FROM THE PRODUCTION OF ABSTRACTS TO INSTANCES OF GRAMMATICAL METAPHORS: SOME RESEARCH *INSIGHTS* TO UNCOVER THE ACADEMIC DOMAIN

DA PRODUÇÃO DE RESUMOS A INSTÂNCIAS DE METÁFORAS GRAMATICAIS: INSIGHTS *DE PESQUISA PARA A ESCRITA NA ESFERA ACADÊMICA*

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ABSTRACT: The aim of this paper is twofold: to shed light on the production of paper abstracts from the point of view of their macrostructure, and to discuss the use of nominalizations as instances of grammatical metaphors in this text genre. In order to do so, we will first discuss the principles underlying academic writing (AW), in the attempt to associate them to successful communication in this field. We also showcase a few samples of classroom activities, aimed at illustrating how some of the principles related to abstract writing can be put into practice. With respect to the instances of grammatical metaphors, we call attention to their significance to the academic domain, functioning as topic initiators, and, most importantly, as powerful strategies for successful scientific writing.

KEYWORDS: academic writing; abstract production; grammatical metaphors

RESUMO: O objetivo deste artigo é duplo: lançar luz sobre a produção de resumos de trabalhos científicos, pelo ponto de vista da sua macroestrutura; e discutir o uso de nominalizações como instâncias de metáforas gramaticais presentes nestes textos. Para isso, discutimos, primeiramente, os princípios subjacentes à escrita acadêmica, numa tentativa de associá-los à comunicação bem sucedida nesse campo. Apresentamos, em seguida, alguns exemplos de atividades de sala de aula, com o objetivo de ilustrar como alguns dos princípios relacionados com a escrita de resumos podem ser postos em prática. Com respeito às instâncias de metáforas gramaticais, chamamos a atenção para seu significado como características inerentes à escrita científica, podendo funcionar como iniciadores de tópicos e, principalmente, como importantes estratégias para uma comunicação científica bem sucedida.

PALAVRAS-CHAVE: escrita acadêmica; produção de resumos; metáforas gramaticais

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WRITING INTELLECTUAL TEXTS: SOME OF THE LINGUISTIC POTENTIALITIES AVAILABLE FOR SCIENTIFIC COMMUNICATION

Human consciousness cannot achieve its full potential without writing. As Ong (1982) advocates, it enlarges the potentiality of language almost beyond measure, once it restructures thought. Academic literacy is thus necessary for the development of science, art, and philosophy. Chafe (1982), in contrasting writing (essays) and speech (spontaneous conversation), suggests that differences in the processes of speaking and writing have led to specific differences in their by-products. The fact that more formal writing is much slower than speech, while reading is much faster, for example, allows formal written language to be less fragmented than oral speech. The writer has the time to mold ideas into a complex, coherent, integrated whole, making use of dense lexical and syntactic devices rarely used in colloquial speech.

Given the importance of writing in our society, particularly in the intellectual domain, the study of academic discourse is crucial. In order to shed some light on this discussion, we will first present some of the principles lying behind academic writing (AW), while relating them to teaching strategies and to learners ´ needs. Later on, in the text, we will showcase a few samples of classroom activities, aimed at enriching the production of paper abstracts. These texts were produced in the context of a course on writing research abstracts, offered by the Graduate Program of Infectious Disease and Tropical Medicine of a public university in Brazil. In terms of the clausal constitution of abstracts, we will call attention to the significance of instances of nominalizations, as a type of grammatical metaphor. They can function as topic initiators, and as powerful strategies for successful communication in the scientific domain. In the next section, an overview of English for Academic Purposes is drawn.

ENGLISH FOR ACADEMIC PURPOSES – A BRIEF OVERVIEW

English for Academic Purposes (EAP) is a branch of Linguistics and Applied Linguistics, with its own research agenda. As such, it focuses on 'the communicative needs and practices of individuals working in academic contexts' (HYLAND; SHAWN, 2016, p.1). It has grown from the English for Specific Purposes (ESP) movement in the 1980's and is anchored on broad theoretical foundations, which seek to investigate the effectiveness of teaching and assessment, describe academic texts in terms of their linguistic and discursive structure and analyze the textual practices of academics. In terms of teaching, it seeks to uncover constrains that the academic context may impose on language use and develop strategies to help learners overcome them. EAP learners include not only undergraduates studying English as an additional language (EAL), but also secondary students and academics that write papers for publication or need to present papers at conferences. In order to do so, these learners need to be able to navigate through the conventions of the English language academic discourses so as to be successful in their academic learning or in their careers. As a matter of fact, learners need to cope with new ways of learning, as they must write and read unfamiliar genres when they enter university.

Hyland (2016) discusses the pedagogical implications of adopting a specific or general approach to EAP. The difference lies on the degree of specificity; that is, whether

skills and language features are discipline specific or not. As Hyland (2016, p.17) puts it, 'the issue resolves into a single question: are there skills and features of language that are transferable across different disciplines or should we focus on what is needed by particular learners?' General EAP aims at giving learners generic skills that would be applied in different contexts and for varying needs. These skills include listening to lectures, reading textbooks and articles and writing essays and reports. Specific EAP, on the other hand, tailor instruction to students needs in their disciplines.

Hyland goes on to discuss the differences between general and specific EAP, while making the case for specific EAP. One of the arguments for specific EAP which does not deny the relevance of general EAP is the fact that learners at lower proficiency should attend to sentence-level features while not ignoring discourse or discipline specificities at any time. Instructors may benefit from the growing body of research on how disciplines use language, including the frequency and uses of self-referring pronouns and the genres learners need and use. Such a specific focus also fosters learner's motivation, 'making the relevance of study more obvious while activating their often-considerable subject-specific knowledge'. EAP teachers are thus professionally challenged to develop knowledge on the rhetorical and linguistic demands of discipline specific contexts. The result is likely to be a more 'efficient, targeted, and motivating instruction', catering for learner's needs and assisting them in becoming members of an academic discourse community (HYLAND, 2016, p.20).

The principles that underlie the practice of EAP are outlined by Hyland and Shawn (2016). Authenticity, a key principle inherited from ESP, means using real examples of spoken and written texts in authentic tasks, that is, tasks that learners may face in the real world. It also included tailoring texts to improve their readability or to highlight a certain feature. The second principle is groundedness, which reflects the insights gained from research that underpins practice and instructional materials. EAP is grounded on the contexts in which texts are found and on their analysis. Theoretical and methodological concepts have been refined as EAP has sought to provide learners with a pedagogy that would assist them in developing their academic communicative needs. Teachers need to 'consider the discourses of the students they are teaching and of the disciplines and genres that their students are studying' (HYLAND; SHAWN, 2016, p. 3). It is only when teachers understand the genres and the students they teach that the cycle of research providing insights into practice and vice versa is complete.

The interdisciplinarity principle refers to the fact that it employs several theories and methods. This is not to say that EAP lacks a theory; on the contrary, it is strengthened by a broad range of ideas that contribute to our understanding of communication for pedagogical practices. The theories include 'systemic linguistics, discourse analysis, pragmatics, critical theory, social constructionism, communicative language teaching, contrastive rhetoric, socio-cognitive theory and the sociology of scientific knowledge (HYLAND; SHAWN, 2016, p. 3). The last principle presupposes that EAP should be relevant. In order to be so, it must identify the specific skills, genres and communicative practices learners need to develop. This principle has direct impact on course design and material production.

Even though the principles constitute potential strengths in EAP, they may also represent weaknesses. One of them is the danger of working for and not with subject specialists, which may regard EAP as discipline to be taught as an aid to the

development of EAL. What learners need is to develop language skills in their own disciplines, since the professional communities with which learners will interact with have their practices, genres and communicative conventions. As a matter of fact, more specific role for EAP has been developed, with research focusing on how knowledge is constructed through the discourses of specific disciplines. A growing body of literature has sought to characterize oral and written discourses at university and their structural patterns across disciplines with the help of corpora research (BIBER, 2006; BIBER; CONRAD; CORTES, 2004) and the move structure of both oral (DEROEY; TAVERNIERS, 2011; LEE, 2009, THOMPSON, 2003, among others) and written discourse (SWALES, 2004; SWALES; FEAK, 2009; MOZAHEB, SAEIDI; AHANGARI, 2014, among others).

This research field also focuses on the role of the linguistic component of EAL writing abilities, investigating the contribution of language capacities and writing literacy, the linguistic characteristics of L2 (second language) academic texts and issues related to the challenges of international students and academics in publishing research in the L2. The study of L2 texts characteristics includes the analysis of a given linguistic domain, such as syntactic complexity or the use of lexical phrases and the analysis of the differences between L1 (first language) and L2 texts. Such analyses have been conducted under the light of several theoretical frameworks, such as Systemic Functional Linguistics (SFL) and theories of multicompetence (MANCHÓN, 2016). As for writing for research publications, the debate centers on whether the status of being users of an additional language influences their academic and/or professional success, and whether such users face linguistic challenges when publishing (MANCHÓN, 2016; FLOWERDEW, 2013).

The contribution of writing academically for second language acquisition (SLA) is a research strand that has provided insights into how writing itself, and the processing of feedback can affect language development. As argued by Manchón (2016), writing may function as an output for language analysis and processing, eliciting attention to form-meaning relations as EAL learners attempt to express and refine their linguistic production. It is also argued that writing academically may potentially lead to language learning as the result of

> (i) the availability of time that characterizes writing (which is even more the case in academic settings); (ii) the visibility and permanence of both the written text and the feedback on it; (iii) the challenging, problem-solving nature of academic writing tasks; and (iv) the languaging, metalinguistic reflection, and noticing processes that may result from the scaffolding provided in collaborative writing conditions (MANCHÓN, 2016, p. 145).

It should be highlighted that the contribution of writing to SLA is still underesearched to come to any robust conclusions regarding the role of writing academically for language development. Byrnes (2014), in his investigation of genre-based writing tasks and its contribution to learning, has also showed that SFL may shed light on the connection between engagement in academic writing tasks and L2 development.

Byrnes (2014) proposes a framework for writing pedagogy based on SFL by adopting the genre-based instruction as task. The idea is that genres, which are characterized by probabilities of language use and not by the application of fixed grammar rules, should be used as the backbone of writing tasks. This would ultimately

encourage the use of 'certain privileged though not obligatory lexico-grammatical features in a staged textual environment' which creates opportunities 'for use and situated practice of these features and therefore learning' (BYRNES, 2014, p. 242). In addition, the fact that writing tasks involve meaning making activity, 'they offer environments for engaged choices on the part of learners that involve their emerging voice, identity, and authority in another language'. These two features combine the creative and relatively rigid language that lies 'at the heart of an understanding of a genre-oriented, task-based curriculum' (BYRNES, 2014, p. 242). In the next section, we discuss the notion of genre and its potential application in EAP.

Genres in EAP

The concept of genre was first introduced in the field of EAP by John Swales in 1981 (SWALES, 2004) in his discussion on the structure of research article introductions. Genre was originally defined by Swales as comprising 'a class of communicative events, the members of which share some set of communicative purposes' (SWALES, 2004, p. 60). More recently, Swales has come to add to the definition of genre as metaphors to ease our understanding of the concept. We highlight Swales' understanding that genres are 'frames for social action', drawing on Bazerman's own definition that genres '[...] are environments for learning. They are locations within which meaning is constructed. Genres shape the thoughts we form and the communications by which we interact (BAZERMAN, 1997, p. 19, cited in SWALES, 2004, p. 61). Thus, genres are the initial matrix whereby listeners and speakers of a given community can frame their thoughts in order to achieve effective communication.

Since Swales' original contribution, genre has made a significant contribution to EAP, both in research and pedagogy, and especially in the teaching of writing to ESL graduate students. According to Paltridge (2013, p. 347), genre in ESP 'refers to communicative events such as seminar presentations, university lectures, academic essays, and business reports.' In EAP genre studies, moves are used to describe the discourse structure of texts. Each move may contain more than one step, which may recur throughout the text or not be present in some exemplars (SWALES, 2009; DEROEY; TAVERNIERS, 2011). Such focus on the macro-level textual structure is referred to as 'move analysis' in ESP genre studies. Contextual aspects are also taken into consideration in such analysis, as well as linguistic examinations (BIBER, 2006). Ultimately, genre studies in EAP aim at understanding how genres are shaped and how they achieve their purposes (PALTRIDGE, 2013).

In terms of language use, several studies have showed that there is variation when specific settings and specific genres are examined (BIBER, 2006; and several others cited in PALTRIDGE, 2013). In other words, language varies across disciplines and genres, and this should not be disregarded by language professionals that conduct research in ESP.

Corpora have also helped shed light on genre studies, showing EAP teachers how language is used in particular academic genres. Biber (2006) is one such example – the author examines and describes linguistic features of spoken and written academic genres. Swales and Feak (2009) also provide insights into genre and part-genre, such as abstracts and introductions across disciplines by resorting to corpora studies.

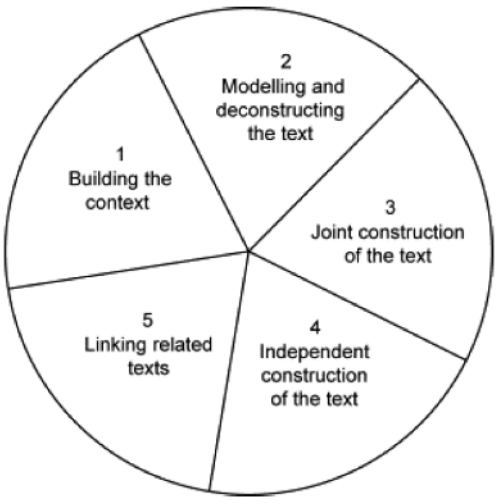
Paltridge (2013) highlights the importance of viewing genres as pathways to the generation of knowledge in disciplinary fields. In other words, acquiring a genre is the means to learn disciplinary knowledge. Linguistic knowledge is a required but not sufficient condition for users to achieve their communicative goals. Users of academic language need not only 'to understand the underlying views, assumptions, and aims of a field in which they are working', but also master 'the rhetorical and linguistic resources through which these views, assumptions, and aims are expressed (PALTRIDGE, 2013, p.354)'. The implications for the EAP classroom are straightforward: teachers should understand both the social nature of genres and their role in a setting so as to provide learners with pedagogical experiences which are both relevant and effective.

Pedagogical implications: teaching genre in EAP

Genre-based teaching emerged as a response to the process approach to teaching in writing skills. The fact that the process approach did not address the requirements of particular writing tasks and focused on personal meanings failed to give EAP what they needed in order to communicate in academic settings. Indeed, encouraging learners to brainstorm, revise, rewrite and allowing them to create their own writing style was not enough to drive learners to notice the conventions of academic written texts and thus be able to produce texts that would comply with academic conventions (PALTRIDGE, 2014).

Genre based teaching (SWALES, 2004; HYLAND, 2007, 2008) sees text as discourse, or as 'the way we use language to communicate, to achieve purposes in particular situations' (HYLAND, 2008: 93)'. It is anchored on the idea that one needs to understand and use language to achieve social purposes in a given context (HYLAND, 2007). This focus on language forms does not imply a focus on grammar, which is detached from meaning and use, but knowledge of grammar that would allow learners to manipulate language in an effective way. In terms of teaching approach, learners are led to notice, reflect on and use language to produce well-formed and appropriate texts. Hyland (2008) proposes the learning cycle as an approach to teaching writing (Figure 1):

Figure 1: The teaching learning cycle



Fonte: HYLAND, 2008, p. 96.

The learning cycle assists teachers in planning instruction by approaching learning to write genres as a series of stages. In a nutshell, the stages lead learners into understanding the purposes of genre (the why, who, to whom, what for and when) as well as degrees of formality; analyzing and modelling the stages and key features (including tenses, themes, vocabulary); supporting students in constructing texts; monitoring students while they write their own texts; and finally relating what has been learnt to other contexts and genres, thus highlighting the social use of texts in real communication.

Badger and White (2000) advocates a process genre approach to writing, arguing that both approaches to teaching writing should not be seen in opposition, but as complementary to each other. EAP learners should be provided with instruction on genre awareness and acquisition; this means that they need strategies to respond to new and different tasks as well as acquire genre conventions, including its moves, language and social situated context of use. One pedagogical approach is to lead learners to analyze examples of particular genres in order to raise their awareness of specific language use, rhetorical organization and social disciplinary context; that is, the way a given community of scholars perceive, interpret and act when reporting research (PALTRIDGE, 2013).

Similarly, Reppen (2002) suggests a combination of process writing and activities targeting specific language skills and directing instruction on genre forms. Her suggestion is anchored on two concepts: scaffolding and awareness. In the first one, the teacher has a central role in guiding learners to accomplish a goal. He or she needs to provide learners with models to help them accomplish a task until they gain enough control to be autonomous learners. In order to do so, the teacher needs to be familiar with the learning situation, material and specific features associated with the writing students are required to produce. As an example, in addition to guiding students into noticing genre organization, the teacher should help them notice the verbs typically found in texts of different genres. Activities may include individual and joint construction of texts, text analysis and content discussion of representative texts. The second concept focuses on raising awareness of the connection between organizing information and text purpose. By becoming aware of why texts display certain organization, learners become able to evaluate their own productions and then peer-edit texts in a more effective way (REPPEN, 2002).

This focus on both organization and language is essential for L2 EAP learners. According to Hinkel (2004), 'extensive, thorough, and focused instruction in L2 academic vocabulary, grammar, and discourse is essential for developing the L2 written proficiency expected in general education courses and studies in the disciplines' (HINKEL, 2004, p. 7). In fact, in order to learn to write the formal prose required in academic and professional careers learners need to develop and advanced range of linguistic skills, including lexis and grammar.

Hinkel (2011) reviewed the research related to writing in EAL, showing that non-native written discourse is fundamentally different from L1, both in terms of its macro properties (discourse structuring and ideational development) and micro features (grammar and vocabulary). The author concluded that limited vocabulary and grammar are recurrent and frequent properties of L2 written texts. In comparison to L1 prose, L2 texts exhibit less lexical variety, inconsistent use of

verb tenses, more conversational and high frequency words, high rates of incomplete or inaccurate sentences, shorter words, repetition of content words and fewer modifying and descriptive prepositional phrases, as well as a higher rate of misused prepositions, to mention some of the differences. EAL learners' skill in grammar and vocabulary has a direct impact on the quality of L2 formal prose. These areas need to be addressed in the EAL classroom.

Writing in Academic settings

Due to the rapid development of university education and research internationally, there is a growing number of faculty members and research students wishing to publish their research. Internationalization, defined as 'the social and economic interdependence among people and countries' (FINARDI; ROJO, 2015, p. 19), is the result of global communication networks provided by the rapid spread of the internet and the ease of international travel. This has caused universities to compete globally with each other to produce research, since research output is a valued metric when universities are compared. As a consequence, international publications are becoming a requirement for masters and PhDs graduation. Lastly, the fact that English is widely accepted as lingua franca has made it the international language of research (FLOWERDEW, 2013; NICKERSON, 2013).

Flowerdew (2013) illustrated the prominence of English as the language of research presenting data from previous surveys. According to Lillis and Curry (2010), cited in Flowerdew (2013), more than 95% of top Natural Science journals and 90% of Social Science journals that are part of the Institute for Scientific Information (ISI) are published in all or some English. A more recent survey revealed that the use of English for publication in journals indexed by Scopus rose from 2008-2011 in countries such as Italy, the Netherlands and the Russian Federation while it remained stable in France, Spain and China. In Brazil, the ratio between publications in English and Portuguese is decreasing, which may be a result of 'an increase in the coverage of Brazilian journals published in Portuguese instead of English in Scopus' (VAN WEIJEN, 2012, p. 1). This is not to say that the majority of scholars that publish in English are native speakers; on the contrary, more and more research is being published by non-Anglophone scholars, who use English as an additional language.

In Brazil, there is a growing trend of using English for research, as shown by a survey from Agência Fapesp (ALISON, 2013). The number of articles written in English published in journals indexed by SciELO surpassed the number of articles written in Portuguese. The survey showed that the number of such articles increased from 38% in 2007 to 52% in 2012. There was also in increase in bilingual articles, that is, available both in Portuguese and in English. About 36% of publications in the Health Sciences are bilingual. It is important to note that SciELO indexes Brazilian journals, which is an indication that Brazilian scholars are pursuing the internationalization of their research efforts.

Such facts have a clear impact on the policies that Brazilian universities must adopt in order to cater for the language needs of researchers and scholars. Writing academically represents a challenge to those researchers who need and want to be part of the international scientific community. As a matter of fact, non-native

speakers of English who are not familiar with the genre conventions of research articles have difficulty organizing the ideas when writing. Language can also be an issue (HUANG, 2014).

In the Health Sciences, some surveys have revealed the challenges Brazilian academics face when trying to publish their research. Iglesias and Batista (2010) investigated the EAL experiences Brazilian Health Sciences graduate students have had in academic contexts. The results revealed that their reading skills are good, but their speaking and writing skills are poor. They rarely write research abstracts, resorting to professional translators whenever they need to write an abstract.

Cunha et al (2014) investigated the difficulties graduate students face when writing their research in English and the strategies they apply to overcome such difficulties. Data from a questionnaire on students' perceived problems with writing research were collected and analyzed. Medicine graduates from a prestigious university in Brazil had problems when choosing appropriate language for academic writing, including academic vocabulary and more technical terms, even though they were self-evaluated as being proficient in English. As strategies to write, students resorted to professional help to review their manuscripts and translation services. The authors concluded that proficiency in the L2 is not enough; researchers should be prepared to write academically as they start their graduate studies. Such preparation would include not only courses on academic writing, but explorations on concepts related to the methodology of scientific investigation.

Writing in English is also considered an essential skill for Spanish scholars of Medicine, who have difficulty in having their research published in international journals. In addition, a recent survey showed that Spanish scholars have received little instruction in academic writing (MARTÍN et al., 2014). According to Mungra and Webber (2010), the reasons scholars have their manuscripts rejected are related to both linguistic and methodological factors. Linguistic factors include lexical and grammatical errors, clarity and verbosity or repetition.

In the next section, we report on an experience of teaching academic writing to graduate students and present and analyze some of the written productions developed during the course. The course was offered by the Graduate Program of Infectious Disease and Tropical Medicine of a public university in Brazil in the first semester of 2016.

Academic Writing: Abstracts

In order to help Brazilian scholars, develop academic writing skills, a course on writing research abstracts was offered by the Graduate Program of Infectious Disease and Tropical Medicine of a public university in Brazil. Since scholars have their manuscripts rejected mainly due to linguistic and methodological problems (MUNGRA; WEBBER, 2010), the course was conducted by a language professional and two Medicine professors. The interdisciplinary nature from an in-service diploma course at a public university in Brazilnaturenatureof the course was an attempt to provided graduate students with the tools to tap potential problems and difficulties in their written productions, namely the linguistic and methodological factors that account for the rejection of manuscripts.

The genre abstract was chosen since it is, according to Swales and Feak (2009), the first piece that is read by reviewers when a manuscript is submitted to a journal or conference, being used as a screening device and providing immediate oversight for reviewers. Swales and Feak described the five moves (background, purpose, methods, findings and conclusion) that are generally found in abstracts, in addition to an analysis of the linguistic features commonly associated with the moves.

The course, offered in a blended mode, followed a genre-based approach to the writing of abstracts and also incorporated the ideas of process writing (cf. RACELIS; MATSUDA, 2013). Learners were guided through the stages presented in Hyland (2008). The first step was an introduction to the concept of textual genre, functions and types of research abstracts, reasons for the rejection of manuscripts, followed by a presentation and analysis of genre moves based on an abstract corpus created by learners themselves. They were then required to write their first draft of an abstract, that was later revised by peers in terms of rhetorical moves. The next step was to focus on the linguistic features of abstracts, namely verb tense use, linking words and cohesion, and vocabulary. After receiving peer and teacher feedback, learners had to write a second draft, which was submitted for a second revision. This time, teachers and learners jointly revised each text, producing a final and improved version. Both structured and traditional abstracts were produced.

An analysis of their first and revised versions showed that learners' attended to the rhetorical organization of abstracts in their discipline. Example 1 shows that, despite the fact the learner was producing a structured abstract, part of the method move was included in the objective section. Example 2, which is the revised version, shows the purpose section no longer contained part of methodology.

(1) **OBJECTIVES:** The aim of this study is to evaluate the Health- Related Quality of Life (HRQoL) of Primary Health Care (PHC) of the Unified Health System (SUS) and their associated factors. We analyzed a cross-sectional study of data from the National Research Access, Use and Promotion of Rational Use of Drugs (PNAUM) Component Services in Brazil.

(2) **OBJECTIVE:** The aim of this study was to evaluate the Health- Related Quality of Life (HRQoL) and its associated factors in Primary Health Care (PHC) of the Unified Health System (SUS).

The move finding started by referring to speficic results without mentioning the total number of participants in example 3. The revised version in example 4 started with is a more commonly used organization for this specific move:

(3) **RESULTS:** The dimensions in which users reported more often a problem were the dimensions Pain/Discomfort (50.7%) and Anxiety/Depression (38.8%). About 10% of users reported extreme problems in these dimensions.

(4) A total of 8.590 users of PHC reported its HRQoL. Pain/Discomfort (50.7%) and Anxiety/Depression (38.8%) were dimensions in which users reported more often some problem.

The conclusion also showed improvements. This move should report the answer to the research question and, consequently, reflect the research objective. Example 5, which is the first version of the conclusion move, reports a general implication of the results without providing an answer to the research question. Example 6 starts by answering the research question:

(5) The availability of information on the HRQoL of users of PHC in Brazil contributed not only to better understand their HRQoL and the factors that influence it […].

(6) These findings show that the HRQoL of this population was influenced by demographic, socioeconomic, health- related conditions and lifestyle factors. […].

Examples 7 (purpose move) and 8 (conclusion move), both from a revised version, present information in a clear and ordered way:

(7) This study assessed the parameters associated with pulmonary pressure response to exercise in patients with isolated MS.

(8) In MS patients, baseline mean transvalvular gradient, LA diameter, MVA, and C_n were important determinants of exercise-induced pulmonary hypertension

In addition to adequately organize their abstracts into moves, learners also attended to the fact that an abstract should concisely present information that will be further detailed in the remainder of the research paper. Examples 9 and 10 show the coherent and concise presentation of study purpose (9) and results (10):

(9) The aim of this study is determinate the cutoff value of PAP during exercise echocardiography associated with poor prognosis in MS patients.

(10) The best cutoff value of SPAP to predict clinical outcomes was 70 mmHg (sensitivity 90%, specificity 87%, and accuracy 90%).

The analysis of learners' written production showed that they not only attended to genre conventions but also improved their use of academic vocabulary, clarity and grammatical accuracy. Corpus analysis was an essential component of the course, raising learners' awareness to both genre conventions and linguistic features. In addition, learners improved their content knowledge in terms of research methodology through classroom discussions conducted by the Medicine professors.

Academic writing also involves the production of lexically dense texts. Such a feature is carried out particularly through the use of instances of nominalizations. In the next section, we attempt to highlight the relevance of nominalizations to academic writing, once they are a pervasive phenomenon in academic literacy.

INSTANCES OF IDEATIONAL GRAMMATICAL METAPHORS AND ACADEMIC WRITING

As Hyland (2009) points out, academic discourse is distinctive in register and mode from everyday interactions. It puts forward more specialized language that is devised

to foster authority and alleged neutrality. In order to achieve these purposes, AW tends to reconstruct processes (verbs), as if they were synoptic entities. This linguistic strategy is aimed at systematically enabling comparison, contrast and evaluation, which are accounted as valuable metacognition skills in the scientific field (MARTIN, 1993; SCHLEPPEGRELL, 2004).

In order to participate in the academic scenario, learners are expected to excel the use of the linguistic resources inseparable from this domain. As Schleppegrell (2004, p. 434) points out, these resources are usually associated with using 'lexicalized and expanded noun phrases; marking discourse structure with linguistic elements that are typical of written academic discourse; and choosing grammatical features that project an authoritative stance'. Among these characteristics, the instances of nominalizations have constantly been considered crucial to academic writing.

From a Systemic Functional perspective, instances of nominalizations uncover the presence of ideational grammatical metaphors (IGMs). They represent a move from concrete, congruent language to more abstract, incongruent or 'metaphorical' forms (HALLIDAY; MARTIN, 1993; TAVERNIERS, 2003; 2006). More specifically, IGMs render the substitution of one grammatical class (or structure), by another, for example, 'price comparison' *vs* 'people compare prices'. In this example, a process (verb) 'compare' is turned into a noun 'comparison'. The resulting instance of nominalization is a metaphorical form of its congruent clausal correspondent.

Table 1: Incongruent relation within instances of nominalization

Semantics	Actor	Process	Manner	Process
	The argument	is made	through	the use of nominalization
Grammar	Nominal	Verb	Preposition	Nominal

(Source: MARTIN, 2008)

In AW, grammar devices like these are made pervasive, as they encapsulate the proposition, which otherwise would be expressed by processes (verbs) and participants.

The presence of instances of IGM in a text also represents a discursive shift towards describing more stable and fixed scientific phenomena (HALLIDAY; MARTIN, 1993). This process allows for content to be organized, categorized, commented on and evaluated, promoting the 'flow of information through a creation of a new kind of knowledge: scientific knowledge; and a new way of learning' (HALLIDAY, 1993, p. 131).

Given that IGMs are metaphors of transitivity, a language meta-function related to how speakers represent the internal and the external worlds, they involve the selection of various processes (verbs) in their formation. This process occurs because verbs are key elements for predication and, at the same time, are 'incomplete' from a semantic point of view. For this reason, verbs can select one, two or three elements, which form transitive relations with them. This characteristic remains after the nominalization process takes over, resulting in what may be addressed as 'nominal valency' (De BONA, 2014).

In the next section, we will briefly discuss the valency of some deverbals employed in academic texts as instances of nominalizations.

IGM and the valency of deverbals

A nominalized form is an instance of IGM that also operates at the textual level (textual metafunction, in Hallidayan terms), impacting the informational structure of a text. As a derived type of term, deverbal nouns many times maintain the same argument structure of their input verb. Consequently, they can display one, two or three arguments, depending on the verb they derive from. According to Dik (1997), the arguments of the input verb (or adjective) tend to also become the arguments of the derived nouns. However, while analyzing actual texts, one can easily find out that deverbals many times do not overtly express the valency of their input verb, as it is illustrated in Excerpt 1:

> Excerpt 1
>
> Using existing Dalhousie University CME Department e-mail distribution appeared to be a logical approach for the present project; however, many of the addresses were no longer valid and there was no assurance that the individuals who would benefit most from this intervention were included in the list. The target population for the present module was physicians who treated hand injuries.[3]
>
> (Text from the Social Sciences)

The highlighted deverbals in Extract I take the following valency, considering their input verb forms:

Table 2: The valency of deverbals

Deverbals (instance of IGM)	Verb input	Number of arguments of input verb
Distribution	Distribute	2 arguments: A1 (subject), A2 (object)
Intervention	Intervene	2 arguments: A1 (subject), A2 (object)

In the case of the deverbal 'intervention', in Excerpt 1, for example, the use of the cohesive device 'this' refers to the text hypertheme. Therefore, it cannot be accounted for as an overtly expressed argument. This argument can only be retrieved through disciplinary knowledge, or through inference form other parts of the text.

The valency of the deverbal *participation* is highlighted in Excerpt II. The deverbal is referred to by means of cataphoric elements, since the arguments of the input verb *participate* (someone participates in something) are placed in a post-head position in relation to the deverbal.

> **Excerpt 2:**
>
> *The aims of BeLL are to analyze the benefits of participation in LAE from the perspective of the learners themselves.*
>
> (Text form Humanties)

[3] All fragments used in this text were taken from the Academic Domain of COCA (Corpus of Contemporary American English http://corpus.byu.edu/coca/). We thank Giovana Perini (UFMG) for having assisted us gathering these data.

When translating Excerpt 2 into a more congruent form, by removing the nominalized form, one would have the following wording:

Excerpt 3:

The aims of BeLL are to analyze the benefits on the learners who participate in LAE in their own perspective.

(Text from Humanities)

In this regard, Camacho (2007/2013), in his analysis of nominalized valency in oral speech, points out that there are pragmatic and semantic motivations for not expressing the overt arguments of a deverbal. According to him, when these arguments are not selected for overtly expression, their referents may be found in the different parts of the text, forming a referential chain (CAMACHO, 2007/2013, p. 31). Taking this referential chain into account, in the next section we will analyze the impact of instances of nominalizations to the text flow.

Nominalizations and their impact to the text flow

As we have argued before in this text, IGMs represent an important resource for creating a new form of wording through grammatical modified items (THOMPSON, 2013). Consequently, when a grammatical metaphor is used, a noun turns out to encode an event (process). This process usually involves a relationship of logical cause and effect. By the same token, in instances of nominalizations, the less consistent, and the more economical packaging of the linguistic forms render different pragmatic effects on the reader, as they also contribute to the text flow (HALLIDAY; MATTHIESSEN, 2004).

To measure the impact of IGM's on text cohesion, Liardét (2016) developed a framework of textual impact analysis (i.e. 'logogenetic impact'). Of particular relevance are the tools of anaphoric reconstrual, nominal group elaboration, and cause and effect metaphorical networks. The first measure, anaphoric reconstrual, refers to the deployment of IGMs from a congruent to an incongruent form, and *vice versa*, across larger stretches of text, for example in:

Excerpt 4

An evaluation was immediately carried vs Doctors evaluated the patients immediately.

(Text from Medical Sciences)

Employing instances of grammatical metaphors in AW is also connected to two other aspects in particular. First, in logical terms, the causal effect that the phenomenon arises, which enables non-agentive subjects as sentence topics. Secondly, it opens room for the omission of verbal arguments, which very frequently accompanies instances of nominalizations. Nonetheless, these arguments can be easily retrieved, either from the text flow, or from background/disciplinary knowledge of the competent reader.

In other words, concerning IGMs, the occurrence of a potential congruent form in the text is usually repackaged into its incongruent wording. The resulting form is

typically placed in the topic position of the subsequent clause. This process creates a given-new prosody (HALLIDAY, 1994), inherent to AW. Table 3 below illustrates this process:

Table 3: translating congruent into incongruent forms to produce instances of IGM

The present study reviewed the demographic and clinicopathologic aspects of 109 cases of SGTs diagnosed at a tertiary health center and the findings are in general agreement with data reported in previous studies. (Text in the field of Health taken from COCA)[25]	The revision of the demographic and clinicopathologic aspects of 109 cases of SGTs diagnosed at a tertiary health center and the findings of this study are in general agreement with data reported in previous studies.
The situation is assessed to be unmanageable, incomprehensible, and devoid of meaning, eliciting a secondary response of rumination. (Text from the field of Human Sciences, taken from COCA)	The assessment of the situation is unmanageable, and devoid of meaning, eliciting a secondary response to rumination.

The attempt to change incongruent or metaphorical forms into congruent ones can be sometimes very demanding, once disciplinary knowledge lies at the heart of this modification. In this regard, Thompson (2004) presents the following example (11) in order to illustrate the challenge:

(11) The braking distance increases in high speed.

The instance of IGM present in the example is only possible to be translated into more 'colloquial speech' at the expense of a great loss in its accuracy. This somehow proves that nominalizations can make a significant contribution to the AW, as they enable the creation of a lexically dense and condensed type of technical wording. These instances are sometimes almost impossible to be translated into unpacked everyday language.

Taking these processes into account, we would like to make the case that the teaching of AW should include some awareness of the importance of instances of nominalizations to the academic field, particularly in the production of abstracts, since summarizing tends to be a very demanding task. This can be done by expanding the two kinds of activities, illustrated in Table 3, for example.

These tasks highlight the potential of nominalizations to text cohesion and topic initiation. When based on texts from learners' own field of specialization, these activities can also assist them to excel competent writing, as they raise awareness of the extent to which AW relies on nominalization for vocabulary condensation. Additionally, learners can check their comprehension of the nominalized forms, and can also find their referents in the text. The identification of such a cohesive chain highly depends not only on disciplinary knowledge, but also on fully text comprehension.

4 Corpus of Contemporary American English: http://corpus.byu.edu/coca/

FINAL REMARKS

This paper aimed at discussing some of the inherent characteristics that make up a text as a representative of the academic domain. To do that, we first discussed the theoretical foundations of teaching AW, including the principles of EAP, and the notion of genre and process-writing for instruction. We then presented the rationale underlying a course on academic writing, which focused on the writing of abstracts for Medicine graduates at a public university in Brazil. An analysis of abstract samples was performed, highlighting the improvements learners made in terms of their abstracts rhetorical organization. In order to write research to be published internationally, a pressing need in the academic field, learners need to understand genres and how they are construed, as well as build enough linguistic resources in the L2 to communicate effectively in writing. Such endeavor is only possible when learners receive specific instruction in EAP, since writing instruction in secondary school does not typically include the language of academia.

In terms of the clausal analysis of academic abstracts, we highlighted the high density of the lexical forms present in this domain. We argue that these features are very significant for successful communication in the scientific world, as they correspond to meta-cognitive strategies, such as evaluating, comparing and contrasting. From this viewpoint, nominalized forms in AW may have overt arguments, related to the predicative nature of their derivation, or may display non-expressed arguments, recoverable by means of semantic processes and / or textual-pragmatic devices.

All these linguistic features should therefore be clearly addressed in the classroom, not only to enhance text comprehension, but also to enrich text construction. By doing so, learners can become better prepared to respond to the social and intellectual demands of the scientific domain.

It goes without saying that L2 writing instruction at university level should not only be theoretically informed, but also cater for undergraduate and graduate students' needs. Teachers should be aware of their learners' strengths and limitations when planning writing courses and programs, which will ultimately provide future researchers and professionals with the tools for lifelong learning.

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