

## Some Rhetorical and Discursive Features of Spanish Dental Academic Writing: An Exploratory Study<sup>i</sup>

Oscar Alberto Morales<sup>ii</sup>  
Universidad de Los Andes, Venezuela/  
Universitat Pompeu Fabra, Spain

Daniel Cassany<sup>iii</sup>  
Universitat Pompeu Fabra, Spain

### ABSTRACT

We will describe some typical rhetorical and discursive features of the Spanish Dental Academic Writing (SDAW), which have not been studied yet. We analyzed three different genres of four leading Hispanic dental journals (Spanish, Venezuelan and Cuban) published between January 1989 and December 2005: 10 review articles (RA), 10 case reports (CR) and 10 research papers (RP) from each journal, which sum up 120 texts. Using Swales’ genre analysis model, we analyzed the rhetorical structures, the moves of the rhetorical sections, the physical components and the hedging devices used in each genre. We also compared our results with some studies carried out in English medical discourse.

We found that even though SDAW has some common features with the discourse of other academic and professional communities, such as medicine, it has some particular features, rhetorical moves and communicative functions. The prototypical rhetorical organizations found were: In the RA, introduction-development-conclusion; its moves coincide partially with Swales’ CARS model, Mulrow’s criteria, Myers’s and Noguchi’s findings. In the CR, a three-section structure predominated: introduction-case presentation-discussion/conclusion. Its moves coincided in some way with those Taavitsainen & Pahta, Jenicek and Uribarri found in medical CR. Finally, RP followed predominantly the IMRDC format. Some of its moves were similar to those reported for medical RP (Swales, Day, Huth, Nwogu, Williams, and Hopkins & Dudley-Evans). Finally, we found that hedging is a common semantic-pragmatic strategy used in the SDAW, among those shields; approximators and impersonal constructions reported a high frequency, which coincide with Salager-Meyer. We also found deictics and compound hedges.

We conclude that the characteristics of the SDAW, its communicative functions and the position of the authors could condition the writing of the different genres. Moreover, the expectations of members of the Dental community associated with academic writing could determine the way authors present their propositions, and their stances. Results could have didactic implications for teaching SDAW. We consider that it should be based on the empirical evidence: the way dentists (clinicians, researchers and professors) produce and interpret discourse in professional and academic settings.

**Key words:** Dental academic writing, Spanish, research paper, review article, case report, discourse analysis, genre analysis, hedging.

### 1. INTRODUCTION

Dentistry is a well established discourse community. Paraphrasing Swales (1990), the international dental community

1. has a broadly agreed set of common public goals.
2. has mechanisms of intercommunication among its members.
3. uses its participatory mechanisms primarily to provide information and feedback.
4. utilizes and hence possesses one or more genres in the communicative furtherance of its aims.
5. in addition to owning genres, it has acquired some specific lexis.
6. has a threshold level of members with a suitable degree of relevant content and discursal expertise.

McCauley (2003: 42) considers that a true profession is built upon a tripod: A formal organization, a formal professional education, and a formal scientific literature. The dental community in the United States was the leader in all three. In 1839-40, the American Society

of Dental Surgeons was organized, the Baltimore College of Dental Surgery was established, and the first dental journal in the world, the American Journal of Dental Science, was founded.

Later, the dental scientific community spread through Latin América and Spain. For the beginning of the 1990s, these communities were solidly established as well. At present, there are a lot of dental schools and faculties, journals, professional and academic organizations in the whole world. More over, every year thousands of scientific conferences are organized.

However, in spite of its tradition and the importance that the dental practice has for society, to date the Spanish dental discourse has not been studied either from the discourse analysis or from the genre analysis perspective.

As a first approach to the Spanish dental written scientific discourse, this paper has two aims: on the one hand, to examine some typical rhetorical and discursive features of the Spanish Dental Academic Writing. It implies to describe and analyze the rhetorical organization, Physical components and frequency and distribution of hedging devices used in the three main genres used in the dental community: Case Reports (CR), Review Articles (RA), and Research Papers (RP). On the other hand, based on the results of the study, we will propose some didactic strategies for teaching dental academic discourse, both in Spanish and English.

## 2. METHOD

We examine some typical rhetorical and discursive features of the Spanish Dental Academic Writing (SDAW). A sample of dental scientific articles published in four leading international Hispanic Dental journals between January 1989 and December 2005 were examined. We selected, at random, a sample of the three main dental genres: 10 review articles (RA), 10 case reports (CR) and 10 research papers (RP) from each of the following journal: *Revista del Colegio de Odontólogos y Estomatólogos de España (RCOE)*, *Medicina Oral, Patología Oral y Cirugía bucal*, from Spain, *Acta Odontológica Venezolana*, from Venezuela, and *Revista Cubana de Estomatología*, from Cuba.

Journals	Code	Periods	RP	RA	CR	Total
<i>Acta Odontológica Venezolana</i>	AOV	1999-2005	10	10	10	<b>30</b>
<i>Revista Cubana de Estomatología</i>	RCE	1999-2005	10	10	10	<b>30</b>
<i>Revista del Colegio de Odontólogos y Estomatólogos de España</i>	RCOE	2002-2005	10	10	10	<b>30</b>
<i>Medicina Oral, Patología Oral y Cirugía bucal</i>	MOPOyCB	2004-2005	10	10	10	<b>30</b>
<b>Total of articles</b>			<b>40</b>	<b>40</b>	<b>40</b>	<b>120</b>

Table 1: Description of the corpus

	AI	AR	CC	Total
<b>Running words</b>	156.154	168.215	91902	416.271
<b>Mean</b>	3904	4205	2298	3.469

Table 2: Running words

Based on Swales’ genre analysis model (1990), we analyzed the rhetorical structures, the moves of the rhetorical sections and the physical components of each genre (Noguchi, 2006). As we have not found any discursive study on Dental discourse, we compared our results with some previous researches carried out in other discourse communities.

We also analyzed the distribution and frequency of hedging devices used in each genre, considering some of the Salager-Meyer’s categories (Salager-Meyer, 1994, 1997, 2007):

impersonal constructions, shields, approximators, compound hedges and time deictic expressions.

From the beginning of the study, several dentists, established members of the Hispanic dental community, participated as specialist informants. Their opinions were considered for the selection of journals, genres and articles, and for the analysis and interpretation of the results.

### 3. RESULTS

We found that even though SDAW has some common features with the discourse of other academic and professional communities, such as medicine, it has some particular characteristics, rhetorical moves and communicative functions. The prototypical rhetorical organizations found are described as follow.

#### 3.1 RHETORICAL STRUCTURE OF DENTAL GENRES

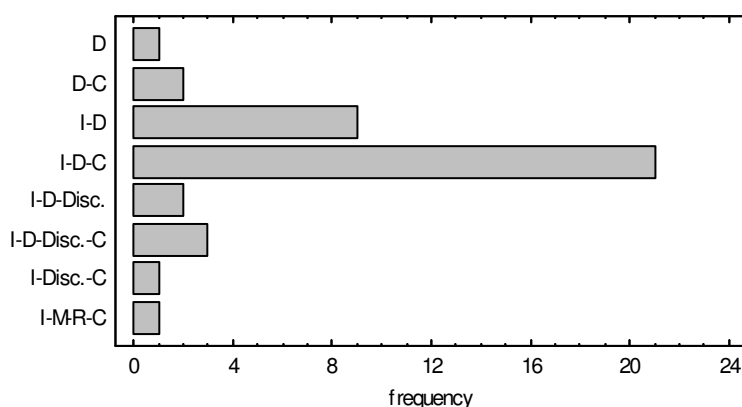
##### 3.1.1 Review Article (RA)

RA synthesizes findings presented in previously published papers; their communicative function is to gather, summarize and critically assess the maximum information possible reported in pre-existing articles, to offer solutions, protocols or behaviors to be adopted. That is why it is extremely useful to the dental community, both dentists and students. RA offers them access to ever-growing number of articles published in Dentistry that they could never be able to read.

They are not written by specialists, experts in given areas, like medical RA; on the contrary, students, dentists, professors aim diplomatically to create space in the different dental areas (Swales, 1990). Therefore, the RA were evaluated like other kind of paper (CR or RP, pro example).

No uniform format of RA was found. As can be seen in the following graphic (N.º 1), the traditional narrative review format predominated in about 80% of the RA, which includes the following sections: *introduction* (I) (rhetorical) - *development* (D) (content-oriented) – *conclusion* (C) (rhetorical) (Mulrow, 1995).

Graphic 1: Rhetorical structure of RA



When comparing the mean extension of the sections, we found statistically significant differences ( $p > 0,05$ ). The *development* is the longest section, because it is where arguments are presented. It is organized in different sections identified by content-oriented headings.

More than 60% of the articles analyzed included nine moves: 4 in the *introduction*, 3 in the *development*, and 2 in the *conclusion* section. The table N° 3 synthesizes the moves found in each section.

The *introduction* is a rhetorical section. It shares communicative functions with the abstract. For example, when the purpose is mentioned in the abstract, it is not repeated in the introduction. Moreover, abstract does not summarize the article; on the contrary, it presents the content of the text. Most of RA had educational purposes. Their audience seems to be undergraduate and graduate students, and general dentists in in-service training. Most of the RA neither indicate gaps, nor include methodology, objective or text structure, as recommended by Mulrow (1987, 1995).

Based on Noguchi’s classification (2006: 109), we found that the reviews combine the four categories she proposed. A given RA could include more than one category; reviews which present a historical view of a facet of the field, describe the current situation in a field and call the attention to some issue in the field are found predominately. Therefore, we consider that in our corpus it is not possible to use this classification. As an alternative, we propose to consider a continuum in which the four categories are integrated. In each case, one could prevail over the others.

Also, as can be seen below (table 6) in the description of the physical elements of the RA, usually titles inform about the kind of review it is. E.g.

- (1) Diseminación de la infección odontogénica. Revisión de la literatura (AR-AOV-2)

*Conclusions* are very short. They are presented in numbered or listed straightforward statements. Basically, they synthesize the main ideas of the article, and some times offer recommendations for clinical practice and, in a less proportion, for future research.

In the following table (N° 3), we synthesize the moves we have found in each section. We only consider those moves presented in more than 60% of the RA.

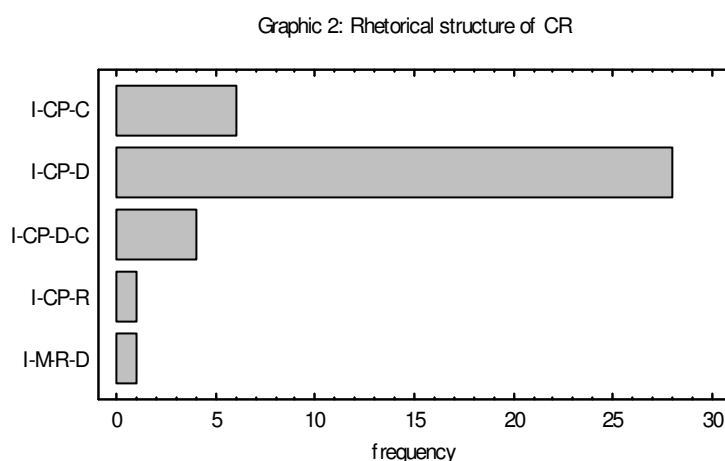
Sections	Moves
<b>Introduction</b>	Definition of topic
	Background and literature review
	Justification
	Objective and application of results (evaluation)
<b>Development</b>	Presentation/introduction of the information/section
	Elaboration/expansion of the information
	Critical summary
<b>Conclusion</b>	Importance and achievement of the objective
	Recommendation for clinical practice and for future research

Table 3: Sections and moves of review articles (RA)

Our results coincide partially with Swales’ CARS model (1990) for the introduction section, Mulrow’s criteria for English medical RA (1987), Myers’s (1991) analysis of Molecular Biology RA, Ruiying & Allison’s (2004) description of secondary RP (which we consider RA), and Noguchi’s findings (2006) in her research of science RA.

### 3.1.2 Case report (CR)

The CR consists of the description of: unknown, slightly frequent or atypical diseases; unknown, infrequent connections of diseases; new diagnostic procedures; or adverse unexpected effects of therapies that could be interesting for clinical, scientific and educational purposes. We found no uniform format of CR. However, a three-rhetorical-section structure predominated (which was found in 80% of the cases, as can be seen in the graphic 2): *introduction (I)-case presentation (CP)-discussion (D)/conclusion (C)*. When comparing the mean extension of the sections, we found no statistically significant differences ( $p < 0,05$ ).



More than 80% include 16 moves: 4 in the *introduction*, 7 in the *case presentation* and 5 in the *discussion/conclusion* section (See table 4).

The *introduction* shares communicative functions with the abstract. When the purpose is mentioned in the abstract, it is not repeated in the *introduction*. Moreover, abstract does not summarize the article; on the contrary, it presents the content of the text.

We did not find any unique case, which permits to create hypothesis and to develop science. Most of RA had educational purposes. They present interesting cases which could be useful to teach Dentistry. Therefore, their audience seems to be undergraduate and graduate students, and general dentists in in-service training.

Also, as shown in table 6, similar to what we have found in RA, titles usually inform about the genre. They are divided into two parts, using a colon or a period: the first part is referred to the content of the case, and the second deals with the genre. E. g.

(2) Fibroma óseo juvenil: a propósito de un caso clínico (CC-MOPOyCB-5)

Like in RA, *conclusions* are very short. They are presented in numbered or listed straightforward statements. Basically, they synthesize the case, and some times offer recommendations for clinical practice.

In the following table (N° 4), we synthesize the moves we found in each section. We considered only those presented in more than 60% of the cases.

Sections	Moves
Introduction	Definition of topic
	Background of the case and literature review
	Justification of the case
	Objective
Case description	Patient description
	Clinical history
	Physical examination and diagnostic studies
	Definitive diagnosis
	Description of therapeutic procedures
	Prognostics
	Follow-up of patients
Discussion/conclusion	(Re) definition of topic
	Literature review and confrontation of results with literature
	Confirmation of diagnosis
	Justification and presentation of the case
	Discussion and interpretation of the case

Table 4: Sections and moves of case report (CR)

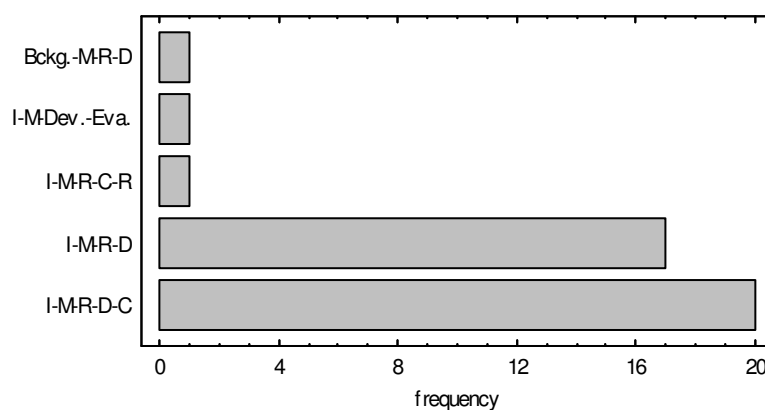
These moves coincided in some way with those Taavitsainen & Pahta (2001) and Jenicek (2001) in English medical CR, and Uribarri (2004) in Spanish medical CR.

### 3.1.3 Research paper (RP)

The research article (RA) is chosen for the present research because, on the one hand, it is the main dental genre, and on the other hand, because of its importance for the circulation of academic knowledge in general. Based on Berkenkotter and Huckin (1995: 27) and Hyland (1996: 252), we consider it the key medium for the legitimating of claims and of disciplines.

Finally, no uniform format of RP was found. However, more than 80% followed predominantly the IMRDC format (Introduction, Method, Results, Discussion and Conclusions), as can be seen in the following graphic (3).

Graphic 3: Rhetorical structure of RP



We found that most of the RP (more than 60%) include 17 moves, distributed as follows in the different sections: 3 (introduction), 3 (method), 3 (results), 5 (discussion), and 3 (conclusion). When comparing the mean extension of the sections, we found statistically significant differences ( $p > 0,05$ ).

Some of these moves are similar to those reported in previous studies in other disciplines, especially in medical RP (Day, 1988; Hopkins & Dudley-Evans, 1988; Swales, 1990; Skelton, 1994; Nwogu, 1997; Huth, 1999; Posteguillo, 1999; Williams, 1999; Peacock, 2002; Ruiying & Allison, 2004).

Most of the articles did not indicate gap (Swales’ “establishing a niche”), that is, they neither justify their research by indicating that research is needed in the area nor criticize the previous studies. Most of RA had educational purposes; they mainly offer practical clinical information. None of the Cuban article *introductions* were entitled, presumably as a result of an editorial policy.

Like the other genres, their audience seems to be undergraduate and graduate students, and general dentists in in-service training. Conclusions are very short, numbered or listed.

Section	Moves
Introduction	Define the topic
	Theoretical framework and literature review
	Objectives and application of the results (evaluation)
Method	Identification and description of the sample
	Description of the procedures
	Description of the analysis techniques
Results	Introduction of results
	Presentation of results organized in categories or in tables
	Description and interpretation of results
Discussion	Objetives
	Theoretical framework and literature review
	Description and interpretation of main results
	Confrontation of results with the literature
	Conclusions: implications y recomendations (future research, clinical applications, social development)
Conclusions	Summary of results
	Implications
	Recommendations

Table 5: Sections and moves of research papers (RP)

### 3.2 PHYSICAL ELEMENTS OF SDAW

In relation to the physical elements (table N.º 6), we found that dental scientific articles are written by several authors, usually from different institutions. However, dentists tend to publish in the journal from their own country.

The average length of the titles was 11 words (10, CR; 13, RP; 9, RA). In about half of the articles, genre is identified in the title. The Vancouver system of citation and referencing is used in almost all the texts. It was found a mean of 24 references per text, mainly English RP. We also found a mean of 3 images per article; however, imaging is a distinctive feature of CR (6 per CR, over 1 in RP and 2 in RA).

100% of the texts include *resumen*. Abstracts also reported a high frequency (about 90%). It suggests that Hispanic dental journal tend to follow the international journal standard by including English abstracts as an essential element of scientific publications. We found

fewer acknowledgments in our corpus than those reported in previous papers, maybe, because research is not supported by institutional grants.

Physical elements	CR	RP	RA	Total/mean
<b>Title length (N.º of words)</b>	10	13	9	11
<b>Genre identification</b>	33 (83%)	11 (28%)	18 (45%)	62 (52%)
<b>Authors per article (mean)</b>	4	4	3	3
N. Dentists	38	40	40	118
N. Physicians	15	11	17	43
N. Others	8	9	2	19
N. Cubans	10	9	10	29
N. Venezuelans	10	8	10	28
N. Spanish	19	18	20	57
Others	1	5	0	6
<b>Institutions of adscription</b>	2	2	1	2
<b>APA referencing system</b>	0	5	4	9
<b>Vancouver referencing system</b>	40 (100%)	35 (87,5%)	36 (90%)	111 (92,5%)
<b>References per article</b>	17	25	29	24
N. English References	13 (76%)	19 (76%)	22 (76%)	18 (76%)
N. Spanish References	4 (24%)	6 (24%)	6 (24%)	5 (21%)
N. Periodical References	15 (85%)	21 (84%)	24 (83%)	20 (83%)
N. Books	3 (15%)	4 (16%)	4 (14%)	4 (17%)
N. CR	4 (24%)			
<b>Images per article (mean)</b>	6	1	2	3
<b>Sections:</b>				
<i>Resumen</i>	100%	100%	100%	100%
<b>Abstract</b>	87%	87%	90%	91%
<b>Acknowledgments</b>	2 (5%)	1 (2,5%)	9 (22,5%)	12 (10%)
<b>Introduction</b>	40 (100%)	39(97,5%)	37(92,5%)	116 (97%)
<b>Conclusion</b>	12 (30%)	20 (50%)	28 (70%)	60 (50%)

Table 6. Physical elements of the three genres studied

### 3.3 FREQUENCY AND DISTRIBUTION OF HEDGING

Finally, we found that hedging is a common semantic-pragmatic strategy used in the three genres analyzed (see table 7).

Genres	CC	AR	AI
<b>% of hedging</b>	5.4 %	4.7%	4.8%
<b>Mean per article</b>	85	143	130

Table 7. Distribution of hedging in the three genres

Tables 8, 9 and 10 show the distribution and frequency of hedging in the different rhetorical sections of the three genres. It suggests that the use of hedging devices is not limited to a given section; they are used in a quiet similar frequency in the sections of the three genres.

	Extension mean	%	Hedging mean	%	Hedging Frequency
<b>Introduction</b>	633	41,16	26,22	4,14	24,14
<b>Case Description</b>	521	33,04	21,05	4,04	24,75
<b>Discussion/conclusion</b>	417	25,86	16,47	3,94	25,31
<b>Total</b>	1580	100	63,7	4,03	24,80

Table 8. Distribution of hedging in CR, in relation to the total running words



	Extension mean	%	Hedging mean	%	Hedging Frequency
<b>Introduction</b>	327	11%	17	12%	20 (5,03%)
<b>Development</b>	2581	84%	118	82%	22 (4,59%)
<b>Conclusion</b>	149	5%	9	6%	17 (6,07%)
<b>Total</b>	3057	100%	144	100%	21 (4.7%)

Table 9. Distribution of hedging in RA, in relation to the total running words

	Running Words	%	Hedging Mean	%	Hedging Frequency
<b>Introduction</b>	648	23,6	33	25	20 (5,12)
<b>Method</b>	505	18,4	25	19	20 (4,88)
<b>Results</b>	637	23,2	22	17	29 (3,45)
<b>Discusion</b>	921	32,7	48	37	19 (5,35)
<b>Conclusion</b>	118	2,1	3	2	19 (5,18)
<b>Total</b>	3904	100	131	100	21 (4,77)

Table 10. Distribution of hedging in RP, in relation to the total running words

Tables 11, 12 and 13 describe the frequency of the five hedging categories analyzed. As can be seen, shields, approximators and impersonal constructions reported a high frequency. These strategies were used in all the rhetorical sections of the three genres, which coincide with Salager-Meyer’s findings (1994, 1997, and 2007). We found a low frequency of time deictic expressions and compound hedges, which were used mainly in the *introduction* and *discussion/conclusion* sections.

Category	Shields	Approximators	Impersonals	Deictics	Compounds
<b>Mean</b>	10.87	17.50	32.65	2.11	3.38
<b>%</b>	17,06%	27,47%	51,25%	3,31%	5,30%

Table 11. Frequency of hedges according to the categories in CR

	Extension mean	%	Hedging mean	%	Hedging Frequency
<b>Introduction</b>	327	11%	17	12%	20 (5,03%)
<b>Development</b>	2581	84%	118	82%	22 (4,59%)
<b>Conclusion</b>	149	5%	9	6%	17 (6,07%)
<b>Total</b>	3057	100%	144	100%	21 (4.7%)

Table 9. Distribution of hedging in RA, in relation to the total running words

Category	Shields	Approximators	Impersonals	Deictics	Compounds
<b>Mean x text</b>	27,9	44,8	65,1	4,6	1,8
<b>%</b>	19,4%	31,1%	45,1%	3,2%	1,2%

Table 12. Frequency of hedges according to the categories in RA

Category	Shields	Approximators	Impersonals	Deictics	Compounds
<b>Mean x text</b>	15	35	75	2	4
<b>%</b>	12%	27%	57%	1%	3%

Table 13. Frequency of hedges according to the categories in RP

#### 4. CONCLUSIONS

We conclude that the characteristics of the SDAW, its communicative functions and the position of the authors could condition the writing of the different genres. Moreover, the expectations of members of the Dental community associated with academic writing could determine the way authors present their propositions, and their stances.

The rhetorical structure of the three genres show some differences from other disciplines, such as medicine. Therefore, these differences should be considered to teach dental academic writing, both in Spanish and English.

They do not have pretensions of generalization and universality. On the contrary, our results suggest that the SDAW is highly hedged. However, hedging strategies are not subordinated to a given section such as in medical discourse; they are used in the different rhetorical sections of the three genres. Impersonal constructions, used as hedges, and approximator predominated.

The SDAW is predominantly descriptive - narrative and un-argumentative. It allows the use of approximators, but this limits the use of shields. The high frequency of approximators is coherent with biomedical tradition. Physicians and dentists are likely to express probabilities in words to accomplish different goals.

Compound hedges and time deictics reported low frequencies of use, which coincides with previous studies on hedging in Spanish dental Case reports and review articles (Morales et al., 2007a, 2007b), but it differs from Salager-Meyer's (1994) results in English medical CR. Recurrently, deictics are combined with impersonal constructions, to emphasize the provisional nature of knowledge and to detach from the commitment of truth. The use of compound permits to report different interpretations and applications as valid. They were found mainly in the introduction and discussion.

Results could have didactic implications for teaching SDAW. We consider that it should be based on the empirical evidence: the way dentists (clinicians, researchers and professors) produce and interpret discourse in professional and academic settings. We propose that dentists should participate both in research on dental discourse and in the teaching of reading and writing of dental academic texts.

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**NOTES:**

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<sup>ii</sup> Licentiate in Education; Master in Reading and Writing; Ph.D candidate at the Multilingual Communication program, UPF, Barcelona, Spain; professor of dental academic discourse, and researcher ascribed to the Research Group of Dental, Discursive and Educational Studies (GEODE), Faculty of Dentistry, ULA. [oscarula@ula.ve](mailto:oscarula@ula.ve)

<sup>iii</sup> PhD; professor of discourse analysis, UPF; head of the research project before mentioned (Critical literacy); author of more than 10 books, dozens of articles and conferences on reading, writing and discourse analysis. [daniel.casany@upf.edu](mailto:daniel.casany@upf.edu)