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A Genre Analysis of Research Article Abstracts in Linguistics and Engineering: a Cross Disciplinary Study Based on a Contrastive Analysis of Micro Structures

Analiza gatunkowa abstraktów artykułów naukowych z dziedziny językoznawstwa i inżynierii: badanie interdyscyplinarne na podstawie analizy kontrastywnej mikrostruktur

Abstract

The significance of a research article abstract has recently turned the focus of linguistics on the Genre analysis of abstract articles. Taking into account this wide research topic, this study aims at investigating the micro structures in the linguistics and engineering abstracts. In the previous studies, this comparison has not been addressed by the researches, hence the present study aims to fill in the gap. The corpus contained 30 abstracts, 15 of linguistics and 15 of engineering. The micro analysis was carried out on the basis of Swales and Feak's (2009) model. The results revealed that there was no very significant difference between the linguistics and engineering abstracts at the micro level. This study is deemed to be beneficial for the researchers as it provides a framework of analyzing two different disciplines in terms of their abstracts.

Key words: *Genre analysis, research article abstracts, linguistics, engineering, micro structures.*

Abstrakt

Znaczenie abstraktu artykułu naukowego skierowało ostatnio centrum zainteresowania lingwistyki na analizę gatunkową streszczeń artykułów. Biorąc pod uwagę szeroki zakres tego tematu badawczego, niniejszy artykuł ma na celu zbadanie mikrostruktur abstraktów w dziedzinie językoznawstwa i inżynierii. W poprzednich badaniach takiej analizy nie dokonywano, stąd niniejsze badanie ma na celu wypełnienie luki w tym kierunku. Korpus obejmuje 30 abstraktów, 15 z dziedziny lingwistyki i 15 z dziedziny inżynierii. Mikroanalizę przeprowadzono w oparciu o model Swalesa i Feaka (2009). Wyniki badań wskazują, iż nie ma bardzo istotnej różnicy między abstraktami lingwistycznymi i inżynierskimi na poziomie mikrostruktur. Wyniki przeprowadzonych badań mogą być przydatne dla naukowców, ponieważ zapewniają podstawę do analizy dwóch różnych dyscyplin pod kątem abstraktów artykułów naukowych.

Słowa kluczowe: *analiza gatunkowa, abstrakty artykułów naukowych, językoznawstwo, inżynieria, mikrostruktury.*

Introduction

English language is used as lingua franca in all the fields including linguistics and engineering. The proper command of English allows researchers "to get access to the latest information in their fields and to effectively communicate with their colleagues throughout the world". (Yakhontova, 2003, p. 14) A vast amount of research in English is published in journals and research articles (RA) have become the centre of importance in the academic world.

"Researchers rely on the abstract as a concise and accurate representation of the contents of a document". (Salager-Meyer 1990, p. 366; Rowley 1988, p. 10) Abstracts are important for a number of reasons. First, they save reading time, as the target reader can gauge if the full-text document is likely to be of sufficient interest to warrant reading in its entirety. Second, RAs help overcome the language barrier – they allow the reader access to the central themes of an article written in a foreign language. Third, RAs can provide some language preparation for the text by using key words and ideas that are used in the full-text document. Fourth, "a well-written abstract can serve as a key to understanding fully the argument of the original article". (Swales 1990, p.179) Fifth, a RA serves the function of a current awareness tool. Finally, "as a post-reading phase, the abstract can act as a reminder to the contents of the article and can help to consolidate ideas and opinions regarding the research". (Salager-Meyer, 1990, p. 367)

"Genre has been defined and used mainly as a classificatory tool, a way of sorting and organizing kinds of texts and other cultural objects". (Othman, 2011, pp. 67-68) Flowerdew (2014) defines genre analysis as "the study of situated linguistic behaviour in institutionalised academic or professional settings". (p. 22) Swales (1981, 1990, 2002, 2004), Hyland (2000, 2005, 2009, 2013) Dudley Evans's (1986, 1988), Bhatia (1993), Lores (2004), Santo (1996), Cross (2006) and other researchers wrote on the genre analysis of RA abstracts.

A small number of studies that posit abstracts within the context of textual, discourse and genre analysis have appeared. These studies deal with abstracts as a particular text-type that lends itself particularly well to genre analysis. Genre analysis is seen as valuable because it is clarificatory, and it "provides a communication system for the use of writers and writing, and readers and critics in reading and interpreting". (Swales, 1990, pp. 42-45) "There is growing evidence that scientific and technical communication depends on both linguistic competence and knowledge of appropriate structure of genres and the forms of their linguistic representation". (Busch-Lauer, 1995, p. 769)

Many researchers worked on this topic of research article abstracts and the majority of them compared the native and non-native RA abstracts. Some focused on the abstracts of sciences, some on the social sciences and some compared the abstracts of sciences and social sciences. A less or none importance is given to the comparison of linguistics and engineering abstracts, hence to fill this gap the present research will illustrate the contrastive analysis of the linguistics and engineering abstracts.

Although the focus of this paper is the analysis of abstracts at micro level, including a lexical analysis, a high quality and up-to-date general overview of contemporary English lexical and word-formation possibilities, which could be applied in future for further analyses of RA abstracts, has been given by Bednarova-Gibova and Jesenska (2019).

Aim and research questions

This paper aims to investigate the differences and similarities between the English linguistics and engineering abstracts. Two research questions are to be addressed in this paper:

1) What similarities at the micro level, help to compare linguistics and engineering abstracts?
2) What differences at the micro level, help to distinguish linguistics and engineering abstracts?

Literature review

Genre analysis of RA abstracts is a widely addressed topic in research. Zhang and Zhang (2014) found that 85 of the 448 research articles in the 97 issues of the journals published from 1986 to 2012 were concerned with research articles. Some researchers have published on the genre analysis of research articles' introduction sections, acknowledgements and abstracts.

Hyland (2005) gave a description of micro structures regarding RA abstracts in his book "Metadiscourse". A number of studies have been made on genre analysis of RA abstracts and mostly the researchers shed light on the native and non-native abstracts comparison. Behnam and Golpour (2014) gave a comparison between English and Iranian RA abstracts in the two disciplines of mathematics and applied linguistics. They dealt with the cross-linguistic and cross-disciplinary variations by using the move structure method of Hyland (2000). They emphasized the importance of move step analysis and explained that, "the knowledge obtained from the cross-linguistic analysis has displayed how move step analysis is a valuable analytical tool for understanding cultural differences in the rhetorical structure of RA abstracts". (Behnam & Golpour, 2014, p. 178) Al-Khasawneh (2017) also addressed the differences between the native and non-native RA abstracts.

One of the genre characteristics is the occurrence of communicative purpose. Communicative purposes become the characteristic of genre that differentiate one genre to another. This means that what makes a communicative event belongs to the same genre will be defined by the communicative purpose. It was explained by "the principal criteria feature that turns a collection of communicative events into a genre is a shared set of communicative purposes". (Swales, 1990, p. 46) Bhatia states that "communicative purposes are reliable to be the criterion in determining a genre as well as to distinguish it from other genres". (Safnil, 2000, p. 5) Thus, "the communicative purposes are of primary importance in creating a genre". (Lakic, 2000)

Tense is encoded in the part of the verbal group called finite. The interpersonal role of finite for tenses is a sign of time in relation to the speaker. Tenses used in the RA abstract vary from the past to the present tense. The use of the tenses is also related to moves. For example, situating the research Move is more likely to use present tense. Other Moves like Purpose, Method, and Result Moves tend to use the past tense.

"Past tense is usually used for purpose, methods and results". (Samraj, 2002, p. 42) Meanwhile present tense is used in the background and conclusion. However, Salager-Meyer emphasizes that "the tense choice is a rhetori-

cal choice and not an obligatory constraint". (Samraj, 2002, p. 43) Thus, one might write Purpose or Result using the present tense instead of the past tense. Salager-Meyer found that the uses of tenses are varied.

The use of personal pronoun seems to have been shifted from Graetz era to nowadays. Graetz observed that the third person pronoun was found in an abstract, but nowadays studies demonstrate the use of the first personal pronoun. Referring to Hyland's explanation, the use of personal pronouns in academic writing reveals overt acceptance of personal responsibility for the claims being made.

Corpus and methodology

Corpus

The corpus for this study was selected from International Journal of English Linguistics (vol. 11, no. 1, vol. 11, no. 2, 2021) and International Journal of Engineering (IJE) (volume 34, issue 6, Transactions C: Aspects, June 2021). The corpus consisted of 30 abstracts, selected randomly.

Methodology

This study aims at comparing the micro structure of Research article abstracts in English linguistics and engineering abstracts by using Swales and Feak's (2009) model for micro structure analysis. For the micro level Swales and Feak's (2009) model was selected because it gave the framework for deeply analyzing a text.

The micro analysis by Swales and Feak's (2009) used in this research consists the following variables:

- length of abstract;
- use of tense;
- presence of any citation;
- presence of 1st person pronoun;
- acronyms.

Findings and discussion

The following table shows the micro level results:

Table 1: Variables in the abstracts (source: author's own findings)

Variables	**Linguistics abstracts**	**Engineering abstracts**
Length of abstract	2 (13%) less than 250 words 11 (73%) less than 200 words	4 (27%) less than 250 words 9 (60%) less than 200 words

	1 (7%) less than 150 words 1 (7%) above 250 words 0 (0%) above 300 words 0 (0%) less than 100 words	2 (13%) less than 150 words 0 (0%) above 250 words 0 (0%) above 300 words 0 (0%) less than 100 words
Use of tense	8 (53%) Present tense + Past tense 3 (20%) Past tense + Present tense 3 (20%) Present tense 1 (7%) Past tense 0 (0%) Present tense + Past tense + Future tense	4 (27%) Present tense + Past tense 0 (0%) Past tense + Present tense 1 (7%) Past tense 9 (60%) Present tense 1 (7%) Present tense + Past tense + Future tense
Presence of any citation	0 (0%)	0 (0%)
Presence of 1st person pronoun	3 (20%) – "we" 2 (13%) – "our" 0 (0%) – "us"	0 (0%) – "we" 2 (13%) – "our" 0 (0%) – "us"
Acronyms	10 (67%)	13 (87%)

At the micro level the abstracts were analysed to identify the variables i.e., length of abstract, use of tense, presence of any citation, presence of 1st person pronoun.

The length of the linguistics and engineering abstracts were quite similar. 73% of the linguistics abstracts contained less than 200 words while 60% of the engineering abstracts contained less than 200 words. This similarity in the length of abstract in the two disciplines shows that the abstracts from both fields need a similar number of words for the explanation. This may be due the fact that both linguistics abstracts and engineering abstracts include technicalities. An exception was noted that one of the linguistics abstracts was showing maximum word count i.e., more than 250 words. This exception shows that linguistics abstracts can also be quite extended at times. This type of exception was not found in the engineering abstracts.

The majority of linguistics RA abstracts (53%) contained predominantly the present tense with the past tense forms. An interesting observation here is that the present tense was mainly used in the initial moves of the abstract whereas the past tense forms were used in the result sections. It may be due to the fact that present tense is used to present the current state of affairs. The Past tense is used to provide the results or finding already made in the given area. However, this tendency was not followed in the case of the engineering abstracts analysed. More than half (9) engineering RA abstracts used the Present tense only. None of the abstract analysed contained citation. The result section in these abstracts was written with reference to the present situation rather than previous findings.

The total of 5 RA abstracts in the field of linguistics contained plural first-person pronouns (we, our) whereas only 2 engineering abstracts contained

"our". This finding shows that the use of personal pronouns in RA abstracts analysed is not common and the general tendency is to omit these pronouns.

The acronyms were widely used in the linguistics abstracts (10 out of 15) and engineering abstracts (13 out 15). This can be explained by the technicalities used in both domains. Examples of abbreviation in the linguistics abstracts are the following: China's Standards of English Language Ability (CSE), English Language Teaching (ELT), Oman Tourism College (OTC), serial verb construction (SVC), Cognitive Metaphor Theory (CMT). Examples of abbreviation in the engineering abstracts are as follows: Fibre Reinforced Concrete (FRC), land cover land use (LCLU), hyperspectral images (HIs), frequency-locked loop (FLL), multiphase sinusoidal oscillator (MSO), total harmonic distortion (THD), Primary User Emulsion Attack (PUEA), Flexible Alternative Current Transmission Systems (FACTS).

Conclusions

The comparison between the linguistics and engineering abstracts showed a range of similar and distinctive features at the micro level between the linguistics and engineering RA abstracts. Hence, both research questions posed have been argued. A range of similarities have been found at the micro level that help to compare linguistics and engineering abstracts. Some differences at the micro level have been revealed to distinguish linguistics and engineering abstracts.

Certain similarities have been revealed between the linguistics and engineering RA abstracts. First, abstracts from both domains are relatively similar as regards the length of the abstracts and the number of words used. This fact can be explained by the technicalities used in the explanations in abstracts from both fields. Second, the initial moves of both groups of abstracts contain the present tense forms. This may be due to the fact that the initial moves such as introduction, presenting the research, etc., refer to the current state of the study. Third, no cases of citations have been found in the abstracts analysed. Finally, a very low percentage of abstracts from both fields contain personal pronouns. This shows the tendency of presenting the research in the impersonal mode focusing on the research itself rather than on the researchers who carry it out.

Some different features also have been noted among the two groups of abstracts analysed. First, the past tense forms are considerably more frequently used in the linguistics abstracts, especially in the final section of the abstract, such as presenting the result. The engineering abstracts predo-

minantly contain the present tense throughout the whole body of the abstract. Second, authors of engineering abstracts use an abundance of acronyms and abbreviations. The reason for such a frequent usage of acronyms is the specific and technical language used in engineering abstracts.

One can conclude that apart from being different disciplines, the comparison between linguistics and engineering abstracts did not show a very significant difference at the micro level. Hence, one can come to the conclusion that the linguistics and engineering abstracts do not show prominent differences at the micro level and seem rather similar.

The performed study is relevant in the field of genre analysis as it highlights the similarities and differences between abstracts of linguistics and engineering at the micro level.

This study was confined to two specific disciplines and research in different disciplines may reveal other interesting and helpful results. The results of this study can be used for further more detailed comparative studies in the same or different disciplines. They can also be helpful for the novice researchers who learn how to write proper RA abstracts.

Bibliography

Al-Khasawneh, F. M. (2017). "A genre analysis of research article abstracts written by native and non-native speakers of English". In: *Journal of Applied Linguistics and Language Research*, 4(1).

Bednarova-Gibova, K. & Jesenská, P. (2019). *Selected Chapters in English Lexicology. Part II: Phraseology and Word-formation*. Prešov: Vydavateľstvo Prešovskej university.

Behnam, B., & Golpour, F. (2014). "A genre analysis of English and Iranian research articles abstracts in applied linguistics and mathematics". In: *International Journal of Applied Linguistics and English Literature*, 3(5). https://doi.org/10.7575/aiac.ijalel.v.3n.5p.173.

Bhatia, V. K. (1993). *Analysing Genre: Language Use in Professional Settings*. London: Longman.

Bhatia, V. K. (1997). "Introduction: Genre analysis and world Englishes". In: *World Englishes*, 16(3).

Busch-Lauer, I.A. (1995), "Abstracts in German medical journals: a linguistic analysis". In: *Information Processing and Management*, vol. 31, no. 5.

Dos Santos, M. B. (1996). "The textual organization of research paper abstracts in applied linguistics". In: *Text-Interdisciplinary Journal for the Study of Discourse*, 16(4). https://doi.org/10.1515/text.1.1996.16.4.481.

Feak, C. B., & Swales, J. M. (2009). *Telling a research story: Writing a literature review*. University of Michigan Press. https://doi.org/10.3998/mpub.309338.

Flowerdew, J., & Dudley-Evans, T. (2002). "Genre analysis of editorial letters to international journal contributors". In: *Applied Linguistic*, 23(4).

Flowerdew, J. (2014). *Academic discourse*. Routledge. https://doi.org/10.4324/9781315838069.

Graetz, N. (1985). *Teaching EFL students to extract structural information from abstracts*. In: J. M. Ulign, & A.K.

Hyland, K. (2000). *Disciplinary discourses: Social interactions in academic writing*. London, UK: Longman.

Hyland K. (2003). "Genre-based pedagogies: A social response to process". In: *Journal of Second Language Writing*, 12.

Kanoksilapatham, B. (2007). "Rhetorical Organizations of Research Article Introductions in Biochemistry and Microbiology.ESPMalaysia". In: *A Journal on English for Specific Purposes*. 13 (2).

Lorés, R. (2004). "On RA abstracts: from rhetorical structure to thematic organisation". In: *English for Specific Purposes*, 23(3). https://doi.org/10.1016/j.esp.2003.06.001.

Lorés, R., & Bondi, M. (2014). "Introduction. Abstracts in Academic Discourse. Variation and Change". In: *Linguistic Insights*, 187.

Othman, A. K. A. (2011). *Genre Analysis: An Investigation of MA Dissertation Abstracts*.

Rowley, J. E. (1988), *Abstracting and indexing*, 2nd ed., Bingley, London.

Salager-Meyer, F. (1990). "Discoursal flaws in medical English abstracts: a genre analysis per research – and text – type". In: *Text*, vol. 10, no. 4.

Samraj, Betty. (2002). Disciplinary Variation in Abstracts: The case of Wildlife Behaviour and Conservation Biology. In: John Flowerdew (ed.), *Academic Discourse*. Harlow: Pearson Education.

Santos, M. B. D. (1996). "The textual organization of research paper abstracts in applied linguistics". In: *Text*, 16(4).

Swales, J. M. (1981). *Aspects of article introductions*. Birmingham, England: Language Studies Unit, University of Aston.

Swales, J. M. (1990). *Genre analysis: English in academic and research settings*. Cambridge, UK: Cambridge University Press.

Swales, J. M. (2004). *Research genres: Explorations and applications*. Cambridge, UK: Cambridge University Press.

Swales, J. M., & Feak, C. B. (2009). *Abstracts and the writing of abstracts.* Ann Arbor, MI: University of Michigan Press.

Yakhontova, T. V. (2003). *English academic writing for students and researchers.* Lviv: PAIS.

Zhang, G., & Zhang, L. (2014). "A Survey of the Research on Research Articles in English for Specific Purposes" (1986-2012). In: *Taiwan International ESP Journal*, 6(1).

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