoidance of accounting regulations. Finally, the implications of the evidence for financial reporting are discussed. (Eco #7)

This paper is organised as follows. In section 2, I review two claims [...]. In section 3, I answer the question raised in section 2: [...]. In section 4, I discuss long-distance scrambling. [...] In sections 5, 6, and 7, I account for the above contrast ... (Lan #3)

The method used will first be explained. Then the principal findings will be given, [...]. Results will be discussed in the following part. We shall conclude with ... (Lib #10)

RA introductions from the Vegetal Physiology, the Medicine, and the Literature fields do not show this step.

3. Discussion and Results

Through RA introductions Spanish students of Librarianship can study the specific English language of their field, as well as the most common linguistic patterns that occur in the written texts they are going to deal with in their future work.

The teaching situation chosen to exemplify this was a second year course in the University School of Librarianship at the University of Murcia, Spain. The learners, with a rather poor command of English, have to read articles from specific journals written in English to acquire information in their field of specialization, that is, Librarianship. First of all, in the classroom context, the students were given hand-outs with Swales' CARS model (1990) for article introductions that explained their meaning. Also included with the hand-outs there was a list of the keywords and phrases that according to Swales (1990) are most frequently found in Research Articles Introductions. The purpose of this was to help students to familiarize themselves with the structure and language of RA.

Then, they were asked to read the title of the RA. Quite often it is possible to deduce correctly the content of the article just by reading the title or the heading, but sometimes it is not clear enough, as in for example "Three Possible Disulfides in the Acetylcholine Receptor alphasub-unit". Here, unless the students are experts in the field they will probably not know for certain what branch of science the title applies to.

After having read the title, the introduction was quickly skimmed over to search for any specific characteristics that would enable the reader to arrive at some conclusions about the content of the article, like charts, diagrams, figures, etc.

We cannot assume that Librarianship students will automatically manage to read and understand a range of registers in research articles. It will depend on some background knowledge that will allow them to construct the meaning of the content. In this sense, Nuttal (1985) speaks about an 'area of shared assumptions' between the reader and the writer, when they are very similar in background, training, attitudes and so on. Therefore, it is easy for the reader to interpret the text with no conscious effort. By reading RA introductions, students will manage the specific language and the specific linguistic structures which characterize this type of text. Swales' CARS Model will serve as a guide to understand the language and identify in some ways the field of research the learner is dealing with, as the different article studies show certain patterns according to the moves and steps that occur in them.

From all this information, students can infer a set of specific characteristics from each group of articles, taking into account that some of these groups share similar structures. RA from Medicine, Vegetal Physiology and Economics behave very similarly, in the sense that the frequency of appearance of the different parts points to the same pattern of moves and steps. In these three groups, move 1, step 2 and move 3, step 1A are the ones most commonly found in introductions. The only difference, which is very slight, is found in *move* 2; RA from Economics and Physiology usually offer step 1A in first place, and 1D follows in frequency of occurrence. In RA from Medicine we find the opposite: Step 1D is in first place, followed by step 1A. Bearing this small variation in mind, we could outline the structure of these types of articles, in order to facilitate the students a task of identifying and classifying them. So RA introductions from Medicine, Vegetal Physiology and Economics could be structured as follows: move 1, step 2, move 2, steps 1A-1D, move 3, step 1A. The student who is working with introductions of RA could use this pattern, together with the specific lexis he/she is reading, in order to identify and catalogue the article through the linguistic elements organised in a specific way.

RA introductions from Language and Literature share similar characteristics too, and a pattern can be drawn in the same way. In this case, *move 1*, *step 2*, *move 2*, *step 1B* and *move 3*, *step 1A* can be considered as the possible structures to take into account, as well as the specific vocabulary from these two areas. The peculiar structure of Literature articles, showing an essay-like format, would be another clue to cataloguing this type of papers.

Librarianship RA introductions were the most difficult to study and classify. They do not share any specific pattern with any of the other areas chosen, and a lot of irregularities were observed in their structure, namely *move 1*, *step 3*, *move 2*, *step 2* and *move 3*, *step 1A*. A tendency not to follow the normal order is characteristic of these introductions.

From this study, the student can obtain a set of specific characteristics for the different groups of articles. In class, they are taught the most typical structures that each step from each move can show, so the students are able to identify them in the RA introduction.

Once the linguistic features of the different moves and steps have been studied, the students have to concentrate on guessing the content and the field of research to which the article refers. Following Swales' model, it would be a good idea to start not in the logical chronological order, first Move 1 – Establishing a territory – but in the opposite one, Move 3 – Occupying the niche. The reason for starting this way is due to the fact that this move, with

Step 1A Outlining purposes

Step 1B Announcing present research

Step 2 Announcing principal findings

Step 3 Indicating RA structure,

shows, in most cases, enough evidence for an indication of the content of the RA. It is here that the novelty to the CARS approach relies. Regarding move 3, as was to be expected, in the total number of RA introductions investigated the students found that quite often it clearly starts in the last paragraph.

In the analysis of RA, students have found that those from science and technology were clearly defined, and they formed a homogeneous group, 'held together by common methods of investigation and common subject matters in the laws of nature' (Day, 1993:58) which made it quite easy to find the CARS structure in their introductions. On the other hand, they also found that RAs from literature were an entirely different matter. They did not have the IMRAD³ structure and they generally followed the traditional form of an essay, which makes the CARS structure rather difficult to find. They confirm Day's words when he says,

The humanities have different problems. The humanities not only differ from the forms already discussed, they also differ from each other. They are not a homogeneous group of disciplines belonging to one fundamental form of knowledge, but a number of distinct fundamental forms, each requiring distinct treatment. Philosophy, history, religion and the arts, may have some qualities in common, but there are more differences.... (Day, 1993:59)

4. Conclusion

This work has attempted to offer the benefits of specific CARS patterns – used in Research Articles – as a linguistic instrument (different from vocabulary) to help Spanish Librarianship students to identify and classify research articles. From the study and analysis of the 60 Research Article introductions used, the following conclusions can be drawn:

1. Each one of the six groups of Research Articles (Medical Sciences, Bio Sciences, Library Science, Economics, Language and Literature) shows a particular CARS structure and sequence, different from the Research Articles of the other five disciplines involved in this study.

³ The most common labelling of the component parts of a research article in the basic sciences, that is, Introduction, Materials (and Methods), Results and Discussion of Results (DAY, R.A. 1993 *How to Write and Publish a Scientific Paper*. CUP)

2. The patterns obtained offer particular and specific linguistic structures associated to each move and step.

Therefore, by introducing students to Swales' CARS model, we made them associate ESP with moves/steps, to make them identify the field of investigation of each Research Article. Some of the advantages found are the following:

- Students can infer, learn and consolidate specific linguistic structures dealing with RA introductions. These structures will help the Librarianship students characterize the articles according to their content.
- A suggestion can be made to students of Librarianship, that is, when they start reading the Research Article introductions, they should search for *move 3*, once they know by experience where it usually is. This will help them guess the general content of the RA more quickly.
- Students realize the importance of genre analysis in their specific field of study: Librarianship.

We do not claim that this is a complete solution to the challenge that Spanish Librarianship students will have to cope with when reading Research Articles in the English language, but it could give them some basic ideas on how to approach Research Articles, what to look for, and what kind of information they have to find if they want to obtain a general idea of what a scientific text written in English is all about, and the language (lexical and syntactic structures) they can expect to find.

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APPENDIX 1

Economics

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- #2 Tsai, W.H. (1996) "A technical note on using work sampling to estimate the effort on activities under activity-based costing 2, in *Int. J. Production Economics* 43, pp. 11-16.
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- flexibility in an innovative environment", in RAND Journal of Economics, Vol. 26, N° 4, pp. 557-574.
- #5 Lang, K. and Gordon, P.J. (1995) "Partnerships as insurance devices: theory and evidence", in *RAND Journal of Economics*, Vol. 26, No 4, pp. 614-629.
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Language

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Librarianship

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Pilar Aguado-Giménez was Born in Murcia, Spain, and got her Ph.D. in English Studies. She is an Assistant Lecturer in the Dept. of English Philology in the University of Murcia, Spain and has been working in a Research team with Professor Elisa Ramón-Sales since 1991. Several of her works have been published in Proceedings of Henry Sweet International Symposium in Córdoba, 1992, Proceedings of LSP Symposium in Bergen, 1993, Proceedings of Jornadas de Lenguas para Fines Específicos in Alcalá de Henares, 1994, 1995 (all of them about ESP) and Journals as Livius, Cuadernos de Filología Inglesa, and META.

Elisa Ramón-Sales, Ph.D., was born in Valencia, Spain and is a Professor in the Dept. of English Philology in the University of Murcia, Spain. At present she teaches English Literature at the Faculty of Arts in the University of Murcia, and has been working in a Research team with Pilar Aguado-Giménez since 1991. Several of her works have been published in Proceedings of Henry Sweet International Symposium in Córdoba, 1992, Proceedings of LSP Symposium in Bergen, 1993, Proceedings of Jornadas de Lenguas para Fines Específicos in Alcalá de Henares, 1994, 1995 (all of them about ESP) and Journals as Annales de la Universidad de Murcia and Cuadernos de Filología Inglesa.