

Corpus-based teaching of research article abstract writing in L2 courses for university students

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Abstract

A genre important for presentation and dissemination of scientific achievements is the research article abstract. After the title, it is the abstract which influences the readers' decisions about whether the article is worth reading. The abstract also influences the decisions of science conference organizers about whether the paper can be accepted for presentation. In view of the students' future professional needs, the teachers of English classes at the university level should include in the curriculum of their courses teaching competence which would allow both undergraduate and postgraduate students to write a research article abstract in a convincing and credible way within the standards of academic rhetoric.

The aim of this paper is to present evidence from a classroom-based study of the effectiveness of a genre-based approach to developing academic rhetorical competence in students of English language courses. The study involved the analysis of the corpus, comprising research article abstracts, conducted by students under the teacher's guidance and assistance. Using concordancing software together with awareness-raising tasks shows how rhetorical conventions govern the structure of the research article abstract as well as the choice of grammar, lexis and style.

Keywords: *abstract, genre, corpus, concordancing software, awareness-raising tasks.*

Introduction

An increasingly competitive contemporary research world, in which the English language has become a *lingua franca* for the dissemination of academic knowledge, has imposed on academics and graduate students, alike, the necessity of publication of their researches in scientific journals. Publication of a research article (RA) is required from each member of an academic community for the presentation of scientific achievements, which is bound to their future career. Gaining, therefore, the understanding of the conventions of the rhetorical and linguistic structure of the research article and the accompanying abstract is essential for writing a coherent and logically organized academic text. This knowledge is especially important for those researchers who do not have English as their first language and also for non-native speakers' junior researchers who have just started writing research articles.

The abstract of a published paper is the first portion of the text, after the title, which is encountered by the readers. Through abstracts the writers demonstrate that they not only have some new findings to present, but that they also are credible and competent community members (Fairclough, 1995; Ventola, 1997). Moreover, abstracts serve for attracting the readers' attention and persuading them to read the following sections of the research article, and, which is equally important, for persuading the science journal editor to accept the research paper for publishing (Huckin, 2001).

In view of what was said above, the equipping students with the knowledge and skills necessary to write abstracts which are rhetorically and linguistically appropriate and adjusted to conventions of a given academic community, and which will guarantee acceptance by a science journal editor, should be included into syllabi of English language courses for university students.

The aims of this paper are:

- 1) To present evidence from a classroom-based investigation of the effectiveness of a genre-based approach as proposed by Hyland (2004) and Swales & Feak (1994, 2009).
- 2) To give students insights into generic and linguistic features of the RA abstract, showing how writers use rhetorical means to highlight their achievements and to promote their article in an appropriate manner.

The present study involved the analysis of the corpus comprising 30 research article abstracts accompanying research articles published in reputable journals from the field of medicine. The abstract analysis conducted by students under the teacher's guidance and assistance was based on the model of rhetorical moves as proposed by Swales and Feak

(2009). The use of this model and corpus concordancing software in combination with awareness-raising tasks demonstrated how rhetorical conventions govern the choice of grammar, metadiscourse markers and style of the research article abstract.

General characteristics of research article abstracts

The research article abstract is regarded as a promotional genre in which writers try to highlight their most central claims and gain readers' interest and acceptance (Berkenkotter & Huckin, 1995, p. 34). The term "genre" is defined as a type of text or discourse designed to achieve a set of communicative purposes (Swales, 1990; Bhatia, 1993, 2004). RA abstracts were first introduced into research articles in the 1960s, and since then this genre has become an indispensable element accompanying each research article.

Rhetorical patterns of abstracts have been investigated by many researchers (e.g., Bhatia, 1993; Hyland, 2004; Kaplan et al., 1994; Nwogu, 1990; Salager-Mayer, 1990; Swales and Feak, 1994, 2009; Ventola, 1997, Samraj, 2005). As Bhatia (1993, p. 78) states, an abstract is "*a description or factual summary of the much longer report, and is meant to give the reader an exact and concise knowledge of the full article*". Salager-Mayer (1990, p. 370), says that abstracts should reproduce the structure of the full paper, reflecting the moves which "*are fundamental and obligatory in the process of scientific inquiry and patterns of thought*". Hyland (2004) and Swales and Feak (2009) underline the role of abstracts in the writers' claiming the significance of their research and in influencing the readers' decisions about whether the accompanying article is worth reading.

For the analysis of rhetorical macro-organization of RA abstracts, the researchers such as Santos (1996), Hyland (2004), Swales and Feak (2009) postulate an abstract organization composed of five moves. These moves are: (1) introduction/background; (2) purpose; (3) method(s); (4) results, and (5) conclusion(s). A move has been defined by Swales (2004, p. 228) as "*a communicative unit performing a particular rhetorical function. Its length can vary from a phrase to a paragraph*". The schema of moves in an RA abstract proposed by Swales and Feak (2009) is presented in Table 1.

TABLE: 1

Rhetorical Moves in Article Abstract (Swales & Feak, 2009, p. 5)

Move	Typical function	Implied questions
1	Background/introduction/situation	What do we know about the topic? Why is the topic important?
2	Present research/objective/purpose	What is this study about?
3	Methods/materials/subjects/procedures	How was it done?
4	Results/findings	What was discovered?
5	Discussion/conclusion/implications/recommendations	What do the findings mean?

RA abstracts are categorized, according to the information they provide, into two types: indicative (those which only indicate what kind of research has been done), and informative (those which additionally provide the main results). According to their macro-structure, RA abstracts can be classified into structured (divided into sections with subtitles), or traditional (without any division into sections) (Swales & Feak, 2009).

Study design

Context of the study

The study included 34 students in the fourth year of medical studies – the participants of two classes of their obligatory EMP (English for Medical Purposes) course at the Medical College of the Jagiellonian University in Krakow. The students' level of proficiency in English was intermediate - upper intermediate. The duration of an experiment was 10 hrs, scheduled 2 hrs weekly.

The corpus for the RA abstracts analysis included a total of 30 experimental research article abstracts selected from reputable journals in the field of medicine. All these articles had been retrieved online from the University Library. The selected papers were written by native speakers of English. All the abstracts in our corpus were of the structured type, with the labelled sections. It must be noted that the sections do not always correspond to rhetorical moves.

The students performed the analysis of the rhetorical organization of each RA abstract with reference to the rhetorical moves presented in Table 1. The lexico-grammatical features analyzed included tense, voice, and metadiscourse items such as modal auxiliary verbs (e.g.

may, might, can, could), which tone down the assertiveness of the statements, and first person pronouns (*I* and *we*), by the use of which the writers emphasize their role in the research.

Tense and voice analysis was conducted manually by counting and recording their occurrence in the particular sections of the RA abstracts, whereas lexical items and pronouns were analyzed using a concordancing software *MonoConc Pro 2.2*.

Data and method

Before the analysis of the abstracts, the students of both classes underwent brainstorming activities in which they discussed macro-structure of RA abstracts, talking about the functions and content of each section. Then the students, working in pairs or small groups, received a corpus composed of abstracts (15 abstracts for each class) along with a set of tasks designed by the teacher (the author of this paper).

The aim of these tasks, which were performed both while reading and after reading the texts, was to guide the students' analysis, and to heighten their awareness about the rhetorical organization and linguistic features of RA abstracts. These tasks comprised deductive, discovery-oriented activities, which drew the students' attention to the rhetorical functions of particular sentences or parts of the text. The tasks included open-ended questions; gap-filling; filling the table with comments and phrases supporting these comments; matching the portions of the text with the moves; identifying linguistic and metadiscourse devices and their roles in the text. The examples of these tasks are given below.

Task: 1

Answer the following questions with the reference to your corpus.

- 1) How many labelled sections do the abstracts contain? Do these sections correspond to the moves given in the model in Table 1?*
- 2) Which is the most frequent opening move and what is its function?*
- 3) What comes first in the background/introduction move in your corpus: the statement of current knowledge in the research area or the statement of problem (uncertainty) to be solved?*
- 4) How does the writer justify the necessity of the research being reported?*
- 5) What information does the methods move comprise?*
- 6) How is the results section organized – which information in your corpus comes first: about the general results or about specific ones?*
- 7) In the results move, are exact or approximate numbers provided?*

8) What does the conclusion move underline – benefit importance, novelty, or applicability of the reported results?

9) What does the writer want to say in the last sentence of the conclusions move?

Task: 2

Insert the examples of each move into a proper box in the Table 2.

TABLE: 2

An example of the table completed by the students in Task 2

Sr. No	Move	Abstract 1	Abstract 2	Abstract 3
1	Background/ Introduction	<i>...wave reflection has been reported to predict cardiovascular ...</i>	<i>Pooled analyses of randomized trials show ...</i>	<i>No background</i>
2	Purpose/ Objective	<i>This study investigated whether ...</i>	<i>This study was designed to determine ...</i>	<i>To update a review that assessed ...</i>
3	Methods/materials/ subjects/procedures	<i>Measurements of ... were performed</i>	<i>Individual patient data ... were obtained from ...</i>	<i>Randomized placebo controlled study ...</i>
4	Results/findings	<i>WRI and cAI_x were correlated ...</i>	<i>There was no significant increase in cGMP ...</i>	<i>For prophylaxis, neuraminidase inhibitors had no effect ...</i>
5	Discussion/ conclusions	<i>An RI strategy reduces ...</i>	<i>These data should be taken into account ...</i>	<i>Neuraminidase inhibitors might be regarded as ...</i>

Having completed the analysis of the abstracts, the representatives of each pair or group presented their findings in the whole class context, after which the teacher summed up the results of the students' analysis.

To reinforce the in-class genre-analysis, the students were given two out-of-class assignments: (1) the independent analysis of moves in an abstract of a research article selected by them; (2) writing an abstract to an article provided by the teacher.

Results and discussion

There are two types of results of the presented research:

1. Results of the analysis of the rhetorical structure and linguistic features of the studied RA abstracts.
2. Results of an evaluation of the effectiveness of the acquisition of RA abstract writing skills by students.

The students' exploration of the corpus of 30 RA abstracts, conducted with reference to the model of rhetorical moves presented in Table 1, enabled them to decipher the moves present in each abstract, as well as their rhetorical structure and functions.

The analyzed abstracts are similar in terms of the type and amount of moves, and their macro-organization (all of them have labelled sections). There are, however, some subtle differences between these abstracts, which concern mainly the number of moves, the textual space they occupy, and the order in which they are presented. The frequency with which the five moves occurred in the abstracts from our corpus is presented in Table 3.

TABLE: 3
The frequency of Occurrence of Particular moves in the Corpus

Moves	Frequency
1. Background/ Introduction	22 (78%)
2. Purpose/ Objectives	25 (70%)
3. Methods/materials/subjects/procedures	30 (100%)
4. Results/findings	30 (100%)
5. Discussion/conclusions	30 (100%)

The analysis has revealed that in 17 (57%) abstracts the initial move is the Background/Introduction move, and in 13 (43%) abstracts – the Objectives move. According to Hyland (2004, p.68), the function of the Introduction move is “*setting the scene for the reader, providing essential background to the paper, and equally importantly, indicating the significance of the topic to the community*”. The authors of eight abstracts without the Background move, as Hyland (2004, 68) assumes, “*seem to presuppose the background to be recoverable from the knowledge possessed by readers*”. The Introduction move provides a context for the study with the indication of a gap in the current knowledge or a problem to solve, which justify the research being reported.

The Purpose/Objective move provides the aim(s) for the presented study, using a variety of “presentation verbs”, which, according to Hyland (2004, p. 69), mark the authors' intentions (e.g., *compare, conduct, investigate, examine, test*), or signal results (e.g., *ascertain, assess, demonstrate, determine, document, identify*).

The Methods move provides information about material, participants, length and localization of research, as well as methods used in the experiment. Since this move gives a lot of information within a small space, it is the most densely packed part of the analyzed abstracts.

The greatest textual space in the analyzed abstracts is occupied by the Results move where the general results are presented first, followed by the specific ones.

All the 30 abstracts of our corpus terminate with the Conclusion(s) move. Hyland (2004), Santos (1996) and Swales and Feak (2009) argue that in an RA abstract two moves play the most important role, namely, the Introduction, the function of which is to promote the importance of the presented research, and the Conclusion(s), the role of which is to emphasize the significance of the research results. As Hyland (2004, p. 68) asserts, “*The conclusion move explicitly announces the wider significance of the research to the discipline and implicitly suggests a line of further research*”. Out of 30 abstracts, 10 (33%) finish with the sentence which gives implications for practical application of the research and/or recommendations for further study in the research area.

Our corpus was also analyzed for some linguistic features. A pattern for the use of tense has been noted: the sentences in the Objectives, Methods and Results moves are in the past tense while the Background and Conclusion moves are in the present tense. Another noticeable pattern refers to the use of the passive voice: the Methods and Results moves show a predominance of the passive voice, whereas the active voice is favoured in the Background, Objectives and Conclusions moves.

The occurrence of linguistic features in the analyzed abstracts is summarized in Table 4.

TABLE: 4

The linguistic features found in particular moves of the analyzed abstracts

Linguistic features	Background	Objectives	Methods	Results	Conclusions
Present tense	X				X
Past tense		X	X	X	X
Passive voice	X		X	X	X
Active voice		X			X
modal verbs				X	X
We, our		X	X		X

Conclusion

The analysis of the corpus of RA abstracts performed by the students, guided by the tasks, as well as an explanatory feedback provided by the teacher has increased the students' understanding of both rhetorical organisation and linguistic features of this type of academic genre. This methodology, as the results of out-of-class tasks have shown, can be effectively employed in English language courses for university students. Teaching the students how to write a properly organized abstract requires raising their awareness of the important features that are used in that genre. By doing a corpus-based analysis comprising RA abstracts related to their discipline, students are made aware of generic conventions that are valid in their discipline.

To sum up, the performance of genre analysis coupled with tasks seem to be an effective method of developing in university students the skills and competence necessary for writing RA abstracts within the obligatory conventions of an academic community.

References

- Berkenkotter, C. & Huckin, T. N., (1995). *Genre Knowledge in Disciplinary Communication*. Hillsdale, NJ: Lawrence Erlbaum.
- Bhatia, V. K., (1993). *Analysing Genre: Language use in professional settings*. London: Longman.
- Bhatia, V. K., (2004). *Worlds of Written Discourse: A genre-based view*. New York, NJ: Continuum.
- Fairclough, N., (1995). *Critical Discourse Analysis*. London: Longman.
- Huckin, T. N., (2001). *Abstracting from Abstracts*. In M. Hewings (Ed.), *Academic Writing in Context*. Birmingham: University of Birmingham Press.
- Hyland, K., (2004). *Disciplinary Discourses: Social interactions in academic writing*. London: Pearson Education Ltd.
- Kaplan, R., et al, (1994). *On abstract writing*. *Text*, Vol. 14, 401-426.
- Nwogu, K. N., (1990). *Discourse variation in medical texts: Schema, rhymes and cohesion in professional and journalistic accounts*. *Monographs in Systemic Linguistics, II*. Nottingham: University of Nottingham.
- Salager-Mayer, F., (1990). *Discoursal flaws in medical English abstracts: A genre analysis per research and text type*. *Text*, Vol. 10, No 4, 365-384.
- Samraj, B., (2005). *An exploration of a genre set: Research article abstracts and introductions in two disciplines*. *English for Specific Purposes*, Vol. 24, 141–156.

- Santos, M. B. D. (1996). *The textual organization of research paper abstracts in applied linguistics*. *Text*, Vol. 16, 481-499.
- Swales, M. J., (1990). *Genre Analysis: English in academic and research settings*. Cambridge: Cambridge University Press.
- Swales, M. J. & Feak, C. B., (1994). *Academic Writing for Graduate Students: Essential tasks and skills*. Michigan: the University of Michigan Press.
- Swales, M. J. & Feak, C. B., (2009). *Abstracts and the Writing of abstracts*. Michigan: the University of Michigan Press.
- Ventola, E., (1997). Abstracts as an object of linguistic study. In C. Cmejrkova, F. Danes & E. Havlova (Eds.), *Writing vs. Speaking: Language: Text, Discourse, Communication*. Tübingen: Günter Narr, s. 333–352.

