Use of Research Articles in the EAP Classroom

Varga, Mirna; Kuna, Dubravka

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Abstract

The central idea of genre-based EAP teaching is assisting students to become more competent users of genres identified as key to their disciplines. As reading research articles in English is a substantial component of target courses syllabi in university settings in Croatia, a student assignment was designed to implement research articles in the EAP classroom. The assignment presented in this paper aimed to raise students' awareness of the rhetorical, metadiscoursal, and lexical features of a research article. Students were first required to identify rhetorical moves throughout four main research article sections. The next task was to find a section in a research article containing at least two different hedging expressions and to translate the section into Croatian. Finally, a lexical analysis focused on the identification of academic collocations across the research article sections. The overall results, which in most cases indicated students' increased awareness of the aspects analyzed, suggest the effectiveness of genre-based teaching in the EAP classroom. The assignment presented here may have wider pedagogical implications, in that it could serve as a generic model for analyzing the same or other academic genres across a range of EAP contexts.

Keywords: research article, EAP, rhetorical moves, academic collocations, hedges

1. Introduction

In EAP teaching practice, the notion of authenticity is primarily grounded in identifying students’ authentic needs. In simplified terms, this boils down to the question of what tertiary level students need English for and how this understanding can be successfully transferred into classroom practice. These questions broadly refer to a target situation analysis (Dudley-Evans & St John, 1998) which aims at gaining knowledge about the students’ disciplinary context, including identifying the most salient genres used in it (Hyland, 2006). The role of genre in teaching English in an academic context is closely linked with Swales (1990). His genre-based approach to academic genres is founded on the premise that genres are not idiosyncratic products of individual writing but rather the properties of discourse communities. Whether common to all (e.g. research articles) or pertaining to specific disciplines (e.g. a laboratory report), genres are
defined as classes of communicative events which exhibit some recognizable features in terms of the communicative goals common to the members of a discourse community, the structural organization, content, style, and intended audience (Swales, 1990). Driven by the idea that raising students’ awareness of the rhetorical and also lexical characteristics of genres may contribute to developing students’ academic reading and writing skills (Swales, 1990), Swales’ genre-based approach to academic writing has found much support in EAP teaching practice (Paltridge, 2013, for other approaches see Flowerdew, 2005). Special attention is given to designing awareness-raising activities which engage students in exploring different aspects of the genres relevant to their disciplines (Hyland, 2006).

The present paper illustrates an instance of genre-based teaching with respect to the use of authentic research articles (henceforth RA) in a Croatian university context. Semi-formal discussions with the undergraduate students and their professors namely indicated that RAs (mainly in English) are a frequently used academic genre in the reading lists in a number of their courses. In addition, students reported that they found reading RAs in English quite difficult. Driven by the motivation to respond to their real needs and help them in reading articles, an individually graded take-home assignment was designed in which students were asked to choose and analyze a research article of their own choice. The form of a take-home assignment seemed more suitable than class work as students had more time to familiarize themselves with the content of research articles and to work out the meaning of scientific terms or any other new vocabulary items. In addition, based on literature review of genre-based EAP instruction, a set of structural and lexical features of RAs were selected for the assignment.

The paper first discusses the role of using authentic materials in the genre-based EAP instruction. In addition, it reviews some empirical research pertinent to the tasks included in the assignment. Next, the results of each task are outlined, followed by students’ reflections on them. Finally, attention is drawn to the advantages and limitations of the assignment as well as to the recommendations for further use of RAs in the EAP classroom.

2. Literature review

2.1. Authentic materials in genre-based EAP teaching

One of the key issues in genre-based EAP instruction is the selection of authentic materials as good representatives of the genres in question (Flowerdew, 1993). Authentic or unedited original materials are understood as those primarily written for readers other than EAP learners (Bocanegra-Valle, 2010). In a genre-based EAP classroom, authentic materials are used to facilitate the process of raising students’ awareness of the way genres are produced in their target disciplines. As Hyland (2006) observes, students are guided “to explore key lexical, grammatical and rhetorical features and to use this knowledge to construct their
own examples of the genre” or understand it more effectively (p. 90). This may be achieved by designing a range of awareness-raising activities depending on the objectives of the EAP classroom. For example, in case of RAs, these activities may involve asking students to identify the segments of the text where writers outline the gaps in previous research, or to explore what lexical means are used to show the writer’s assertiveness or tentativeness in presenting claims and so forth. The decision of how, for what purpose and to what extent authentic materials will be employed in an EAP classroom depends on the goal-orientation of EAP teaching. For example, in the case of research writing classes for PhD students, authentic RAs may be applied for the purposes of familiarizing students with writing conventions in their disciplines leading to the students’ own writing. By contrast, in the case of undergraduate EAP classes taught in contexts where students are required to read but not write in a particular academic genre in English as part of their L1 content courses, authentic materials such as RAs may be used to raise the students’ rhetorical awareness (Hyland, 2006), and assist them in reading articles outside the EAP classroom.

2.2. Genre-based EAP instruction and assignment rationale

Past research has stressed the importance of raising students’ awareness in genre-based EAP instruction (Swales, 1990; Flowerdew, 1993; Hyland, 1998; Johns, 2002) and identified some common pedagogical implications with respect to designing tasks for that purpose (Swales and Feak, 1994; Hyland, 1998; Hinkel, 2004). The assignment presented in this paper focused on three aspects identified as pertinent to RAs as a genre: the rhetorical structure of RAs, hedging and academic collocations. The section which follows outlines the theoretical background as well as some research findings pertinent to the choice of the tasks included in the assignment.

The starting point of the assignment was the analysis of the underlying schematic rhetorical structure of RAs. This part of the assignment was broadly inspired by Swales’ (1990) assertion that sensitizing students to the rhetorical structure of a genre can facilitate the process of reading (and also writing) research (see Hyon (2002) for empirical support of the importance of building student’s genre sensitivity). The rhetorical structure of a RA refers to the way information is organized in each of its sections and is commonly referred to as ‘moves’ structure, whereby a move is defined as “a distinct communicative act designed to achieve a particular communicative function” (Hyland, 2006:50). Different genres are recognized by the existence of typical moves which can be further broken down into steps, yet not all of them need to be present in order for a text to belong to a certain genre. For example, in the typical introductory section of an authentic RA in psychology, writers provide background information on the topic under study, review previous research on the same topic, indicate a gap in knowledge, and position their own research by indicating its purpose (Swales, 1990; Nwogu, 1997).
The analysis of the rhetorical structure of academic genres, including RAs, has been a dominant procedure in EAP classrooms for many years (Hirvela, 2013). Moreover, empirical evidence also indicates that the explicit instruction of the rhetorical structure of academic texts may have positive effects on the development of students’ reading skills (Hirvela, 2013). For example, Sadeghi, Hassani, and Hemmati (2013) demonstrated that undergraduates who received the instruction on the textual structure of different patterns of expository academic texts (e.g. description, comparison), involving the analysis of signal words and graphic organization, performed significantly better in reading comprehension tests than those who were exposed to the text analysis through the traditional analytic approach. The latter focuses on pre-teaching of new words, reading and translation of the texts, working on the specific grammatical structures encountered in the text, followed by the reading comprehension tasks (Sadeghi, Hassani, and Hemmati, 2013).

The next part of the assignment focused on the use of hedging expressions and was largely motivated by the importance of raising students’ awareness of the way writers of RAs express caution in constructing their claims. Recognized as central to scientific writing, hedges refer to tentative, cautious language which signals that a writer qualifies a statement as an opinion rather than a fact (Hyland, 1998). Hyland (1998) argues that “hedging enables writers to express a perspective on their statements, to present unproven claims with caution and to enter into a dialogue with their audiences” (p. 6). Some of the prototypical lexical exponents of hedges in scientific writing include epistemic modal verbs (e.g. may, might, could), epistemic adjectives (e.g. a possible explanation), epistemic adverbs (e.g. a phrasal expression such as It is possible/likely that), epistemic reporting verbs (e.g. the results suggest), and so forth (Hyland, 1998). Previous experience has shown that students may have difficulties in processing hedges while reading academic texts, suggesting that it is necessary to make students more aware of their role in scientific writing (Hyland, 2000). Indeed, the empirical evidence indicates that awareness of the way hedges and other metadiscourse markers are used in academic texts makes students more effective in interpreting a writer’s stance, contributing thus to enhanced reading comprehension (Jalififar & Shooshtari, 2011; Tavakoli, Dabaghi, & Khorvash, 2010).

Finally, the purpose of the lexical part of the assignment was to draw students’ attention to the way specific academic collocations are used throughout the RA sections. Additionally, a lexical analysis of the RA was included in the assignment because of the broadly accepted notion that students’ academic English proficiency is largely dependent on their mastery of the frequent collocations specific to their disciplines (Lewis, 2000), as well as the more general academic collocations, such as those related to research activities which are common to a range of disciplines. Some research findings have shown that increasing students’ awareness of the formulaic expressions (e.g. conduct a study, evidence suggest; test hypothesis) may make it easier for them to locate the key information in the text which may in turn increase their reading speed with respect to the complex RA genre (Dhieb-Henia, 2003).
Engaging students in exploring how the specific academic collocations are used in different rhetorical sections of a RA was particularly important for the oral part of the assignment in which each student was required to summarize all steps of the research outlined in the RAs he/she had chosen to analyze. The oral part was included because we wanted the assignment to be as inclusive as possible in terms of engaging students with the authentic text not only with respect to its structure and lexis, but also the content. By summarizing the content of a RA, we could thereby devote this part of the assignment to the development of students’ speaking skills.

3. Methodology

3.1. Setting

At the Faculty of Humanities and Social Sciences in Osijek, EAP is taught as a core course in the first two undergraduate years. The assignment outlined in this paper was conducted with second-year students of Psychology (n=34) during the winter semester in the 2013/2014 academic year. Overall, the students’ level of language proficiency ranged between upper B2 to lower C1. EAP instruction takes place for two hours per week and is based on unpublished teaching materials designed by the authors of this paper. The materials mainly concentrate on academic texts dealing with topics that complement the content of the students’ target courses.

3.2. Task design

As indicated above, the analysis of RAs was implemented in the form of a take-home assignment and the instructions for the assignment were presented to the students in class. The students were given the option of choosing a RA from the available online scientific databases. In order to control the process of selecting RAs, several criteria were set. The RA had to be selected from three pre-determined Psychology sub-disciplines (Developmental Psychology, Social Psychology, and Psychology of Personality) covered by the content courses taught in the third semester. In this way, students were exposed to familiar content which was expected to enhance their motivation in doing the task. Secondly, the choice of RAs was restricted to original research articles following the conventional Introduction-Method-Results-Discussion (IMRAD) structure. Once the students had selected RAs to work on, they were required to do three major tasks in the form of a written analysis (Appendix A). It should be noted that all tasks covered in the assignment were in a more or less modified form dealt with based on the teaching materials regularly used in class so that students were generally familiar with the task types. For instance, activities on hedging expressions included the identification of tentative language in the sentences, making assertive claims more tentative by using different types of hedges, replacing the hedges identified in the sentences by synonymous hedging expressions, etc. Activities dedicated to building up academic vocabulary and terminology permeate all units covered in class materials and refer to...
recognizing key academic vocabulary in the text, working out its meaning, matching vocabulary items to form the correct academic collocations and using them in different written or spoken activities, etc. The task on moves analysis of a RA was done only once prior to the assignment and included the analysis of a shortened research article which, nevertheless, followed the IMRAD structure and contained the major moves. To sum up, the students were familiar with the lexical and the rhetorical segments of the assignment. The novelty was the application of these tasks on the authentic form of a research article.

In addition, each student was required to take an oral exam at a specified time during the office hours throughout the winter semester. It was agreed that students would send a written analysis of their chosen RA in the form of a Word document at least two days prior to the oral quiz so that the instructor had enough time to check it. The oral part of the assignment consisted of the instructor’s feedback on the students’ written analysis in the form of a discussion and students’ short oral presentations of the analyzed RAs. In presenting the chronology of the research outlined in their chosen RAs, students were required to follow the guidelines given in the instructions for the assignment (see Appendix B). Following the oral part, students were asked to submit written feedback based on the prompts given in advance (see Appendix C). Overall, 15 evaluations were collected.

4. Results

Generally, students completed the assignment quite successfully and it was not noticeable that any of the tasks represented a major problem to the students. The following sections discuss the evaluation of the results in more detail, outlining, among others, students’ reflections on each task. These comments are particularly interesting as they reveal students’ difficulties in accomplishing the tasks as well as the perceived benefits of the assignment generally.

4.1. Identification of the rhetorical moves

In the first part of the assignment students were required to identify the rhetorical moves across the IMRAD structure of a selected RA. Most students performed this task quite successfully although some of them admitted the difficulties in assigning the correct rhetorical function to a particular part of the text. This is not surprising because they do not do reading activities of this kind in their content courses. Though the moves had been previously analyzed in a shortened research article in class, it is likely that one activity was not sufficient to make some of them more skilled in analyzing an academic text in this way. Generally, students responded positively to this task, highlighting the benefits of increased awareness of the organization of RAs with respect to reading articles in their content courses. This may be illustrated by the following comment:

*Research articles are a very useful source of information for psychology students and it is important to know how they are written and what the obligatory*
sections are. This assignment was very useful because it raises awareness of structures of research articles and research articles in general. It helped us learn how to analyze research articles. In the future, we will be able to notice these structures in other articles...” (S 01)

It is interesting to note that similar reflections were also reported by students in Hsu’s (2006) and Hyon’s (2002) studies, lending even further support to the usefulness of this type of awareness-raising activity. Students’ negative comments on this part of the assignment mainly pointed to the difficulties regarding the identification of some rhetorical moves due to their similarity, especially those in the methods and results sections, as the following comment indicates:

*Some of the moves in the first task were too much alike (Describing Data Collection Procedure, Describing Experimental Procedure, Describing Data- Analysis Procedure) and may need better explanation of their meaning and differences.* (S 02)

Admittedly, an EAP practitioner who is a non-subject specialist may find this issue difficult to tackle yet it is a point worth considering in a future adaptation of the assignment. One of the possibilities to make the move analysis easier for both students and teachers is to shorten the list of possible moves i.e. to group them into broader categories, as demonstrated in Hsu’s study (2006). However, it should be emphasized that the purpose of the task was not an absolutely precise identification of moves, but rather, in this specific context and at undergraduate level, making students globally aware of the existence of a schematic structure underlying the RA genre and enhancing students’ reading comprehension skills.

4.2. Extraction of collocations

In this part of the assignment students were asked to extract various types of collocations of the given academic nouns (e.g. *research, study, finding, evidence*) by using the AWL Highlighter tool ([www.nottingham.ac.uk/~alzsh3/acvocab](http://www.nottingham.ac.uk/~alzsh3/acvocab)). This is a software program which identifies academic vocabulary in a given text based on the Academic Word List compiled by Coxhead (2000). By searching for the collocations in the text and organizing them according to different categories based on the syntactic forms of their constituents (e.g., VERB + NOUN, e.g. *conduct research*; NOUN + VERB, e.g., *evidence suggests*), students were engaged in exploring how academic vocabulary is contextually used in a given genre. The analysis of students’ responses revealed that the major problem in this task was in deciding whether a particular lexical phrase had a status of collocation or not (e.g. *several studies; a few methods*). This can be illustrated by the following comment:
What I didn’t like about the assignment was the difficulties in identifying collocations because of the poor amount of acquired knowledge in that area. (S03)

This finding was a bit surprising given the fact that the categorization was expected to follow the pre-determined categories of collocations outlined in the instructions for the assignment. These included the following categories: verb/adj. + noun, noun/prep + noun, and noun + verb. As already noted, academic collocations are regularly dealt with in class, with a continuous focus on the collocations referring to research which were central in the assignment. Nevertheless, it seems that the abovementioned reflection only supports widely reported L2 learners’ difficulties in gaining colloccational knowledge (for further research on this topic, see Ackermann & Chen, 2013) and brings attention to the need for further explanation of the form and use of lexical chunks in academic texts. Some of the students, however, did gain a deeper insight into the role of academic collocations in RAs, as indicated by the comment below:

It is very important for us, as psychology students, to be able to analyze a research article. While most of the needed literature is written in English, sometimes we have difficulties with defining some academic words and interpreting the research results. Therefore, it is useful to learn the most common collocations and expressions which are used in most research articles. (S04)

An additional remark regarding this task merits attention. Needless to say, the purpose was not the categorization of the encountered collocations for its own sake. The proposed format of organizing academic lexis into pre-determined grammatical categories was supposed to aid students notice, record, and consequently to remember the lexical chunks encountered (Lewis, 1997). The format might be modified in terms of adding additional categories, such as quantifier + headnoun so that the frequent lexical patterns (e.g. several studies) are not ignored but rather find their place as some kind of regularly occurring lexical chunks of the selected academic vocabulary. In that way students might benefit from this task even more, as they would have the opportunity to more fully investigate the lexical potential of the given academic vocabulary.

Space precludes from more detailed description, but an alternative way of dealing with academic vocabulary in this assignment would be to focus on typical formulaic expressions (e.g. The main purpose of the present study is to ...) used to signal the rhetorical function of certain moves (Swales, 1990) which might link the lexical and rhetorical part of the assignment more successfully.

4.3. Identification of hedging expressions in a RA section and translation into Croatian

In the third part of the assignment students were required to translate a part of the text which contained at least two different types of hedging expressions. As previously indicated, hedges were pre-taught in class in terms of both their
common lexical realizations as well as pragmatics of their use in scientific writing. Students seemed to be aware of the importance of the aim of this task, as illustrated below:

*In the future we will be able ... to recognize hedges and know what those hedges mean, why authors are using them and what it means when hedges are used in expressing results.* (S 05)

There were no specific negative comments regarding this part of the assignment and in most cases students recognized the English hedging device and managed to translate it with an appropriate Croatian equivalent. However, in some, admittedly rare cases, they marked a hedge in English, but failed to express the equivalent hedging effect in Croatian. For example, instead of translating the English verb ‘suggest’ with the Croatian verb ‘sugerirati’ as its direct equivalent, a student opted for the verb ‘pokazati’ (*show, demonstrate*), the meaning of which does not indicate writers’ diminished but rather neutral commitment to the proposition, as illustrated by the following:

*... the present findings suggest that violence has a stronger impact that is felt by children in a community.*

*... ovi rezultati pokazuju da nasilje ima jači utjecaj koji djeca osjećaju u zajednici.*

We believe that accounting for such mistakes is a matter of more extensive scientific research. However, if we ignore the possibility that these mistakes were only slips, it may be assumed that some students did not completely understand the underlying motivation for using hedging devices in academic discourse. Alternatively, they failed to notice the difference in the semantic weight (Hyland, 2000) and consequently pragmatic effect of the selected Croatian lexical verb, which may be related to their lack of awareness of the presence and function of hedges in the Croatian academic discourse. As expected, there were other translation errors noticed in their work; however, the discussion of these aspects is beyond the scope of the present paper. The purpose of this task was primarily to raise students’ awareness of the way hedges are used in RAs. Secondly, the translation task aimed to bring students’ attention to the existence of the same pragmatic phenomenon in Croatian scientific writing. In fact, one of the students reported that before doing the assignment she had never noticed these forms in research articles, neither in English nor in Croatian and had not considered them to be important meaning carriers. This and other students’ similar remarks pointing to increased awareness of hedging devices in RAs are indicative for at least two reasons. Though it cannot be generalized to all students, it seems that awareness of hedges was initiated. On the other hand, the fact that some students admitted fuller understanding of the function and importance of hedges in articles is slightly surprising given the fact that hedges had been previously analyzed in class on a text sample and further practiced in a variety of exercises, though mainly in isolated paragraphs or sentences. This would seem to indicate an implicit ‘power’ of the authentic text and the task which engages the students with the text in a way perceived as meaningful to them. It would appear that the
use of RA together with awareness-raising learning tasks makes the language and language learning more real to students. This implication calls for more frequent implementation of non-adapted authentic texts in EAP tailored to the students’ needs and preferences.

5. Conclusion

The purpose of the present paper was to present an example of genre-based teaching in the Croatian EAP context based on a textual analysis of RAs and activities designed to raise students’ awareness and heighten their understanding of the selected rhetorical, metadiscoursal and lexical characteristics of RAs. Several benefits of the assignment have been discussed. First, students were encouraged to become active analysts of a high-frequency genre in their discipline. By having the choice to individually select the articles to analyze, students become more autonomous learners, which may positively impact on their motivation in language learning. We believe that the main value of this type of assignment lies in the individual student’s exposure to the contextualized language in use and their own guided reflection on it. This implication is especially important for the hedging task as the pragmatics of this linguistic phenomenon can be properly understood only if explored within the institutionalized context in which it occurs (Hyland, 1998). A major shortcoming of the assignment for an EAP practitioner might be the time required for the correction of students’ assignments. In our case, the assignment was stretched almost over the whole semester, which made the correction and oral examination not too time-consuming. Apart from the possible modifications of the assignment tasks suggested above, generally, the genre-based EAP teaching presented here opens up possibilities for further exploration of RAs with respect to engaging students in the analysis of additional lexico-grammatical features in RAs (e.g., paraphrasing, or cause-and-effect structures). Though the assignment is oriented towards its pedagogical application in the classroom, the students’ perception on the beneficial effects of the assignment with respect to their immediate or future reading of RAs is an area worth exploring using qualitative and quantitative research methodology. After all, as Charles (2013) observes, research on the pedagogical value of genre analysis in EAP has been limited. However, it is expected that the assignment, presented as it is here, may prove to be a successful example of genre-based EAP teaching and that it might provide a framework for further adaptations to suit the specifics of different academic contexts.

References


Appendix A

The following tasks were included in the assignment:

1. Identification of the rhetorical moves in a research article
2. Extraction of collocations with respect to selected academic vocabulary
3. Translation of a part of the text with particular emphasis placed on hedging expressions

Appendix B

The guidelines included the following prompts:

1. The aim of the paper/research was to...
2. The research was based on the hypothesis that...
3. The research was conducted in...
4. The sample consisted of...
5. The findings suggest/indicate...
6. The limitations of the research include...
7. Further/Future research should.../It is recommended that...

Appendix C

The prompts included a reference to the points of the assignment perceived as strong, such as:

1. What I liked about the assignment...
2. I find the assignment useful because...
3. The main advantage of this kind of work is...

Students could also refer to what they perceived as weak points of the assignment and offer recommendations for further improvements, as exemplified by the following prompts:

1. What I didn’t like about the assignment was...because...
2. The assignment could be improved if ...
3. I would recommend ....