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Special issue on specialised discourses

CONTENTS

INTRODUCTION

Over the last 50 years, English for Specific Purposes (ESP) has grown into a diverse and expanding discipline encompassing two main strands – English for Academic Purposes (EAP) and English for Professional Purposes (EPP). Rooted in the functional approach to the study of language in specific contexts of use, the importance ESP has been steadily increasing in the modern world where English is used as the medium of instruction and the lingua franca of academic, business and workplace communication. Current ESP research has focused primarily on describing different registers and genres to reveal disciplinary and intercultural variation in the use of specialised English. The findings of these studies have informed explorations aiming at realising the second important goal of ESP – the support of the teaching and learning of specialised registers. In the last decade, with the transition of a substantial part of academic and professional communication online, ESP research has embraced new directions related to the study of new digital genres which use the multimodal affordances of online communication to reach wider and more diversified audiences.

The purpose of this Special Issue is to highlight the growing interest in the study of specialised discourses in English and to provide a modest insight into the current research trends in this area. The idea for this Special issue emerged during *The Tenth Brno Conference on Linguistics Studies in English*, which was held at the Faculty of Education, Masaryk University in September 2023. The diversity of the research projects presented at the conference confirmed the importance of studying specialized discourses with a focus on the communication, discourse strategies and disciplinary nuances, and also indicated some new trends in academic research.

The papers included in this Special Issue explore different types of academic and professional discourse by means of genre-analysis, corpus-based analysis and (multimodal) discourse analysis within the field of both expert and learner discourse. They represent most current directions in ESP research by exploring professional and learner academic discourse, multimodal digital communication and the teaching and learning of professional discourse.

The genre of the research article is explored in two papers seeking to reveal the generic structure of its part-genres and the discipline-specific expression of stance. *Safnil Arsyad* examines the methods sections of research articles in English language education to determine how scholars present and justify their research methods, which is essential for the positive reception of their research and its findings. The novelty and importance of this corpus analysis stems mainly from the fact that existing studies into the methods sections of research articles have traditionally focused on their structure, while the area of research methodology itself can be considered rather under-researched. Arsyad has found out that in his corpus of sixty articles taken from six high-impact international journals the qualitative method is adopted most frequently, while the quantitative and mixed methods are equally common. Scholars focus on providing sufficient information about data analysis, data collection, the participants and research tools. Although they explain their research methods, they usually do not justify them openly. On the other hand, Arsyad notes that there is a lot of variation between journals.

Another paper dealing with research articles is the study by *Zahra Nasirizadeh* and *Shamala Paramasivam* that investigates stance markers in forty forestry research articles across the research article sections (Introduction, Methods, Results and Discussion). Hedges and self-mentions have been identified as the most frequent stance markers, with the former being employed mainly in Introductions and the latter mainly in the Methods sections. In the Results section, boosters and attitude markers were found prevalent, while in the Discussion sections it was boosters and self-mentions.

Research into learner discourse is represented by two studies on the genre of abstracts. *Cita Nuary Ishak*, *Yazid Basthomi* and *Nurenzia Yannuar* investigate hypes in theses abstracts by Indonesian students. Hypes have been found across all the theses abstracts moves, although they were most prominent primarily in the introduction, where they were used to point to the importance of the research. Since the corpus included theses abstracts written between 2011 and 2020, the authors were also able to identify some changes within this period concerning the use of hypes by students and found out that hypes in theses abstracts are on the increase, which the authors explain as a manifestation of students' increasing awareness of the need to justify their research.

Kingsley Cyril Mintah's paper studies rhetorical structural patterns within a corpus of ninety postgraduate theses abstracts written by students at the University of Ghana within three different fields – Language studies, Linguistics studies and Literature studies. The analysis has shown differences between the disciplines, the theses abstracts within the first two disciplines being informative compared to abstracts in Literature studies being typically indicative and also rather distinct in terms of structuring of the moves compared to the other two disciplines. The value of the study lies in revealing the discipline-specific practises that might be particularly useful for enhancing the authors' ability to present their research effectively.

The impact of the rapid development of digital technologies on the ways academic discourse is presented and disseminated to wider audiences is explored in the study of *Pilar Mur-Dueñas*. Her paper offers an interesting investigation into the recontextualization processes taking place in online academic communication with a focus on the use of explanatory strategies in digital discourse to show that verbal explanatory strategies are used more frequently than the non-verbal ones. The corpus includes three types of digital texts, i.e. author-generated, writer-mediated and research digests, each represented by ten texts. Within these, the author-generated digital texts have been found to include more non-verbal explanatory strategies than the other two types of texts analysed.

The last paper in the volume addresses the process of teaching and learning of specialised discourse. *Veronika Dvořáčková*'s study provides an insight into the area of clinical communication between doctors and patients focusing on the genre of delivering bad news. The paper presents an action research conducted in a number of ESP classes at the Faculty of Medicine, Masaryk university, Brno with the aim of providing medical students with the linguistic tools and experience necessary for successful communication with patients who are to receive bad news about their medical condition. The author designed several ESP tasks for medical students in order to raise the students' awareness of the need for effective and sensitive doctor-patient communication, which plays a crucial role in the therapeutic process. The feedback received confirmed that such tuition aimed at equipping medical students with the linguistic tools to deliver bad news to patients is absolutely essential and that the focus should be equally on the factual information about the patient's condition and the character and manner of this communication.

The papers in this Special Issue are complemented by a review of the book *Digital Scientific Communication: Identity and Visibility in Research Dissemination* edited by Ramón Plo-Alastrué and Isabel Corona and published in 2023 by Palgrave McMillan, which conveniently relates to the study on digital dissemination practices by Pilar Mur-Dueñas. Aiming to reveal emerging trends in science communication, the book comprises studies on practices contributing to the construction of digital identity and enhancing researcher visibility, potential conflicts stemming from the public availability and appropriation of scientific culture, and various ways of disseminating scientific knowledge through new digital genres in different context of academic and professional communication.

In conclusion, we hope that this Special Issue has succeeded in illustrating, at least to some extent, the diversity of topics, genres and methods in current research on specialised discourses and that it might provide readers with inspiring ideas for further research.

Renata Jančaříková, Olga Dontcheva-Navratilova and Renata Povolná

ARGUMENTS IN THE METHODS SECTION OF JOURNAL ARTICLES IN ENGLISH LANGUAGE EDUCATION PUBLISHED IN HIGH-IMPACT JOURNALS

Safnil Arsyad

Abstract

Discourse studies on the methods section of research articles have been mainly conducted on the macrostructure (i.e. moves and steps) of the section, while none have researched further how authors justify the research methods/design. This is crucial because if the method is not convincing, readers may not accept the research findings and will not use them in their own studies. The purpose of this research is to know what research method is often used by the expert authors in English language education articles published in high-impact journals, what elements of research methods are often presented in the methods part of these journal articles and how authors justify the choice of their research method in the methods section of their journal articles. Sixty articles published in six different reputable international journals were chosen to be included in this study. The results show that qualitative design is the most frequently used by the authors, while quantitative and mixed methods are used equally frequently. The most frequent elements presented in the methods section of the articles are participants, data analysis procedures, data collection procedures, and research instruments. Finally, the majority of the authors do not explicitly justify the choice of their research method although some of them do by citing a research methodology book. It can be concluded that the features of the methods section in the journal articles vary widely between journals and from one method/design to the other.

Keywords

argument, high-impact journal, expert authors, methods section, English language education

1 Introduction

Researchers working on discourse analysis of journal articles (henceforth JA) have paid the least attention to the methods section (henceforth MS). According to Kafes (2016), this is most likely because researchers believe that this section is simple and easy to write. However, since the research value is mostly determined by how sound the research procedures are, readers can easily see the significance of the MS. Day (2007) suggests that in the MS writers should, for instance, explain how they approached the problem or issue and defend their decisions, e.g. why they interviewed certain respondents or and why they decided to utilize a statistical package. Similarly, Lim (2006) claims that authors cannot assure

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readers of the validity of their findings without having a strong rationale for their MS and, according to Breeze (2023), the way authors assure readers of the soundness of their MS in a study using a qualitative method is different from that of using a quantitative method. In other words, readers may not accept the research results or findings if the authors' justifications for the method is not convincing.

The term 'methodology' refers to anything researchers select to address in the section where they explore different methods, defend the chosen method for the study, and outline the procedures and study participants (Lynch 2014). According to Cargil and O'Connor (2013: 37), possible taxonomies for the MS in a JA are 'Methods', 'Materials and Methods', and 'Experimental' and procedures employed in the study are also normally described in the MS of a JA (Kanoksilapatham 2005). The communicative goals of MSs are to explain how data were gathered, how the experiment or measuring variables was done, and how data analysis was conducted. One goal of the MS is to inform readers about the research techniques employed in a study and to give evidence for the validity and reliability of the research results and findings presented in the results section of the JA (Swales & Feak 1994). Another key role of MS is to provide sufficient information to the reader to ensure the credibility and trustworthiness of the results and findings (Smagorinsky 2008, Cotos et al. 2017). In addition, the method description enables researchers with extensive prior knowledge and interest in a particular field to undertake a replication of the study (Swales 2004). The overall structure of the MS is usually data collection, experiment/variable measurement, and data analysis, which is based on the models found in prior studies (Nwogu 1997, Kanoksilapatham 2005, Lim 2006).

The MS is where the steps and experiments used to gather data for a study are described. As a means of persuading the audience that the methods used were valid, it acts as a crucial section of a research paper (Lim 2006). However, there have not been many earlier studies on this section. Berkenkotter and Huckin (1995) assert that readers pay less attention to the MS than other sections and that there have been very few studies on it in recent years and just a few JAs for each discipline were the subject of these few studies. Berkenkotter and Huckin suggest that the MS is a fascinating area in which the authors must make sure the details provided regarding the experiments are presented to the readers adequately. According to Kanoksilapatham (2013), the MS in all JAs across different fields often lacks a coherent model because many researchers may not give the section any thought. Unlike the introduction section of JAs which have a standard structure and sequence, such as in Swale's CARS model of Moves 1-2-3 (Swales 2004), the MS requires distinct rhetorical patterns for different disciplines.

1.1 Literature review

The few studies on the MS of JAs were conducted by Lim (2006), Arsyad (2013), Pramoolsook et al. (2015), Morales (2016) and Zang and Wanaruk (2016). Lim (2006: 287) found that JA methods in the discipline of management may contain up to three moves; these are ‘describing data collection procedure/s’, ‘delineating procedure/s for measuring variables’, and ‘elucidating data analysis procedure/s’ with three sub-moves or steps in each move. However, according to Lim, different disciplines may have different rhetorical frameworks for their JA methods, and therefore lecturers or instructors should investigate samples of JAs in a particular discipline to find an appropriate model used by authors in their MSs before using it in teaching and guiding students to write an MS. Later, Pramoolsook et al. (2015) used Lim’s three-move model to investigate JA methods in management and marketing but found that Lim’s three-move framework failed to provide adequate argument for the rhetorical organization of the MSs of the two sub-disciplines, even revealing some differences between the framework and the actual texts. This is probably because articles in Lim’s and Pramoolsook et al.’s studies used different research approaches (i.e. qualitative or quantitative) or different methods (i.e. experimental, case study, survey, etc.).

Other studies on the MS of JAs were conducted in multidisciplinary fields. Peacock (2011: 109) analyzed the rhetorical structure of 288 JA methods in eight different disciplines (i.e. biology, chemistry, physics, environmental science, business, language and linguistics, law, and public and social administration) and found seven possible moves: ‘subjects/materials’, ‘location’, ‘procedure’, ‘data analysis’, ‘limitation’, ‘research aims/questions/hypotheses’, and ‘overview’. However, according to Peacock, only one move (i.e. procedure) appeared in all 288 JAs, while two moves (i.e. subjects/materials & data analysis) were frequently used in biology, chemistry, physics, business, language and linguistics, law, and public and social administration. Other moves, such as locations, limitations, research aims/questions/hypotheses, and overview were frequently used in one or two disciplines but not in others. Peacock claims that it is hard to discuss the distinctions of MS of JAs across disciplines; therefore, studies using a larger corpus in a particular discipline are necessary. Similarly, Arsyad (2013) found that the seven-move rhetorical framework as suggested by Peacock was only effective in capturing the rhetorical structure of JA methods in Indonesian written by Indonesian authors at a macro level or moves but not at micro level or steps in the section. In other words, variations occur in the micro-communicative units or steps among the sub-disciplines in the social sciences and the humanities.

In the field of education, Zhang and Wanaruk (2016) found that the rhetorical style of JA methods is complicated. Although education researchers typically use three rhetorical communicative units or moves (i.e. 'describing research design' or Move 1, 'describing data collection processes' or Move 2, and 'describing data analysis procedure' or Move 3) to achieve the MS's overall communicative goal, only Move 2 is obligatory, while the other two moves (i.e. Moves 1 and 3) are optional (ibid.: 165). This is because, according to Zhang and Wanaruk, a great proportion of studies in the field of education use a qualitative and mixed design of qualitative and quantitative ones. Another characteristic of JA methods in education, as Zhang and Wanaruk (2016: 165) suggest, is that they have an additional move of 'describing research design' and steps of 'verifying compliance with ethical standards' and 'inter-coder reliability' which are not found in other fields. In other words, the JA method in the field of education is more detailed than those in other disciplines because readers may judge how far the study's findings are generalizable to different times, environments, contexts, circumstances, and people with the aid of specific information in the MS.

Afsyar and Ranjbar (2016) compared the rhetorical structure of JA methods in English language education (henceforth ELE) published in international journals and those published in Iran using the three-move model from Lim (2006). They found significant differences in the frequency of appearance of particular moves and steps, especially in three steps of Move 1 (i.e. describing the sample, renouncing steps in data collection, and justifying the data collection procedure/s) and two steps of Move 3 (i.e. relating or recounting data analysis procedure/s and justifying the data analysis procedure/s). Afsyar and Ranjbar suggest that this is because international studies have higher involvement with sampling procedures and sample representativeness due to the need of the journals in which these articles are published to appeal to a wide range of readers from international backgrounds who may expect JAs to have more precise and detailed sampling procedures and to relate to larger samples to ensure the generalizability of the findings. Similarly, Morales (2016) compared JAs published in high-impact and non-high impact journal articles in applied linguistics. Following the seven-move model as suggested by Peacock (2011), Morales (2016) found that although the MS in high-impact JAs are longer than those in non-high impact JAs, there is only one obligatory move (i.e. Subjects/Materials) in the section in both sets of JAs; Move 3 (Procedure) and Move 4 (Data Analysis) are obligatory in non-high impact JAs but optional in high-impact JAs. According to Morales, his findings support those of Huang (2014), Kanoksilapatham (2005) and Swales and Feak (1994).

1.2 The rationale for the study and research questions

As discussed above, discourse studies mainly investigated the rhetorical structure (i.e. moves and steps) of MS of JAs in a particular discipline written in a particular language or two or more disciplines in the same language. These studies looked at whether or not certain communicative units of moves and steps are found in a corpus of JAs while no or very rare studies investigated what types of research methodology are often used and how authors justify the choice of their research method to assure readers that their research results or findings are valid and reliable. According to Breeze (2023), less is known about methods sections in the social sciences and the findings of studies on the MS are not yet decisive (Lim 2006). Malte and Tulud (2021) suggest that the MS is crucial, since it contains the data that will ultimately be used to examine a study's validity. Therefore, authors must give a thorough explanation of the research method and a convincing justification for a particular chosen research method. In other words, authors must argue for the choice of their research method. This is the main motivation of this study, i.e. to investigate how authors in ELE published in high-impact journals (i.e. journals indexed by Scopus) justify the choice of their research method addressed in their JA MS. Thus, the precise goal of the current study is to answer the following questions:

1. What research designs/methods are often used by expert authors in English language education articles published in high-impact journals?
2. What elements of methods are often presented in the methods section of journal articles in English language education published in high-impact journals?
3. How do expert authors in English language education articles in high-impact journals argue for their research methods/design?

2 Methods

2.1 The corpus of the study

In this study, 60 JAs were included; these articles were taken from six different reputable journals in ELE. These journals are 1) *Studies in Second Language Learning and Teaching*, 2) *TESOL Quarterly*, 3) *Teaching English with Technology*, 4) *Journal of Asia TEFL*, 5) *Teaching English as a Second or Foreign Language*, and 6) *3L: Language, Linguistic, Literature*. The corpus of the study is presented in the following table.

No.	Journals	Code	Quartile Value	SJR Score	Number of Articles	Country of Publisher
1.	*Studies in Second Language Learning and Teaching*	SSLLT	1	1.76	10	Poland/Europe
2.	*TESOL Quarterly*	TQ	1	1.78	10	United States of America/North America
3.	*Teaching English with Technology*	TET	1	0.42	10	Poland/Europe
4.	*Journal of Asia TEFL*	JAT	1	0.38	10	South Korea/Asia
5.	*Teaching English as a Second or Foreign Language*	TESL	1	0.35	10	United States of America/North America
6.	*3L: Language, Linguistics, Literature*	LLL	1	0.33	10	Malaysia/Asia

Table 1: The corpus of the study

To reflect the latest information on the syntactic and content properties of articles published in these journals, we chose articles published in the last five years. There is no significant scholarly justification for selecting only ten articles from each journal, but since they were picked from recent issues, it is thought that the articles reflect the features of other recent publications in the journals. As can be seen in Table 1, all chosen journals are indexed in Scopus with a quartile value of 1 (the highest) and the journal's Scimago Journal Rank (SJR) value varies from journal to journal. Thus, journals with higher SJR scores are better than those with lower ones, and papers published in the journals are read and cited by more authors. It can also be seen in Table 1 that the journals are published in different countries on three different continents (i.e. Asia, Europe, and North America); this is also to ensure the representativeness of the journals in the field of ELE.

2.2 Data analysis procedure

To answer the first research question, the initial part of the MS, where authors usually state the research methods they use in their study, was read. However, since authors may also address similar information in the article title and/or abstract, these two article sections were also thoroughly read and analyzed. The possible research methods used in ELE or applied linguistics studies are "qualitative: case study, content analysis, ethnographic studies, grounded theory studies, historical studies, narrative research, phenomenological research;

quantitative are 'survey studies, correlational studies, ex post facto studies', while mixed methods are 'sequential and concurrent'" (Meihami 2020: 71). Abuhamda et al. (2021) suggest that qualitative research is meant to identify patterns in concepts and viewpoints, while quantitative research measures the problem by generating numerical data or data that may be converted into functional statistics. The primary goal of quantitative research design, according to Abuhamda, is to control the connotation between an independent variable and a population dependent variable or outcome variable. In contrast, qualitative studies typically have what, how, and why questions to address research questions that involve the collection of qualitative data rather than quantitative data. Mixed-methods studies, on the other hand, are more than just combining quantitative and qualitative research methodologies in a study; they address both deductive and inductive reasoning to predict human behaviors (Cresswell 2007).

In this study, the research designs/methods used in the articles were classified into one of three big categories: qualitative, quantitative or mixed methods. This was done by relying on the explicit word/s used by the authors to announce their research methods/designs in the titles, abstracts and/or MSs. However, if there are no explicit labels found in the titles, abstracts and MSs of the articles, then research method elements, research instruments and data types presented in the articles were used to help decide the research methods/designs of the articles. If in an article, the dominant data were qualitative, then the study was considered as using a qualitative method, and, if the dominant data were quantitative, the study was classified as using a quantitative method, and if both types of data were equally found, then the study was classified as using a mixed method design.

The second research question was answered by looking at the elements presented in the MSs; this was done by looking at subheadings found in the methods section of the articles. From a preliminary analysis, it was found that the possible subheadings in the methods section of a research article are: 1) Inclusion criteria, 2) Coding procedure, 3) Data analysis procedure, 4) Research context, 5) Data collection procedure, 6) Data analysis technique, 7) Research participants, 8) Corpus selection, 9) The course, 10) Study design, 11) Materials, 12) Research instrument(s), 13) Research setting, and 14) Limitations.

The third research question was answered by determining the reasons why the authors use a particular research design/method (i.e. qualitative, quantitative or mixed methods) in their study. In this analysis, we focused only on the authors' statements to justify or argue for their research designs or methods. This is because a journal article is a piece of writing that attempts to persuade readers to believe something (Belcher 2009). In this study, the rhetorical attempts are referred to as an author argument (henceforth AA). From a pilot study, we found three possible types of AAs; these are 1) citing a previous study/s using the same or similar methods, AA-1, 2) citing a research methodology book, AA-2, and 3) no argument addressed at all, AA-3. Examples of AA-1 and AA-2 are given below while no example for AA-3 is given because there is no argument addressed.

AA-1: Citing previous studies which use the same or similar methods

(1) *This section overviews how data searches were carried out along five criteria for inclusion and discusses the data analysis procedure. We followed the guidelines of the* ***Preferred Items for Systematic Reviews and Meta-Analysis*** *(PRISMA) statement (Moher et al., 2009) to ensure that our review is systematic. ... Then, the coding scheme was developed drawing on* ***a framework for analyzing error correction studies*** *(Ferris, 2003). ...* (TESL-EJ-1)

As can be seen in the above example, the authors cite a reference from journal articles by Moher et al. (2009) and Ferris (2003) to support the choice of their research method.

AA-2: Citing the research methodology book

(2) *To investigate the factors influencing the achievement of the CEFR's action-oriented approach implementation in Thai EFL classrooms after teachers' exposure into Boot Camp, a teacher training programme with the focus on communicative English use, a case study based on a social constructivist paradigm was adopted. Such an approach allows the researcher to study meanings, ideologies, and socially constructed realities within their participants' context* ***(Creswell, 2014)****. To this end, the current study used this paradigm to view the meanings that were socially constructed by Thai in-service EFL teachers, concerning the factors influencing the implementation of an action-oriented approach in their own pedagogical context. Semi-structured in-depth interviews were applied as a main heuristic (see Instrument).* (LLL-3)

In the above example, the authors cite a reference book (Creswell 2014) to justify the choice of research method/design used in their study.

2.3 Validating data analysis results

To determine the accuracy of the research data, an independent coder was requested to review the abstracts and MSs of randomly selected articles. A professor from the University of Bengkulu's English study programme with a doctorate in English language education served as the study's independent coder.

For the independent coder to properly examine the approach, he was instructed on how to do so using the research instrument (see Appendix 1). After that, the independent coder examined the potential AAs in a sample of twelve (20%) JAs (two JAs were chosen at random from the six sets of the JAs in the corpus of this research). After that, the researcher and the independent coder discussed any instances of incorrect labeling or conflicting coding findings. Last but not least, the independent coder used the same research technique to code the sample articles.

The inter-coder agreement was analyzed using Cohen's kappa. According to Brown (1996, as quoted in Corder & Foreman 2009), Cohen's kappa statistical analysis has a maximum score of 1.00 and a minimum value of 0.00. A Cohen's kappa score below 0.40 was considered bad, between 0.40 and 0.59 acceptable, between 0.60 and 0.74 outstanding, and at 0.75 or higher remarkable. The kappa coefficient value was computed after comparing the coding results on the chosen samples of JA introductions from the researcher and the independent coder. The results of the independent coder's and the researcher's analyses were compared, and the result was the kappa coefficient score of 0.75. Then, further discussions were held between the researcher and the independent coder to solve the remaining differences to reach complete agreement.

3 Results and discussion

3.1 Results

3.1.1 Research methods used in the studies

Data analysis results on the research method frequently used by researchers in ELE articles published in high-impact journals are presented in Table 2.

No.	Research Designs/ Methods	Frequency N=60	Total (%)
1.	Qualitative	32	53.33
2.	Quantitative	14	23.33
3.	Mixed methods	14	23.33
	Total	60	100.00

Table 2: Research methods used in the journal articles

As can be seen in Table 2, the most frequent method used by the expert researchers in ELE publishing in high-impact international journals was the qualitative method (32 or 53.33%). The following example is extracted from the data of this study.

(3) *Abstract*
This study aims to explore the complex phenomenon hidden in Thai EFL students' minds and to detect the different strategies used by two groups of readers with different levels of L2 reading proficiency whilst reading four English reading texts through think-aloud activities.

Data Analysis
The data collected involved verbatim transcripts of think-aloud protocols and interview data. Both data types were transcribed in Thai and then translated into English. During the analysis process, the data from the think-aloud activities and retrospective interviews were repeatedly analyzed to ensure their triangulation. An open-coding analysis was initially used to allow for an overview of data segmentation and coding to occur naturally. This stage was then followed by a constant recursive coding with the use of the conceptual framework as a coding guide, as illustrated in Table 1, to ensure that data categorization was consistent. The codified data were categorized into four main themes: cognitive (bottom-up), cognitive (top-down), metacognitive, and social. Inter-rater checks were employed to establish the validity and reliability of the data detected. (LLL-1)

Example 3 was obtained from an article titled 'A Think-Aloud Study: L2 Reading Strategies Used by Higher and Lower Proficiency Thai EFL Readers' by Pattapong (2022). In the abstract of the article, the author mentions that the research data took the form of verbal reports from think-aloud and retrospective interviews, while in the MS he explicitly mentions two types of data (verbatim transcripts of think-aloud protocols and interview data). This is why this research is categorized as using a qualitative method.

Table 2 also shows that quantitative methods and mixed methods are equally frequently used by the authors in the corpus of this study: 14 or 23.33 per cent. The following are examples extracted from the corpus of the study.

(4) *... To examine the first research question on the relative effectiveness of recasts, explicit correction, and metalinguistic prompts on the L2 development of the past progressive, one-way ANOVAs were conducted on gains in scores (immediate or delayed posttest scores - pretest scores) of the UGJT and the EIT with group as a between-subject variable. Gain scores were used to factor out the effects of pretest scores on the results of statistical analyses as much as possible. When the ANOVA detected significant differences, Bonferroni-adjusted post-hoc analyses were carried out to locate where the differences lay. To compare the magnitudes of the effects of CF, effect sizes (Cohen's d) were also reported. Effect sizes larger than 0.2, 0.5 and 0.8 were considered small, medium, and large, respectively. Subsequently, to investigate the second research question on whether L2 proficiency differentially influences the effectiveness of the three CF types, simple linear regression analyses were conducted with the UGJT or the EIT gain scores as a dependent variable and L2 proficiency scores as an independent variable...* (JAT-2).

Example 4 was taken from an article titled ‘Associations between L2 Proficiency and Efficacy of Corrective Feedback Types’ by Sato (2022). This study used an experimental method to examine the relative effectiveness of recasts, explicit correction, and metalinguistic prompts on developing English past progressive forms among second language learners, and whether the effectiveness of each feedback type was differently associated with L2 proficiency. In the MS of the article, the author mentions that he/she used an ANOVA statistical analysis to see the differences between the three different groups of students involved in their study. This is why this research is categorized as using a quantitative method.

(5) *... The data collection process took place in two academic semesters in which there were three phases: pre-survey, task implementation, and post-survey. Pre-survey included questions regarding the competency in performing authentic tasks and technology use. In post-survey, pre-survey questions were included and tasks were assessed in terms of their contribution to language learning.* ***Quantitative*** *data were analysed via Descriptive Statistics, ANOVA Test, and Paired-Samples T-Test whereas the* ***qualitative*** *data were analyzed via constant comparison method...* (TESL-EJ-9)

Example 5 was taken from an article titled ‘Enhancing Authenticity in College Level English Classrooms via Instructional Technology’ by Bal and Savas (2021). In the abstract, the authors explicitly mention that they used mixed methods consisting of two types of data (quantitative and qualitative) in their study. This is why this article is categorized as using a mixed method design.

If the authors do not explicitly state the research method/design of their study, we identified the research method/design they used by looking at the elements of research stated in the MS of the article, the types of data they present in the results section, and the research instrument(s) they used. To illustrate this, the following example is given.

(6) ***Data collection and analysis***
... Furthermore, ***a qualitative analysis*** *was performed to identify interactional discourse moves or language-related episodes in the chat scripts. The moves were coded and categorized according to Golonka, et al.’s (2017) framework: language assistance (e.g., meaning negotiation, partner-correction, and self-correction), using partner as resource (e.g., clarifying instructions, modeling, helping with vocabulary and technical problems), and providing encouragement (e.g., helping with task completion, eliciting, providing positive affect...*(TESL-EJ-4)

The above example was taken from an article titled 'Vocabulary Transfer from Reading to Writing: A Comparison of Essay Writing and Synchronous CMC' by Kim and Kim (2022). Under the subheading of data collection and analysis in the MS of the article, the authors explicitly mention that they analyzed their research data qualitatively in identifying interactional discourse structure in the students' compositions. This is why this article is categorized as using a qualitative method/design.

3.1.2 Research elements presented in the methods section of the journal articles

The second analysis in this research was on the method elements presented in the MS of the journal articles. The data are displayed in Table 3.

No.	Research Methods Elements	Frequency N=60	Percentage
1.	Research participants	37	61.66%
2.	Data analysis/procedure	36	60.00%
3.	Data collection/procedure	35	58.33%
4.	Research instrument	23	38.33%
5.	Study design/method	11	18.33%
6.	Research questions/ objectives	9	15.00%
7.	Research context/setting	6	10.00%
8.	Inclusion criteria	5	8.33%
9.	Coding procedure	5	8.33%
10.	The course	2	3.33%
11.	Limitation	2	3.33%
12.	Corpus of the study	2	3.33%
13.	Search strategy	2	3.33%
14.	Review strategy	2	3.33%

Table 3: Research method elements presented in the JA methods section

Table 3 shows that the most frequent elements in the methods section of the journal articles are research participants (37 or 61.66%), data analysis procedure (36 or 60%), data collection procedure (35 or 58.33%), research instrument (23 or 38.33%), study design or method (11 or 18.33%), and research questions/ objectives (9 or 15%). Other elements such as research context/setting, inclusion criteria, and coding procedure are found much less frequently. Other elements such as the course, corpus of the study, search strategy, and limitations are found only once or twice in all 60 journal articles. This implies that these elements are not commonly used in the methods section of journal articles in ELE.

3.1.3 Strategies for justifying the choice of research method

The third analysis was on the way international authors rhetorically justify the choice of their research method. Results of the data analysis on this matter are presented in Table 4.

No.	AA	Description	High Impact Journals						Total
			SSLLT	TQ	TET	JAT	TESL	LLL	
1.	AA-1	Justifying the research methods by citing previous studies which use the same or similar methods	-	-	-	2	1	-	3
2.	AA-2	Justifying the research methods by citing a research methodology book	-	1	2	1	4	7	15
3.	AA-3	No argument is addressed	10	9	8	7	5	3	42

Table 4: Justifying research method strategies

As indicated in Table 4, the majority of the journal articles (42 or 70%) do not explicitly mention information about the method/design used for their study either in the titles, abstracts or MSs of the articles. However, the research method/ design used in the study can be inferred from the type of research instrument, research participants, data collection procedure, and/or data analysis procedure used in the study. In other words, the research methods/design used in the articles can be recognized from the elements of research addressed in the MS of the articles although the authors do not justify it. Also, in some articles, information about the research method is mentioned in the article abstract, as in the following example.

(7) ***Abstract***
… Quantitative instruments of three 5-Likert scales were used to measure the number and frequency of classroom activities used in the English class, the level of classroom anxiety of students as well as their perceptions of teacher roles… (JAT-3)

Example 7 was taken from the abstract of an article titled ‘Classroom Activities, Classroom Anxiety and Teacher Roles: Three Dimensions Revealing Class Reality of a University English Course’ by Huang (2022). In the article abstract, the author mentions that she used a quantitative research instrument of a 5-Likert scale questionnaire for his/her study.

Table 4 also shows that 15 (25%) of authors justify the choice of their research method or design by citing research methodology books; an example is given below.

(8) *...To answer the research question, the researchers employed the principles of the* ***qualitative*** *case study method. The qualitative case study is an empirical study that aims to discover phenomena in real-life contexts, which are then to be analyzed and described intensively (Duff, 2008). It is popular among qualitative researchers because it offers a framework for analysis of the entity and context in which social action occurs (Hood, 2009)...*(TET-5)

Example 8 was taken from an article titled 'Leveraging Gamification into EFL Grammar Class to Boost Student Engagement' by Ardi and Rianita (2022). In the methods section, the authors mention that they use a qualitative method/design for their study and to justify the choice of method they cite references from books by Duff (2008) and Hood (2009).

Table 4 shows that only 3 (5%) of authors justify the choice of their research method/design by citing reference/s, as in the following example.

(9) *...This study employs a* ***mixed methods*** *research approach, Q methodology, in its endeavor to survey the contemporary landscape across Australian EAL settings. Q methodology (henceforth referred to as Q) combines the strengths of qualitative and quantitative data to explore attitudes (Newman & Ramlo, 2010)* ... (TESOL Q-9)

Example 9 was taken from an article titled 'The Role of Membership Viewpoints in Shaping Language Teacher Associations: A Q Methodology Analysis' by Slaughter et al. (2022). In the example, the authors used a mixed method design in their study and to justify their design choice they cite a reference from a journal article by Newman and Ramlo (2010).

In the case of AA-3, the authors did not state the reason for using a particular method/design or explicitly state the method/design of their research. The method/design used by the authors can be inferred from the elements of the research method presented in the methods section of their articles, such as research instrument, research participants, data collection procedure, or data collection procedure, as in the following example.

(10) *...This study adopted a* ***quantitative research approach****. First, details about the context and participants of this study are given. Next, the procedural details of data collection and analysis are explained...* (SSLLT-10)

Example 10 was taken from an article titled 'Investigating academic achievement of English medium instruction courses in Turkey', published in the Journal of Studies in Second Language Learning and Teaching by Altay et al. (2022). As can be seen in the above example, the authors state the research method/design they used in their study (i.e. quantitative research approach) but do not address the rationale for the choice of the method.

3.2 Discussion

The first objective of this research was to know the research designs/methods often used by authors in ELE articles published in high-impact journals. The results show that the most dominant research design/method is a qualitative one. This is probably because qualitative research can offer understanding that is difficult to obtain from quantitative data. Qualitative methods provide a way to investigate and comprehend the meaning people or groups assign to social or human issues, as well as the attitudes that underlie human behavior and the social environment (Kandel 2020). According to Kandel, we can better comprehend our surroundings and the reasons behind why things happen the way they do via qualitative research. Thus, through qualitative research, we can create theories that aid in our comprehension of social phenomena in their natural environments since properly emphasizing the meanings, experiences, and viewpoints of all participants is the aim of qualitative research. In other words, the qualitative method or design is more suitable to investigate many issues in ELE since the majority of the issues are social issues, such as those dealing with students, teachers and language users at large.

This study's findings are consistent with those of Meihami (2020), who notes that between 1980 and 2000, quantitative research methods dominated the field of applied linguistics; from 2001 to 2019, qualitative research methods predominated; nevertheless, between 2010 and 2019, there was a growing tendency toward using mixed approaches. According to Meihami, this is because applied linguists inquire into the issues to obtain the core story about learning and teaching a second or foreign language with a complex concept to be empirically investigated. In other words, authors in applied linguistics address issues of language-based problems in the real world which can be better approached using qualitative research methods. Zhang and Wanaruk (2016) also found that the majority of studies reported in JAs in education used qualitative methods. This, according to Zhang and Wanaruk (ibid.: 176), is because "qualitative research, largely concerned with understanding complex issues, embraces an interpretivist research paradigm and relies on such methods as interview, observation, ethnography, content analysis, etc. which are highly context sensitive and flexible". Similarly, Jackson (2019) discovered that authors in educational leadership journals employed qualitative methods more frequently than other methods, with a broader range of data-collection sources, with interviews and surveys being the most popular data sources.

The second objective of this study was to investigate the elements of methods presented in the methods section of JAs in ELE published in high-impact journals. The results show that the most frequent elements are the data analysis procedure, data collection procedure, research participants, and research instrument. This implies that the important aspects of methods in ELE studies are data and how to get them to answer research questions. This is probably because a study must respond to five basic questions: 1) what is the scientific question; 2) what kind of investigation is to be carried out; 3) what measurements are to be taken; 4) what kind of data analysis is to be used; and 5) whether or not the data have enough statistical power to provide a meaningful response to the questions (Ford 2009). According to Ford, the first question is usually discussed in the introduction section of a JA, while the other four questions are addressed in the MS of the article.

The last objective of this study was to find out how authors in ELE articles in high-impact journals justify the choice of their research method/design. The findings reveal that the majority of authors do not explicitly mention their research method in the titles, abstracts or MSs, although the research method used in the study can be recognized from the description of research instruments, research participants, data collection procedure and data analysis procedure mentioned in the methods section of the article. Thus, by describing the important research elements, the authors believe that readers will find out what research method/design they used in their research and therefore the authors do not have to explicitly state it.

The description of research design/method is only optional in the MS of JAs in education; only half of the JAs in the data of their research have this communicative unit, and the only obligatory element in the section is a description of the data collection procedures with a series of constituent steps (Zhang & Wanaruk 2016). However, Zhang and Wanaruk did not discuss why such a communicative unit is rare in the MSs of JAs in education. Similarly, Jackson (2019) found a significant number of articles in his data without methodological references cited in their MS. Jackson asserts that the absence of methods information can make it more challenging for other researchers, including the less experienced ones, to repeat the studies, draw inferences about the generalizability of results to a new context or population, or evaluate the studies' rigor and reliability. Jackson claims further that citing earlier studies or references provides methodological inspiration or an example that can aid newer researchers in the design of their work.

4 Conclusions and suggestions

It can be concluded from the findings of this study that the most frequent research method used by expert authors in ELE articles published in high-impact journals is qualitative, and the most frequent elements of methods described in the MS of the journal articles are data analysis procedure, data collection procedure, research participants and research instrument. In addition, the majority of the expert authors do not explicitly mention their research method in the method sections or the abstract of their journal articles although it can be inferred from the elements of research presented in the method chunk, such as research instrument, data collection procedure, data analysis procedure or research participants.

This study is not without limitations; only 60 articles were included taken from six different high-impact international journals. Also, this study only investigated what methods are often addressed by the authors in ELE, what elements of research are presented in the methods section of the articles and how authors justify their research methods/designs. Future studies should include more articles taken from more high-impact journals in ELE to represent all high-impact journals in the field. Future studies should also investigate other aspects of methods of research, such as how authors rhetorically justify their research methods and what linguistic elements are often used in the justification.

The findings of this study have implications for less experienced authors or postgraduate students. They should study the guidelines for authors or study an example of an article published in a particular journal, especially how authors address the research methods and other elements, before submitting a manuscript to the journal since different journals use different preferred templates of articles. Also, different research methods need different elements to be presented in the article MS, and this is why it is very important to study how the MS of articles published in a particular journal should be written. This is aimed at increasing the probability of the manuscript being accepted for publication by a high-impact journal from the language point of view.

Appendix 1

Research instrument

Check list for Author Argument Analysis

Journal title & code :
Journal title :
Article number :

A. Research methods/Design
Qualitative/Quantitative/Mixed Methods

B. Research Method Elements

No.	Research Method Elements	Notes
1.	Research participants	
2.	Data collection/procedure	
3.	Research instrument	
4.	Study design/method	
5.	Research questions/objectives	
6.	Research context/setting	
7.	Inclusion criteria	
8.	Coding procedure	
9.	The course	
10.	Limitation	
11.	Corpus of the study	
12.	Search strategy	
13.	Review strategy	

C. Author Argument Strategy

Strategy	Description	Example	Notes
AA-1	Justifying the research method or design by citing previous studies which use the same or similar methods	*This section overviews how data searches were carried out along five criteria for inclusion and discusses the data analysis procedure. We followed the guidelines of the* ***Preferred Items for Systematic Reviews and Meta-Analysis*** *(PRISMA) statement (Moher et al., 2009) to ensure that our review is systematic. ... Then, the coding scheme was developed drawing on* ***a framework for analyzing error correction studies*** *(Ferris, 2003). ...* (TESL-EJ-1)	
AA-2	Justifying the research method or design by citing the research methodology book	*Embedded mixed-method design includes one or more forms of data (quantitative or/and qualitative) within a larger design.* ***Qualitative data*** *can be collected before an experiment starts, during the experiment, or after the experiment. This design is preferred when the researcher 'tests an intervention or program in an applied setting i.e. school' (Creswell, 2014, p. 228). In this study,* ***the quantitative data*** *were collected via pre-survey and post-survey. The qualitative data (open-ended questions) were embedded in post-survey to reach the underlying reasons for learners' perceptions regarding the implementation of ten authentic tasks.* (TESL-EJ-9)	
AA-3	No justification	The authors do not explicitly justify the choice of their research methods/design.	

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(…………………………..)

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A GENRE-BASED APPROACH IN ESP CLASSES TO TEACHING CLINICAL COMMUNICATION FOCUSING ON BREAKING BAD NEWS TO PATIENTS

Veronika Dvořáčková

Abstract

Healthcare professionals have the responsibility to regularly convey difficult information such as unfavourable diagnoses, as well as adverse treatment outcomes. While this task can be uncomfortable, successfully carrying it out plays a crucial role in determining patient outcomes (Sweeney et al. 2011: 230). This necessity has led to the creation of evidence-based protocols such as SPIKES developed by Baile et al. (2000). The goal of the paper is to explore the suitability of the genre-based approach for the study and teaching of medical English, focusing on the integration of the selected clinical communication tool into the ESP classroom. As this study stems from the ESP practitioner's experience and its outcomes will directly influence her future ESP classroom teaching, action research has been conducted. The feasibility of using an authentic clinical tool in an ESP lesson was assessed through a two-step methodology: i) devising an ESP task based on the SPIKES protocol, emphasizing linguistic elements, and ii) obtaining student feedback focusing on the perceived usefulness of the tool. Overall, the collected data indicate that students acknowledged the significance of effective clinical communication for successful therapeutic practice. However, given the fact that medical English is inconveniently scheduled in a pre-clinical phase of their curriculum, they also exhibited a certain level of hesitancy, unsurprisingly, when it came to readiness in handling serious communication scenarios.

Keywords

medical English, medical oral genre, delivering bad news, clinical communication, action research, ESP lesson, student survey, mediation

1 Introduction

The key aspects of the teaching of English for Specific Purposes (ESP) are to respect and develop the learner's foreign language interests and needs within the context and for the purposes of their specific discipline (Hutchinson & Waters 1987: 8). Among the many features of ESP is "discourse (rhetorical) analysis", paying attention to the special meaning that words and sentences acquire in different situational contexts (ibid.: 33-34) or genres whose mastery seems to be the prerequisite for successful practice in the given professional field.

Oral medical discourse has long been established as a discourse in its own right which has attracted the attention of linguists (Ainsworth-Vaugh 2001,

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Fleischman 2001), doctors (Baile et al. 2000) as well as antrophologists (Wilce 2009). The analysis of specific written genres in ESP is well established, but communicative purpose and strategies (Bhatia 1991) are equally present in oral genres as their participants – the doctor and the patient – utilize their own communication intentions and strategies. Additionally, during a medical encounter, the doctors follow a stage-driven (Have 1989) or moves-driven (Swales 1990) protocol, which results in the discourse being "ritualized" on the part of the doctor but still exhibiting a certain degree of unpredictability on the part of the patient (Ainsworth-Vaugh 2001: 454).

While numerous studies have examined the effectiveness of clinical communication tools, there is a scarcity of research focusing on the translation of these tools into the medical English classroom. The current study was motivated by this knowledge gap. Its research objective is to investigate the effectiveness of the genre-based approach in the study and teaching of medical English, with a focus on integrating the selected clinical communication tool into the ESP classroom. The study was conducted at Masaryk University Language Centre in Brno, Czech Republic, during medical English instruction to first-year students of general medicine at the Faculty of Medicine.

2 Medical oral genres with a focus on the use of mediation strategies

A genre is a set of communicative events that share the same goal (Swales 1990: 45-46). Identifying a shared communication goal naturally filters out utterances that potentially divert from achieving that goal in terms of content as well as style (ibid.: 52, 58). This is one of the reasons why the doctor part of the scenarios or protocols tends to be routinized. Another important feature of oral medical genres is their terminology-rich content corresponding to the purpose of the communication event (ibid.: 55). This is why selected aspects of the ESP course under examination in this paper commence by introducing a pre-genre activity in which a doctor introduces themselves to a patient, encompassing detailed elements such as obtaining the patient's preferred form of address. Following this, four genres are explored in the course: taking a patient's history, giving a diagnosis, encouraging a patient to make a health behaviour change (e.g. stop smoking) or giving a patient bad news of a terminal diagnosis, the last of which will be elaborated on in the following sections of the present text. The persuasive discourse (ibid.: 42) employed by the doctor has the so-called "double generative capacity", i.e. it both establishes communicative goals and supports their fulfilment (ibid.: 44-45), e.g. helping the patient to lose weight.

The presence of persuasive discourse underscores the need for doctors to move beyond merely conveying information to becoming intermediaries between patients and their new diagnoses. From a linguistic perspective, the doctor's role involves 'mediation' (Council of Europe 2020: 90), which includes the introduction of daunting concepts such as a fatal disease to a patient. It is not only crucial that the patient comprehends the unfavourable message communicated but also that they can integrate it into their personal and professional lives, make informed decisions about treatment options, and actively pursue them. Therefore, the doctor must employ language to create "the space and conditions for communicating," "construct new meaning", and convey "new information in an appropriate form" within the professional, specifically clinical, context (ibid.: 90). Healthcare professionals need to employ "mediation strategies", such as connecting to prior (patient) knowledge, adjusting (medical) terminology, and simplifying complex information (ibid.: 90). They must assist the patient in processing both the emotional and factual aspects of the encounter and plan the next steps in their treatment. The steps involved in delivering bad news, along with examples of language that enhances the effectiveness of the interaction, are detailed in the following section.

3 SPIKES, an authentic protocol developed based on clinical practice data

Based on extensive research which, among other things, showed doctors' apprehension in delivering bad news, Baile et al. (2000) developed a six-step protocol for giving unfavourable diagnoses to cancer patients in order to increase doctor confidence during these complex encounters. The six-step protocol acronymized as SPIKES, refers to the main stages of a clinical communication encounter from the doctor's perspective: "setting up the interview", "assessing the patient's perception", "obtaining the patient's invitation", "giving knowledge", "addressing the patient's emotions" and "strategy and summary" (ibid.: 305-306, 308). In applying the SPIKES protocol the doctor aims to achieve four principal goals: i) eliciting information from the patient, ii) communicating medical information to the patient, iii) offering assistance to the patient, and iv) encouraging the patient to cooperate with the doctor to choose a treatment option (ibid.: 302). The value of following the SPIKES protocol in clinical communication has been extensively examined and found overwhelmingly positive by numerous studies, as indicated by Mahendiran et al.'s (2023) review study. Similarly, it has served as an inspiration for the creation of innovative protocols (Narayanan et al. 2010, Von Blanckenburg et al. 2020, Meitar & Karnieli-Miller 2021). However, it is noteworthy that, according to Mahendiran et al.'s (2023) recent study, the examined papers tended to measure the learner's (i.e. the giver of the news) satisfaction rather than that of the recipient, leaving a valuable research niche for future investigators in the area of the impact of clinical communication on patient outcomes. Nonetheless, since delivering unfavourable diagnoses is perceived as a stressful task for medical doctors, examining their level of satisfaction constitutes a research objective in its own right.

In what follows, I focus on the individual steps of the protocol, which serves as the key document in the situational genre of delivering bad news to the patient. The doctor's competent use of language in each stage is essential for the successful attainment of the above-mentioned four goals. Naturally, the comparison between Swales's model and Baile's clinical protocol is only tentative, primarily undertaken to establish common ground between the realms of ESP and the specific discipline under consideration. Nonetheless, certain overlaps emerge. The initial overlap involves setting the stage by summarizing known information within the particular research area or health issue for the patient. Subsequently, there is an identification of the unknown, be it for the academic readership or the patient. Ultimately, the process concludes with an attempt to address the unknown or a new challenge, whether it be filling knowledge gaps within the academic community or proposing treatment options to the patient.

Examples of typical utterances are provided which are essential for the doctor's successful achievement of the clinical communication goals. All doctor-to-patient phrases are enclosed in quotation marks. The phrases lacking a quoted source have been conveniently generated using the OpenAI model ChatGPT (2023) and their relevance verified by the article's author. The rest have been extracted from literature, with the relevant sources cited.

Step 1: Setting up the interview (The names of the six steps were taken from Baile et al. 2000: 305-308)

s previously mentioned, the first step of the protocol corresponds to Move 1 in the rhetorical structure of the genre. In the clinical context, the primary focus is on the physical arrangement of the room (e.g. ensuring that the patient is seated), the doctor creating an atmosphere of undivided attention for the interview and using various non-verbal cues (e.g. maintaining eye-contact with the patient). The verbal interaction is intentionally restrained, with the doctor introducing themselves, clarifying their role in the patient's case, and outlining the primary purpose of the consultation. Additionally, the doctor should ensure the patient feels at ease and is prepared to receive potentially life-changing information. This phase may involve typical utterances such as:

> *"Hello, I'm Dr White, and I'm here to discuss the CT scan results with you."*
> *"Is there anybody in the waiting room who you would like to be here as I give you the information?"*

Step 2: Assessing the patient's perception

Since the patient might have incomplete, inaccurate or completely wrong information, it is imperative for the doctor to ascertain the patient's existing knowledge about their condition and their emotional response to it. This establishes a foundation for communication based on the patient's comprehension level. The typical open-ended questions would include:

> *"What is your sense of how you are doing?"*
> *"How worried are you?"*
> (examples taken from Morgans & Schapira 2015: 948)
>
> *"What have you been told about your medical situation so far?"*
> *"What is your undestanding of the reasons we did the MRI test?"*
> (examples taken from Baile et al. 2000: 306)

Step 3: Obtaining the patient's invitation

Patients vary in their preferences regarding the timing and extent of information disclosure concerning their diagnosis, treatment options, or prognosis. Some individuals prefer to receive all the information at once, while others prefer a gradual disclosure, often in the presence of their loved ones. Additionally, certain patients, particularly those in advanced stages of the disease, may opt not to be informed at all (Baile et al. 2000: 306).

> *"How would you like me to give you the information about the test results? Would you like me to give you all the information or sketch out the results and spend more time discussing the treatment plan?"*
> (examples taken from Baile et al. 2000: 306)
>
> *"How much detail would you like me to go into?"*
> *"Is there anything you would not prefer to be told?"*

Step 4: Giving knowledge and information to the patient

Here the doctor is well advised to use hedging to signal to the patient the nature of the forthcoming information.

> *"Unfortunately, I've got some bad news to tell you."*
> *"I am sorry to tell you that… "*
> (examples taken from Baile et al. 2000: 306)

To successfully accomplish this stage, it is crucial for the doctor to make sure the patient comprehends the conveyed information. The following statements might be employed:

> *"This might be a bit shocking, do you follow what I am saying?"*
> *"Could you just tell me in general terms what I have been saying, to check I've explained it clearly?"*

During this phase, when the doctor is actually delivering a diagnosis to the patient, it is strongly recommended to abandon medical jargon and communicate in straightforward, everyday English. In the field of oncology, this would mean using terms like "spread" instead of "metastasized" or "sample of tissue" in lieu of "biopsy" (ibid.: 306).

Step 5: Addressing the patient's emotions with empathic responses

Once the doctor has observed and possibly identified the primary patient emotion, they can offer emphatic statements ("*I can see how upsetting this is to you.*" or "*I was also hoping for a better result.*") or pose exploratory questions in response to the first patient reaction after processing the initial shock ("*Could you explain what you mean?*", "*Now, you said you were concerned about your children. Tell me more.*") (all four examples taken from Baile et al. 2000: 307). In this phase, it is crucial for the doctors to make an effort to empathize with the patient's perspective and verbally validate their feelings.

> *"I can understand how you felt that way."*
> *"Many other patients have had a similar experience."*
> (examples taken from Bailey et al. 2000: 307)

To convey to the patient that their occasionally unfiltered comments have not only been understood but also valued, doctors are encouraged to express gratitude for their openness or honesty (Morgans & Shapira 2015: 949). Given that patients come from diverse professional and social backgrounds, they may employ their own language to evaluate their odds of survival, their determination to adhere to the treatment plan, or even the contemplation of death. It is for this reason that doctors should be familiar with colloquial or idiomatic expressions of the day (see point 4 in 4.1 below).

Step 6: Strategy and summary

In this phase, the doctor has an opportunity to see whether the preceding five stages have been effectively navigated. Additionally, they can also inform the patient of the next step.

> *"What is important for you in the time we have ahead?"*
> *"OK, let's schedule the next appointment right away."*

Throughout the protocol, the doctor follows the individual moves in the rhetorical structure of the genre, signalling transitions between them with signposting phrases to organize information and facilitate processing by the patient. To adapt to the needs of patients and create shared understanding, doctors engage in the linguistic process of reformulation and employ interpersonal strategies to communicate effectively, as illustrated by the phrases included within each stage. On a general level, to effectively execute the oral genre under examination, the doctor should demonstrate a high degree of fluency and intelligibility, employing proper stress and intonation patterns. They should be capable of simplifying complex terms and procedures, presenting them in a language that the patient can not only understand but also act upon. Furthermore, they should demonstrate active listening skills and be attuned to patient cues. By adhering to the protocol structure, doctors provide structure to the interview, increasing its objectivity and predictability for their patients.

4 Methods and data

As previously mentioned, the feasibility of integrating an authentic clinical tool into an ESP lesson was assessed using a two-step methodology: i) development of an ESP task based on the SPIKES protocol, with a focus on linguistic elements, ii) collection of student feedback following the lesson, focusing on the perceived usefulness of the tool.

4.1 Devising an ESP lesson

In order to translate the medical communication genre into a viable lesson plan, the following steps needed to be taken. Firstly, the rhetorical structure of the genre of delivering bad news was identified, utilizing as the key document the above-mentioned evidence-based protocol (Baile et al. 2000). Secondly, the language means applied in each step of the protocol were determined. Thirdly and finally, the key aspects of the lesson during which first-year medical students are exposed to the linguistic features of the genre were outlined, followed by student participation in a relevant role-play designed as a low-fidelity or low-authenticity simulation. This approach aligns with the current trend in medical education, which emphasizes the use of simulation techniques. The term fidelity refers to the event's ability to replicate real-life situations. In a high-fidelity simulation, for instance, the replication is so precise that even a trained healthcare professional may find it challenging to distinguish the simulated event from an actual one.[1] What follows are the six key stages of the lesson in question.

1) Firstly, students are introduced to the topic through two warm-up activities. In the initial activity, they are presented with six situational scenarios (see Figure 1) and asked to select the one they perceive as the most challenging when breaking bad news to a patient. They are encouraged to explain their choice in the context of other cases. In the second activity, students collaborate in small groups in order to identify and discuss reasons why doctors often find it difficult to deliver adverse news. Some of these reasons include a lack of proper training in communicating bad news, the fear of causing emotional distress to the patient, and the apprehension of being blamed by the patient for the distressing information. By engaging in these activities, students are expected to gain valuable insights into the complexities and emotional aspects involved in delivering negative news, helping them develop the necessary skills and empathy needed for their future medical careers.

1. Inform a woman, 35, who has been experiencing unexplained fatigue and persistent headaches, that she has been diagnosed with an aggressive form of brain tumour that is inoperable and has an average prognosis around 5 years.
2. Inform the parents of a 16-year old teenage girl who was involved in a severe car accident that due to the multiple traumatic injuries including spinal cord damage, she will be permanently paralysed from the waist down.

Figure 1: Two illustrative instances where doctors face notable challenges in delivering difficult news (generated by OpenAI ChatGPT model (2023), adapted for classroom use)

2) In the second round of activities, the goal is to assist future medical doctors in understanding how patients perceive the reception of bad news. Initially, students are provided with authentic patient statements from which they identify the most prevalent feelings experienced by the patients (see Figure 2). Later, they delve deeper into the patient's perspective by defining the key words that convey the patient's mental state upon receiving a life-changing diagnosis. Finally, students are tasked with generating a set of tips for doctors on how to effectively deliver bad news.

"I was diagnosed on a Friday, and told that on the Monday I would have to deliver our baby, who was exactly 32 weeks. I then needed urgently to begin what would be nearly a year of hardcore treatment: in-patient chemotherapy, dripped through a Hickman line for 72 hours at a time; a stem-cell transplant so brutal it carried a mortality rate of its own and, finally, radiotherapy."

Figure 2: Example of patient reaction to bad news (Guardian Newspaper, 2012, online version)

3) In order to provide students with a better understanding of delivering unwelcome news effectively, the session includes two videos demonstrating incorrect and correct approaches by doctors. These videos, originating from the UK and the USA, provide ample material for analysing intercultural competence. The students, for instance, identify international differences based on their own experiences as patients within the Czech clinical environment. Notably, differences in politeness and the use of inclusive language to reassure patients that they are not alone in their situation are discussed. Subsequently, students are introduced to the SPIKES. By understanding the essential components of the SPIKES protocol and practising the typical doctor phrases for each stage, it is hoped that students will be better prepared to navigate such challenging conversations in their future medical careers.

4) As the culminating step of preparation before the actual role-play, students will once again be confronted with a language activity involving matching the types of questions doctors would ask during different stages of the interview, utilizing the SPIKES protocol. For instance, paired categories and questions could be as follows:

- obtaining the patient's invitation – *"Are there any areas you would rather I did not go into?"*
- addressing the patient's emotions, empathic statement – *"I wish the news were better."*

Another important activity at this stage involves interpreting the patient's informal responses to receiving bad news, especially those expressed through colloquial language. These expressions provide valuable feedback to the doctor about how the patient is coping with the information, e.g. "So, it's curtains for me, is it?", "So, I might pull through?" (examples taken from McCullagh & Wright 2007: 92).

5) The knowledge acquired during the lesson, including the understanding of the SPIKES protocol and various aspects of doctor-patient communication, is put into practice during an approximately 20-minute long doctor-patient role-play session. Students select one of the short scenarios, e.g. Explain to a 48-year-old man that he has a metastatic relapse of their prostate cancer. The patient has been in remission for tree years, and now the cancer has resurfaced. As outlined above, the focus lies on employing empathetic, informative, and appropriately timed language, fostering a collaborative approach in the consultation, with a view towards potential future perspectives.

6) Students engage in peer-to-peer feedback and self-reflection. The value of feedback in healthcare education, particularly for medics and nurses, has been established in numerous studies examining this effective tool for learning

(Cushing et al. 2011, Solheim et al. 2017, Raut & Gupta 2019). However, some studies have pointed out the difficulty some students face in adopting peer feedback (Van Blankenstein et al. 2021). It is worth noting that the process of reflection is part of the ongoing professional development following graduation for clinicians (Stanley et al. 2018), as well as teachers at medical faculties (Ruesseler et al. 2014, Pannekoeke et al. 2023). While the official SPIKES protocol (Baile et al. 2000) does not explicitly endorse peer-to-peer feedback (in ESP role-plays, this would entail feedback from the patient to the doctor) or self-reflection (performed by the doctor for their own benefit without the need to share the findings with others), in my teaching I incorporate both activities with the ultimate goal of enhancing proficiency in delivering difficult news to patients. Moreover, this aligns with the medical simulation-based debriefing approach, which seeks to assess the event in hindsight and extract valuable lessons from it.

The patient questionnaire (Figure 3) was created by teachers at the author's department, drawing inspiration from the SPIKES model. This questionnaire serves as a basis for the feedback given by a student playing the patient to the student playing the role of the doctor. Again, the names of the six steps were taken from Baile et al. (2000: 305-6, 308), for their full description refer to the left column of Figure 3. The questions in the doctor self-reflection questionnaire (Figure 4) were taken directly from Gibbs' Reflective Cycle as cited in Reflection Toolkit at the University of Edinburgh website.

SPIKES stages	**Questions created by the team of English teachers at the author's department**
"**SETTING UP** THE INTERVIEW"	– Did the doctor create a positive and friendly impression by smiling and making eye contact? – Did the doctor introduce themselves and clarify their role? – Did the doctor communicate the purpose or agenda of the interview?
"ASSESSING THE PATIENT'S **PERCEPTION**"	– Did the doctor ask you about …? – Was the doctor interested in understanding your perspective on your condition? Did the doctor ask you about your worries and concerns?
"OBTAINING THE PATIENT'S **INVITATION**"	– Did the doctor ask if you were prepared to hear about your condition or how much information you wanted to know? Did they respect your preferences?
"GIVING **KNOWLEDGE** AND INFORMATION TO THE PATIENT"	– Was the information clear and accurate? – Did the doctor give unfavourable information in a polite and empathic way? – Did the doctor present treatment options? Did they provide explanations regarding the benefits and potential side effects of each option?

"ADDRESSING THE PATIENT'S **EMOTIONS** WITH EMPATHIC RESPONSES"	– –	Did the doctor use the appropriate words when delivering adverse information for the patient (e.g. expressions like "I am sorry" or "unfortunately")? Did the doctor maintain a positive and encouraging attitude?
"**STRATEGY** AND **SUMMARY**"	– – –	Did the doctor check that you understood all the information? Did the doctor discuss the next steps with you? Did they provide a summary of the information for you?

Figure 3: The patient questionnaire

Stage		**Questions taken from Gibbs' Reflective Cycle**
"Description"	–	"What happened?" "Who was present?"
"Feelings"	– –	"What were you feeling during the situation?" "What were you feeling before and after the situation?"
"Evaluation"	–	"What went well?" "What didn't go so well?"
"Analysis"	–	"Why did things go well?" "Why didn't it go well?"
"Conclusion"	–	"What skills do I need to develop for me to do this role play better?"
"Action plan"	–	"If I had to do the role play again, what would I do differently?"

Figure 4: The doctor self-reflection questionnaire

As it was found out during the lesson, students were initially unable to anticipate the depth of the answers which the questions were designed to elicit. For this reason, they were subsequently introduced to examples of self-referential, metacognitive and evaluative language. These examples were generated using the OpenAI ChatGPT model (2023) and adapted by the teachers for classroom use (Figure 5).

Self-referential language
- I noticed that I felt anxious during the interaction with the patient.
- I realized that I struggled to convey empathy effectively.
- I found it challenging to maintain eye contact during the consultation.

Metacognitive language
- I was aware of my tendency to interrupt the patient while they were speaking.
- I thought about the possible reasons for the patient's reluctance to follow the treatment plan.
- I recognized that I need to improve my active listening skills to better understand the patient's concerns.

Evaluative language
- In retrospect, I believe I could have been more compassionate in delivering the diagnosis.
- When reviewing the encounter, I acknowledged my lack of clarity in explaining the treatment options.
- I realized that my communication style might have contributed to the patient's frustration.

Figure 5: Examples of self-referential, metacognitive, and evaluative language presented to students (generated using OpenAI ChatGPT model, 2023).

4.2 Administering an online survey to students

The diverse levels of engagement exhibited by students during the role-plays serve as an initial indicator to the teacher of both how well students accept the activity and consequently of their potential to learn. However, formal feedback in the form of an anonymous online survey tends to be a more objective tool for gaining insights into the perceived usefulness of an activity by students. The survey, titled "Clinical Communication with Patients in English Lessons: Students' Opinions and Attitudes", was conducted in Czech to accommodate students with lower levels of communicative competence in English and avoid any constraints on their participation. It was administered through the MS Forms platform, which is available within the Masaryk University IT package. Conducted in April and May 2023, the survey was voluntary (students did not receive any bonus points for participating) and anonymous. The questionnaire reached all first-year students of general medicine at the Faculty of Medicine, Masaryk University in Brno, including four groups taught by the author and 16 groups taught by other teachers at the department, totalling 403 students. A total of 65 students completed the questionnaire, resulting in a return rate of 16 per cent. I find the return rate to be satisfactory considering the circumstances surrounding its administration. It was voluntary and anonymous, conducted right before a rigorous spring exam period, amidst numerous other surveys that students are required to complete on a semester basis. These include university-wide surveys generated by the university information system, which, although valuable, may not fully meet the particular needs of a specific department. As a result, individual teachers within the author's department conduct their own surveys, allowing them to tailor questionnaire items to better address their unique requirements. The survey conducted for the purposes of this paper was the third one within a semester to enquire about students' assessment of the English course. It featured five closed score-based questions, where one point denoted the most positive response (i.e. "very useful"), and five points represented the most negative answer (i.e. "totally useless"). While each closed question allowed students to verbally specify their responses, this option was utilized less frequently. However, the verbal responses provided offered valuable insights into the mindset of the students, complementing the closed questions answered by all 65 students. The questionnaire addressed various topic areas, including: i) the importance of effective communication in providing quality healthcare services, ii) students' perceived level of preparedness for clinical communication resulting from medical English classes, iii–iv) the degree of difficulty or ease with which students assumed the roles of the patient and the doctor, and v) usefulness of peer feedback.

5 Results

The informal face-to-face survey conducted among the team of five teachers involved in delivering the lesson to 20 study groups confirmed the effectiveness of the lesson plan. The plan demonstrated strengths in the following aspects: i) warm-up discussions addressing the difficulties doctors face when disclosing unfavourable information, ii) use of patient-friendly language focusing on adapting complex medical information, including specialist terminology, for the benefit of the patient, iii) incorporation of phrases used in the individual stages of the SPIKES protocol, iv) practice of informal patient language to enable doctors to evaluate patient responses, v) inclusion of peer feedback and a self-reflective questionnaire. As is customary, plans have been made to further refine the lesson plan for future years. Additionally, and more importantly, as indicated above, student data was assessed. The following text and Figures 6-10 present the student data and its interpretation. The information gained from students plays a key role in shaping the unit in question and, subsequently, larger portions of the course in the future.

The gathered data indicated that the majority of students acknowledged the significance of effective doctor-patient clinical communication in delivering high-quality healthcare. Specifically, 78 per cent of the participants awarded a score of 1 point, resulting in an overall score of 1.72 (Figure 6). Simultaneously, they also acknowledged that more attention should be devoted to clinical communication within the English course and other courses in the curriculum. This is illustrated by the following student's open statement translated directly into English:

> "I appreciate the time we spent communicating with the patient, but I don't think it's sufficient. I assume that we will address this in other subjects as well. Additionally, each student probably needs to find their own approach to this and not rely solely on simulations in teaching. However, it would be beneficial to incorporate additional patient communication simulations into English lessons."

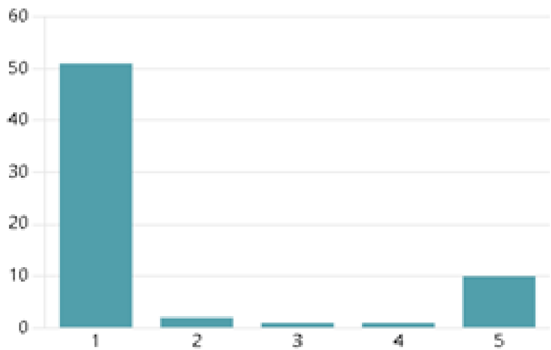

Figure 6: Importance of effective clinical communication as perceived by first-year medical students (1 = very important, 5 = totally unimportant; overall result 1.72)

However, there were slightly less optimistic outcomes when evaluating the impact of medical English classes on achieving or contributing to the achievement of effective clinical communication. The largest section (43%) chose 3 points, resulting in an overall score of 2.91 (Figure 7). This discrepancy may be attributed to the relative independence of medical English classes from the rest of the curriculum and possibly lower trust in English teachers as instructors of clinical communication. While teachers are generally aware of the

ESP boundaries which they adhere to, these speculations are worth considering in future research. This is especially true since students with no previous curricular experience in clinical communication and lacking detailed information about the curriculum in higher years, might be confused about the purpose of the medical English classes, as the following response from a student shows:

> "I DO NOT believe clinical communication should be a part of the English course. I also have reservations about addressing this topic during the first year of general medicine."

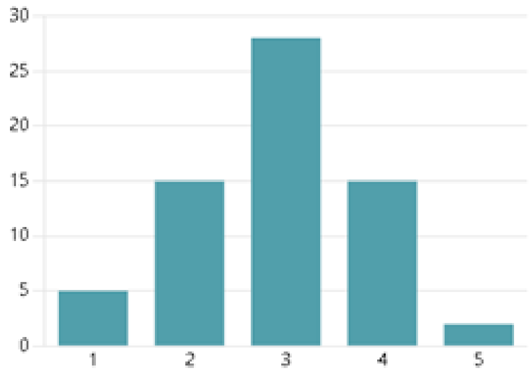

Figure 7: Readiness for real-life clinical communication in English as perceived by first-year medical students after attending medical English classes (1 = well equipped and ready, 5 = not equipped at all; overall result 2.91)

There was a noted disparity in the ease with which students assumed the roles of patients and doctors. Regarding the former, the largest segment of students (43%) chose 2 points, which was followed by 37 per cent choosing 3 points, resulting in an overall score of 2.26 (Figure 8). Concerning the doctor role, the overall result is 3.29 (Figure 9). This is not surprising, considering the students are in their first year, considerably distant from clinical placements which take place in the third year and their future professional practice. Additionally, throughout the questionnaire, students frequently mentioned that they often struggled to find the right phrase in their mother tongue, let alone in English:

> "I haven't been in a similar real-life situation, so it's difficult to fully assume the role of a doctor. Even in regular practice, communicating bad news is so challenging that acquiring average level skills to handle such situations is not easy. This is particularly evident when trying to find suitable expressions in English."

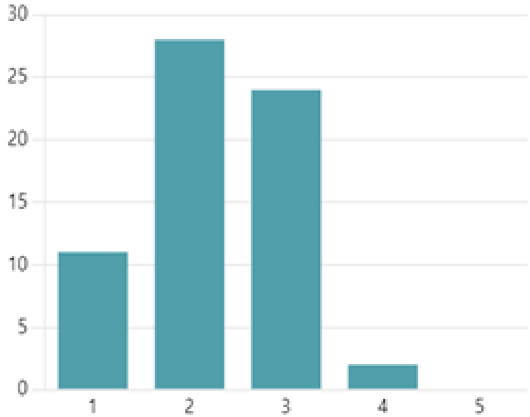

Figure 8: Difficulty of assuming the role of the patient (1 = very easy, 5 = very difficult; overall result 2.26)

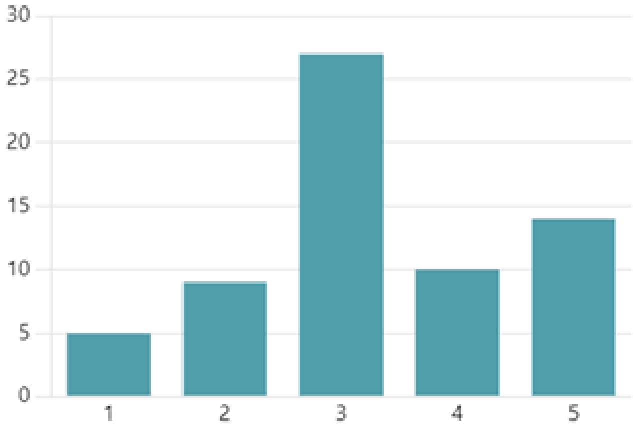

Figure 9: Difficulty of assuming the role of the doctor (1 = very easy, 5 = very difficult; overall result 3.29)

As for the usefulness of peer feedback to the low-fidelity simulation, 29 per cent opted for 3 points, but 18 per cent chose 4 or 5 points, leading to an overall result of 2.43 (Figure 10). This result can be attributed to the relatively limited exposure to the importance of peer-feedback during the classes, which will be addressed in future years. The written feedback, however, contains positive answers, for example:

> "This was the first semester, and it went well. The low-fidelity simulation here was great. I also believe that feedback is a good teaching method."

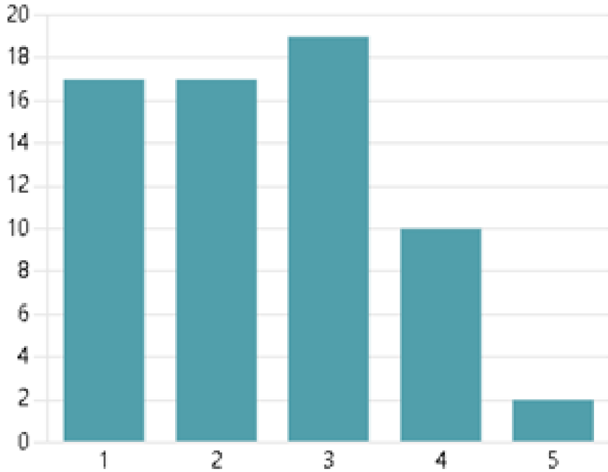

Figure 10: Usefulness of peer feedback (1 = very useful, 5 = totally useless; overall result 2.43)

Potential course adjustments in response to student feedback will include the following features:

1) Incorporating more doctor-patient role-playing opportunities, with a greater focus on the preparatory stage to increase the fidelity of the scenarios. In their comments, some students pointed out that knowing each other within their fixed study groups, in which they undertake the entire studies, might hinder the desired authenticity of the role-play. Knowledge of the role-play partner from formal curricular, as well as informal extracurricular events, may detract from the seriousness of the communication practice, as illustrated by the statement below. Students noted that in the first aid simulation course conducted outside of English classes, their fixed study group was mixed with other groups, making the choice of scenario partner less predictable:

> "The environment of our fixed study group is very informal, which makes it harder to engage in the scenarios. For instance, when teaching first aid, the respective instructors mitigated this by randomly dividing the groups, and the person for whom the simulation was prepared had minimal information about what they were getting into at any given moment."

2) Emphasizing the advantages of self-reflection and feedback will remain a key component. The survey results suggest that it is vital to enhance the practising of self-referential, metacognitive, and evaluative language that is essential for formulating responses to these inquiries.

6 Conclusion

This paper explored and demonstrated the effectiveness of the genre-based approach through the application of an authentic clinical communication tool in the study and teaching of medical English. In a lesson which incorporated the key aspects of the protocol developed by Baile et al. (2000), students were introduced to the complexities of delivering unfavourable news to terminally ill patients. Through a series of activities which culminated in the performance of a role play designed as a low fidelity simulation, students were able to apply their acquired knowledge in practical situations. In alignment with the practice in simulation medicine, students were able to train their ability to critically reflect on their practice, as well as give and receive peer-feedback. The findings from the student online survey provided insights into the perceived usefulness of the activities and the students readiness for real-life clinical communication. While the majority of students recognized the importance of effective clinical communication, there were mixed responses regarding the impact of medical English classes on their preparedness. Similarly, students expressed varying levels of difficulty in assuming the roles of patients and doctors, highlighting the challenges inherently present in pre-clinical medical education. Adjustments to the course based on student feedback will include more opportunities for doctor-patient role-plays, with a focus on enhancing the fidelity of scenarios and emphasizing the value of self-reflection and peer feedback. Integrating authentic clinical communication tools into medical English classes offers a promising approach to enhancing the communicative competence of future healthcare professionals.

Note

[1] Healthcare simulation is a "technique that creates a situation or environment to allow persons to experience a representation of a real health care event for the purpose of practice, learning, evaluation, testing, or to gain understanding of systems or human actions" (Society for Simulation in Healthcare 2020: 21).

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HYPES IN UNDERGRADUATE THESIS ABSTRACTS BY INDONESIAN STUDENTS ACROSS YEARS

Cita Nuary Ishak, Yazid Basthomi and Nurenzia Yannuar

Abstract

Previous studies showed that as a result of intense competition to succeed in academic pursuits such as publishing research papers and securing grants, promotional language known as hypes are pervasive in academic texts. This paper investigates hypes in a corpus of undergraduate thesis abstracts written by Indonesian English learners in a span of ten years, from 2011 to 2020. Taking a corpus-based approach, it examines the extent to which hypes are used in the thesis abstracts, including their linguistic manifestations, frequencies over the years, and the values they promote. We found hypes in all five moves of thesis abstracts, but they were most frequent in the introduction, in which they emphasized the importance and novelty of the research and stress the urgency of the research problems. In the span of the ten years, the frequencies of hypes generally increase, indicating the students' awareness of the need to convince thesis supervisors, board of examiners, and their colleagues and the efforts to stand out in a competitive academic landscape. *Important*, *investigate*, and *reveal* were the most frequent hype words over the years and their instances suggest a growing emphasis on significance, a stronger commitment to evidence-based research, and desire to contribute new and concrete findings.

Keywords

hypes, promotional language, thesis abstracts, Indonesian learners, EFL writers

1 Introduction

In the context of higher education, thesis writing is important for both students and institutions. For students at higher educational institutions, thesis writing is the evidence of having conducted research activities (Nugraha & Mbato 2022) and is indispensable to meet the requirement for receiving a diploma and to succeed in academic pursuits. For universities, research embodied in the process of thesis writing has been their "unique selling point and is central to their identity and mission" (Fyfe et al. 2017: 11). Thus, the quality of theses is the parameter through which institutions achieve better outcomes (Valdez & Rosa 2021).

In the Indonesian context, thesis writing has become more competitive ever since the Indonesian Directorate General of Higher Education (DIKTI) made article publishing mandatory for undergraduate, master's, and doctoral students, which was an attempt to increase the international publications of Indonesian authors and enhance the country's image at the international level (Miasari et al.

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2018, Putri et al. 2019). Based on our experience, due to the limited amount of time and budget to do research to meet this requirement, most research articles that undergraduate students plan to publish are commonly a certain part from their theses.

The expectations to publish their research has encouraged students to improve their ability to write scholarly pieces for publication (Cahyono & Amrina 2016). Being aware of the significant relationship between institutional support and the quality of universities' scientific publication (Putri et al. 2019), universities in Indonesia have provided different types of support for students who are working on their theses. As an example, the university in which this study takes place, has established and run an academic writing centre and writing workshops to help students improve the quality of their theses and accelerate research publication. It regularly invites visiting professors from overseas and published writers to help students improve the quality of their theses. The purpose is to increase the chance of getting their thesis published in reputable journals and achieving larger readership. The university also provides financial support through competitive grants where students are to submit their thesis proposals to participate. When driven by these goals, it is plausible for the undergraduate students to make (un)conscious linguistic choices that best promote parts of their theses. As Hyland and Jiang (2021b) argued, factors such as higher pressure in research publishing and explicit incentives, either grants or merits, have led writers to "exaggerate" aspects of their work and to accentuate the value, significance, and uniqueness of their research.

In the literature, words and phrases that are used for promoting positive aspects of a text are referred to as 'hypes' (Rinaldi 2012, Millar et al. 2019, Hyland & Jiang 2021a). The term 'hypes' covers, among others, positive words (Vinkers et al. 2015), boosters (Hyland 2005), drama words (Wheatley 2014), superlatives (McCarthy 2015), and intensification (Hinkel 2005). Previous studies on hypes have identified their linguistic manifestations and functions in academic texts (e.g. Hinkel 2005, Wang & Yang 2015, Millar et al. 2019), and some concerns about their implications to the communication of science have also been raised (e.g. Rinaldi 2012, Master & Resnik 2013, Wheatley 2014, Scott & Jones 2017, Intemann 2022). One of the concerns, as has been observed by Millar et al. (2019, 2022) and Hyland and Jiang (2021a, 2021b), is the growing trend to use hypes in academic writing.

In terms of genre, hypes were pervasive in Randomized Controlled Trials (Millar et al. 2019), clinical research reports (Millar et al. 2020), abstracts of successful grant applications (Millar et al. 2022), highly cited papers about Covid-19 (Hyland & Jiang 2021a), and journal articles (Hyland & Jiang 2021b).

However, not much is known about how hypes are manifested in undergraduate thesis abstracts written by EFL writers, particularly Indonesian student-writers. Some recent studies on abstracts written by student-writers in Indonesia are concerned with the rhetorical moves (e.g. Basthomi 2006, Amalia, et al. 2018, Hakim et al. 2021), metadiscourse markers (e.g. Mazidah 2019, Mazidah et al. 2022), coherence (e.g. Suwandi 2016, Sapriawan & Chandra 2022), and lexical bundles (Samodra & Pratiwi 2018). To the best of our knowledge, there has not been much attention given to hypes in undergraduate thesis abstracts.

The present paper examines hypes in undergraduate thesis abstracts produced by Indonesian student-writers. It aims to explore the extent to which thesis abstracts are hyped by observing their linguistic manifestations and trends over the years. As abstracts naturally promote the entire work to the readers (Arsyad et al. 2021), how the Indonesian student-writers fill this promotional space with explicit lexemes that best promote their work evokes further analysis. Based on this rationale, this paper aims to answer the following questions:

1. To what extent do Indonesian undergraduate student-writers hype their thesis abstracts?
2. Has the trend changed over the years from 2011 to 2020?
3. What values do the Indonesian undergraduate student-writers promote in their thesis abstracts?

2 Literature review

2.1 Thesis abstracts by EFL writers

The abstract of any scientific publication is important in giving readers the first impression of the overall text. They are the first section that most people read before deciding on the value of the whole work (Male 2018). In the case of theses and dissertations, abstracts are usually sent to prospective examiners prior to inviting them as formal examiners and they may choose not to examine a candidate if the abstract is not written in a proficient manner (Sivasubramanian et al. 2018). As the point of entry to the whole text (Sapriawan & Chandra 2022), abstracts help readers make quicker decisions if the whole text is worth reading and cited, or if it is eligible for sending out to the board of examiners.

With the increasing demand for publication, most theses and dissertations today are written not only for the completion of study but also for succeeding other academic pursuits such as securing research grants and getting published. In this case, abstracts are particularly influential to decide whether or not the thesis or dissertation is worth funding or publishing. While the primary aim of an abstract is to communicate the essence of a research work (Nugraha & Mbato

2022), when given such demands, it needs to be written in a way that makes it stand out among abundant of existing research projects. To capture readers' attention and gain bigger extent of readership, abstracts not only need to be informative and merely reporting the research, but also be persuasive (Alek et al. 2022) and intriguing enough to hook the readers (Belcher 2019).

Some previous studies have shown that it is often a challenge for most EFL writers to compile thesis abstracts. In the Indonesian context, abstract writing is not easy for most students, including novice authors and postgraduates, particularly in putting their ideas into written form and composing words with good quality (Arsyad 2014). This is probably due to the lack of awareness of writing in academic genres (Male 2018). As reported in Sujiyani (2022), many Indonesian EFL students have difficulties in producing, organizing, and delivering ideas in their abstracts to meet the expectation of widely accepted international standard of English academic writing conventions.

While there have been several studies on conventions in academic genre, there has been less interest given to the linguistic features of thesis abstracts. In terms of conventions in academic genre, Amalia et al. (2018), Male (2018), and Nugraha and Mbato (2022) found that Indonesian writers have accommodated moves such as situating the research, describing the methodology, and summarizing the findings in their abstracts. However, most tend not to be selective in using moves in the abstracts to best promote their work (Male 2018). In terms of linguistic features, Mazidah et al.'s (2022) study compared the uses of hedges and boosters in Indonesian students' abstracts and found that boosters are used to demonstrate the originality of research, put support on the authors' statement, and strengthen opinions.

2.2 Hypes in research writing

Hypes are promotional language that writers use to embellish parts of their research. Hype is defined as hyperbolic and/or subjective language that authors use to glamorize, promote, and exaggerate aspects of their research (Millar et al. 2019). Hypes is an umbrella term that includes linguistic features such as hyperbole (Leech 1983), claiming centrality (Swales 1990), intensification and amplification (Hinkel 2005), stance and engagement (Hyland 2005), drama words (Wheatley 2014), and superlatives (McCarthy 2015, Scott & Jones 2017). Thus, hypes are characterized by particular lexicon, which may allow for a more reliable and quantifiable identification (Millar et al. 2022).

Hyping parts of research for the purpose of promoting its worthiness, novelty, or contribution is not new in research writing and publishing (see "promotional culture" in Wernick 1991). What is new is the considerably increasing attempts to promote aspects of research more than ever before, as has been found by recent studies (e.g. Vinkers et al. 2015, Hyland & Jiang 2021a, Millar et al. 2022). These studies found that positive language, such as *novel*, *innovative*, *sustainable*, and *important* which carried a sense of promotion and embellish certain aspects of the text, has intensified in research papers published at least in the past ten years.

Such promotional tendencies in research writing might be the consequence of what Fairclough (1993) referred to as "marketization" of discourse, that is, where discourse is used as a means for "selling" goods, services, or ideas. He believed this discursive practice involved "the subordination of meaning to, and the manipulation of meaning for, instrumental effect" (ibid.: 141). Such manipulation of meaning can be observed through the manipulation of language, particularly through linguistic features that exaggerate some parts of the research. Rinaldi (2012) and Millar et al. (2019) alluded to such phenomenon as hypes, which demonstrate a sensationalization in communication of science.

2.3 Categories of hypes

Categories of hypes have been proposed by researchers like Millar et al. (2019, 2020, 2022) and Hyland and Jiang (2021a, 2021b). From their analysis of hypes in Randomized Controlled Trials, Millar et al. (2019) classified hypes into broad research area, specific research topic, authors' prior research, research method, research outcome, research primacy, and research conclusion, which "correspond with the IMRD (Introduction, Methods, Research, Discussion) structure of the conventional science research paper" (Hyland & Jiang 2021b: 196). They also categorized hypes based on their grammatical realisation such as adjective, adverb, noun, possessive adjective, and determiner.

In their later study, Millar et al. (2022) categorized eight groups of hypes based on their shared semantic properties: importance, novelty, rigor, scale, utility, quality, attitude, and problem. This taxonomy was based on an extensive study of hype adjectives in the abstracts of grant applications from 1985 to 2020. Thus, all hypes in this taxonomy are adjectives even though the taxonomy is also applicable for analysing other types of hypes such as verbs and adverbs. This taxonomy also overlaps with Hyland and Jiang's (2021a, 2021b) categories of value that writers seem to promote in their writing: certainty, contribution, novelty, and potential. 'Certainty' and 'novelty' are similar to 'importance' and 'originality' in Millar et al.'s (2022) taxonomy. Meanwhile, 'contribution' is concerned with the immediate use of the research issue (e.g. *effective*, *useful*) and 'potential' stresses the possible future value of the research (e.g. *promising*, *apparent*).

For the purpose of the present paper, we referred to Hyland's (2000) move framework of abstracts, namely, introduction, purpose, method, product, and conclusion, to examine the extent to which the undergraduate thesis abstracts are hyped. We also adopted the broad categories of values by Hyland and Jiang (2021a) which consist of certainty, contribution, novelty, and potential as the basis for identifying the values that hypes tend to promote.

3 The present study

3.1 Research design

This paper uses a corpus-based design which combines quantitative and qualitative approaches (Biber et al. 1998). The quantitative approach is to elicit the frequencies of hypes from the corpus of undergraduate thesis abstracts that were published from 2011 to 2021. The frequencies are obtained by analysing the data using AntConc (2022). As it is useful for corpus studies to supplement the quantitative results with qualitative analysis (Anthony 2017), the linguistic manifestations of hypes and their trends are interpreted qualitatively by identifying and discussing emerging issues from their uses in the thesis abstracts.

3.2 The corpus data

The data of this study is a corpus of abstracts of undergraduate theses contained in the Corpus of State University of Malang Indonesian Learners' English (C-SMILE). The corpus was developed by the Research on Linguistic (RoLing) group from Universitas Negeri Malang and comprises theses and research articles written by the students whose majors are English Language Education and English Language and Literature (see Basthomi et al. 2019). The undergraduate thesis corpus totals up to 947 abstracts (441,638 tokens). As the number of students graduating each year differed, the number of theses being submitted to the university also varied. To compensate the different numbers of undergraduate thesis abstracts in the corpus, the raw frequencies of hypes were normalized to per thousand words. The composition of this abstract corpus is shown in Table 1.

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
abstracts	21	34	100	143	143	93	89	141	116	67
words	10,750	14,911	47,479	66,209	69,486	43,049	40,638	60,660	58,527	29,929

Table 1: Composition of the corpus of thesis abstracts by year

3.3 Data collection

To examine hypes, we primarily followed Hyland and Jiang's (2021a) source of hypes, such as boosters and attitude markers (Hyland 2005), positive words

(Vinkers et al. 2015), superlatives (McCarthy 2015), hyperbolic terms (Millar et al. 2019), Academic Word List (Coxhead 2000), and Academic Vocabulary List (Gardner & Davis 2013). From these studies, we compiled a list of hype words to be identified in our data. To supplement the list, we collected words and phrases that are shown to function as hypes in Hyland and Jiang (2021a, 2021b) and several other previous studies, such as, broad semantic categories (Millar et al. 2022), superlatives (Scott & Jones 2017), drama words (Wheatley 2014), intensifiers and amplifiers (Hinkel 2005), and promotional strategies (Martín & Pérez 2014). This exhaustive process resulted in a list of 320 hype words (see the Appendix).

3.4 Research procedure

All undergraduate thesis abstracts published from 2011 to 2020 in the C-SMILE were examined. Words and phrases, which relevant literature (e.g. Hyland 2005, Wheatley 2014, Vinkers et al. 2015, Scott & Jones 2017, Millar et al. 2019, Hyland & Jiang 2021a, Millar et al. 2022) identified as hypes, were compiled. They were then compiled into a single UTF-8 file and searched in the corpus using the Word List tool in AntConc 4.1.4 (Anthony 2022). Since it is possible that some words and phrases do not function as hypes, we observed the search results using the KWIC tool in AntConc to manually examine the words and phrases in context and ensure the accuracy of the findings.

Following Millar et al.'s (2022: 3) procedure, we categorized the items as hypes "by judging whether or not they could be removed or replaced with a more objective or neutral alternative word without altering the information within the sentences". The word *interestingly*, for example, according to Wheatley (2014), is a hype word when it functions as an emotive word. Thus, when the word appears in "*Interestingly, the sad emoticon usages are followed by a request or demand in most cases*" (16REEG), it is considered as hypes, as it draws readers' attention to the research finding. However, when *interestingly* appears in "*It was because the text-provided in coursebook used cannot interestingly equip students' needs*" (13LUK) it is not performing as hypes and thus, is excluded from the findings. Next, we independently coded the most frequent hype words and any disagreements regarding data coding and labelling were solved through discussions. Lastly, we recalculated the raw frequencies of the hype words and adapted Biber et al.'s (1998) formula for calculating the relative frequencies.

4 Findings

4.1 The extent to which Indonesian student-writers hype their undergraduate thesis abstracts

We identified a total of 3,043 instances of hypes in the undergraduate thesis abstracts published from 2011 to 2020, corresponding to 3.21 cases per-abstract and 68.90 cases per 10,000 words (henceforth ptw). Hypes were found in all moves that were argued by Hyland (2000), namely, the introduction, purpose, method, product, and conclusions. Over than half of the total instances of hypes in the corpus were used in the introduction move.

In the introduction, hypes promoted the research background by claiming the significance, urgency, and complexity of the research topic and by emphasizing on the research contribution. Example (1), for instance, was taken from theses that suggested the idea of using videos for teaching writing, and Example (2) from video games for teaching gender. Hypes were used to describe the proposed media as *powerful*, *effective*, and *useful* tools, emphasizing that the research had the potential to bring about advancements in language learning.

(1) *Video was proposed to be applied in the teaching and writing because video is a* ***powerful*** *motivator and is* ***potentially effective*** *in showing action or process.* (11KHO)

(2) *The* ***rising*** *popularity of video games makes it become a* ***useful*** *medium to study about gender issues by focusing on the game's characters.* (12NDR)

Hypes also functioned to claim that the research topic was the most difficult or challenging (3) and important (4), creating a sense of urgency and relevance.

(3) *Writing is often considered as the* ***most difficult*** *and* ***complicated*** *skill among the four language skills.* (14ENI)

(4) *Out of those four skills, listening has a* ***great*** *role and it is considered one of the* ***fundamental*** *skills in learning English.* (13NFZY)

When appearing in the background, most of the hypes emphasized the prominence of the research topic to make it more appealing. They were used to convince readers about the importance of the topic and the worthiness of conducting the research. This function was identified for *very*, *valuable*, *important*, and *worth*.

(5) *Due to the fact that speaking skill is **very important**, a study about English speaking skill is **worth** conducting.* (20NIS)

(6) *However, there is one more medium of art that is **worth** looking into: videogames.* (16MHF)

In the following instances, hypes functioned to embellish the expected contribution of the research:

(7) *This research is expected to provide an **advantageous** reference for research related to grammatical errors in students' speaking and writing.* (19LAI)

(8) *For teacher this study can give an **innovative** technique in teaching reading that later on can contribute to the development of knowledge.* (19RAF)

In the abstracts, hypes were found to accentuate the research method through words such as *best* and *detailed*, which highlight the benefits of carrying out certain research procedures.

(9) *Each stage is carried out to get the **best** final form of the product.* (15ANN)

(10) *In the present study, the researcher used qualitative methodology with descriptive approach in order to describe the observation and **detailed** documentation of a phenomenon of interest.* (19FAI)

Statements about the research findings were the second most hyped after the introduction. In this move, hypes generally highlighted the significance and uniqueness of the research findings. Particularly in the abstracts from English Language Education, hypes promoted the strengths of the proposed teaching strategies, media, and techniques. This can be seen in the following examples:

(11) *Dictogloss method provides some **benefits** in giving students a more precise improvement of listening than doing other approaches.* (11ADW)

(12) *It showed that the strategy is **effective** in covering and fitting **all** range of the students.* (13IST)

Lastly, hypes also appeared in conclusions, where they functioned to reemphasize the research output (13) and reamplify its contribution (14).

(13) *The researcher hopes that this study can give **new** sight and information about the Indonesian phonological interference.* (16DIM)

(14) *Based on the result of the findings, it is suggested that English teachers use fishbowl strategy in the teaching learning process which has been proven* ***effective*** *in improving students' speaking ability.* (17HEA)

4.2 The frequency shift of hypes from 2011 to 2020

We found that the total frequencies of hypes in the corpus increased over the years, especially from 2013 until 2020. Hypes surged from 43.72 in 2011 to 62.37 in 2012, but they peaked in 2020 with a total of 96.22 hypes ptw (Table 2).

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
hype items	28	37	64	70	83	65	70	86	84	65
raw frequency	47	93	230	350	377	297	316	527	514	288
per 10,000	**43.72**	**62.37**	**48.44**	**52.86**	**54.25**	**68.99**	**77.75**	**87.53**	**87.82**	**96.22**

Table 2: Frequency of hypes across the 10 years

Not only did the total frequencies of hypes increase, but the hype items in the later years were also more varied compared to the first two years. Although the total frequencies of hypes decreased to 48.44 ptw in 2013, the number of hype items in that year doubled from that in 2012. From then onwards, the hype items were more varied, ranging between 64 to 86 items, and their total instances also slowly increased throughout the years.

From all hypes that occurred during these years, *important*, *investigate*, and *reveal* were the most pervasive, as they were consistently among the top ten most frequent hypes from 2011 until 2020. The frequencies of these hype items fluctuated, but they generally showed an upward trend (Figure 1).

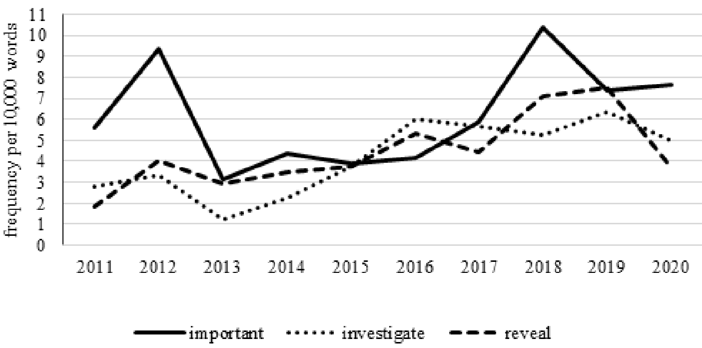

Figure 1: Overall frequencies of *important*, *investigate*, and *reveal* across the years

Other hypes that were dominant in the span of ten years included adjectives such as *interesting*, *useful*, and effective, verbs such as *discover*, *enhance*, and *contribute*, and adverbs such as *successfully*, *most*, *always*, and *very*. These words were among the ten most frequent hypes used in the undergraduate thesis abstracts, even though their frequencies varied over the years.

4.3 Values promoted by hypes in undergraduate thesis abstracts

To identify the values that were promoted by hypes, we referred to the broad categories of value from Hyland and Jiang (2021b). We found the four values existed in the corpus: certainty, contribution, novelty, and potential. In addition to these values, we found that the writers used hypes to promote urgency.

First, certainty was identified from words such as *important*, *crucial*, and *necessary*, which appealed to the significance of the idea being proposed in the theses. Hypes were found in the statements such as (15, 16), where the proposed learning strategies, media, and techniques were hyped to assert their prominence.

(15) *Questioning is one of the* ***most crucial*** *strategies in the teaching of reading.* (11VER)

(16) *For the smoothness of CTL program, the role of workbook is* ***very important*** *because in teaching and learning activities* ***certainly*** *teachers require a workbook.* (12EDI)

The student-writers' certainty was also reflected in their suggestions for future research, which were hyped using adverbs such as *highly* and *strongly*, as shown in the following examples.

(17) *Therefore, it is* ***highly*** *suggested for future research to be done using people there as research subjects.* (13DAN)

(18) *It is also* ***strongly*** *suggested for further researchers on children volume book using other focus.* (14USW)

Theoretical and practical contribution of the research were hyped through adverbs such as *hugely* and *a lot* (19) and adjectives such as *positive*, *useful*, and *effective* (20). Contribution is mostly found in the theses from English language education domain, where hypes functioned to emphasize that the proposed learning method, strategy, or media resulted in a positive change to the teaching and learning process.

(19) *The students stated that they have **a lot** of fun when they were in the class of teaching of listening using this media.* (13FAJ)

(20) *It can be concluded that STAD is an **effective** method to be implemented in teaching writing a recount text.* (17HAF)

Novelty stresses newness in either the research topic or findings. Novelty was identified from adjectives (e.g. *new*, *novel*, *unique*) and determiners (e.g. *few*, *little*). Using these hypes, the writers claimed that their research topic was rarely studied, which distinguished their work from the previous ones (21), and that their findings gave some sort of newness to the existing body of knowledge (22).

(21) *Despite the **ample** studies focused on first person pronouns as author self-representation, this study is **distinct** in that it discloses some empirics regarding the use of author non-pronoun self-references which **stands out** as the most prevalent author self-references in EFL students' academic texts.* (13LEL)

(22) *It is also **worth** pointing that the remaining social motives are **new** findings in this study.* (12ANN)

In few cases, the writers used words such as *no*, *not*, and *never* to show novelty. In these cases, hypes emphasized that there had never been any similar research before, giving the impression of being the first one to conduct the study.

(23) *To the best of my knowledge, there is **no** research yet on LOLcat published in Indonesia.* (15ANI)

(24) *Another reason why the researcher conducted this study because this study [was] **never** conducted by other students of English Department in Universitas Negeri Malang before.* (19MAM)

The fourth value that hypes promoted is potential, which could be identified from words such as *benefit*, *potential*, and *valuable*. Potential appeals to the future value of the research.

(25) *The product is expected to give **valuable** significances for the English teacher, the students, and the future researchers, in the effort of varying speaking activities in class.* (13ORI)

(26) *This study finds some **new** points which are **potential** to be explored further by future researchers.* (14NAD)

The last value targeted by hypes is urgency, which is slightly different from certainty. While certainty emphasizes the significance of the research topic or subject, urgency magnifies the problem that the research aims to address. Urgency was identified from *major*, *complex*, *never*, and *unfortunately*.

(27) *Besides, their teacher had* ***never*** *used any certain technique in teaching writing.* (16VIR)

(28) *Deprivation of morality becomes a* ***major*** *problem in* ***many*** *countries.* (16FIT)

5 Discussion

The findings from this paper show that hypes are pervasive in the undergraduate thesis abstracts by Indonesian student-writers. This supports McCarthy (2015), Hyland and Jiang (2021a, 2021b), and Millar et al. (2020), who also found a frequent use of hypes in other text types within academic genre. The prevalence of hypes in the thesis abstracts indicates the student-writers' awareness of the need to capture the attention of prospective readers such as thesis supervisors, examiners, and peers. In the cases where the theses are written with the aims to win grants and to be published, the frequent hypes found in the thesis abstracts may also indicate their attempts to promote parts of their theses to the funding bodies and journal editors. Male (2018) noted that Indonesian writers tend not to be selective in using the moves to best promote their work. However, language-wise, the student-writers' frequent uses of hypes as found in this study can be seen as a means to make their research stand out.

In the undergraduate thesis abstracts, hypes increased throughout the years. Although this study did not investigate the factors behind this frequency shift, we strongly believe that the increasing frequencies of hypes do reflect the growing expectations in thesis writing, that it is not only done to convince thesis supervisors, board of examiners, and peers, but also wider audience such as prospective funders and journal reviewers. If this is true, the aims for publishing part of theses, securing grants, or being read, accepted, and cited are probably some factors that motivate the frequency shift. The growing popularity of hypes in this genre is similar to that in other academic prose as reported in Hyland and Jiang (2021a, 2021b) and Millar et al. (2022). It is worth noting that the surge of hypes in 2012 coincides with the new regulation from The Indonesian Directorate General of Higher Education (DIKTI) about mandatory research publication for all university students. This sudden urge to publish may explain the upsurge of hypes in that year, as higher pressure and competitive nature in research funding and publishing have led writers to hype the value and significance of their work (Millar et al. 2019, Hyland & Jiang 2021b, Millar et al. 2022).

The functions of hypes in the thesis abstracts varied according to the moves that they targeted. In the introduction, which was heavily hyped, hypes highlighted the weight or severity of the problems that the writers tried to solve in the theses, thus, promoting relevance and urgency, which is similar to Millar et al.'s (2022) findings. By hyping this value, the student-writers can show their awareness of the existing problems and align their work so as to solve them.

Second, hypes in the undergraduate thesis abstracts were used to accentuate novelty by describing the theses as unique, distinct, or new. This is similar to the findings in Hyland and Jiang (2021b) and Millar et al. (2022). Hyping the novelty of theses can help the student-writers gain readership, convince and persuade thesis advisors and examiners. However, there were also several overtly promotional claims (e.g. *there is no research yet*, *this study was never conducted by other students*) made without any immediate justification. As argued by Intemann (2022), exaggeration in hypes can be overly pessimistic, that is, it overstates uncertainties or unknowns related to research. Such exaggerated claims can give the impression of being the first one to conduct the study, but they may potentially lead to the loss of readers' trust, especially when they are not sufficiently backed up by evidence and justification.

Third, particularly in the theses from the education domain, hypes accentuate a sense of innovation by emphasizing the effectivity and benefits of the learning product that was proposed in the theses, such as strategies, media, method, materials, and techniques. It is generally known that most funding bodies always look for research that has the potential to solve a real-world problem. The students may be compelled to show how the output of their research is able to address the existing problems in language teaching and learning, as this value is commonly sought for in grant applications. In addition, hyping these products may also be seen as an effort to conform to the journal writing guidelines, which often require authors to explicitly state the significance and contribution of their work.

Throughout the years, *important*, *reveal*, and *investigate* were always among the top ten most frequent hype words. One possible explanation for the high frequencies of these words is the influence of academic writing skills teaching at Indonesian universities, such as workshops and academic writing centres. This type of teaching may promote a relatively formulaic, routinized use of linguistic resources, which can reduce the variety of diction. The growing frequencies of these words indicate broader trends in academic writing conventions where writers may be influenced by the expectations to convey the importance of their work and display investigative nature of the research procedure. *Important* points out to the growing emphasis on research significance. This finding is similar to that in Millar et al. (2019) where writers seemed to gravitate towards certain word families such as *important*, *importance*, and *importantly*. Writers may feel compelled to use this word to convey that their work addresses essential aspects of language education and offers valuable insights to the field. This way, they can communicate the values of the research within the existing academic discourse. *Reveal* highlights findings and creates theatrical effect (Wheatley 2014) by conveying a sense of discovery and novelty. It conveys a presentation of previously unknown or hidden insights and evokes curiosity in the readers. Using this word, the student-writers hint that the information presented in their theses is not just a simple discovery, but rather a note-worthy and impactful revelation. According to Wheatley (2014: 14), using *reveal* instead of less emotive words such as *find*, *show*, or *give* implies the process of "uncovering something 'before your very eyes' in a dramatic way". Lastly, the growing trend of *investigate* may indicate a greater emphasis on research inquiry and empirical approach. It also shows the emphasis on exploring and examining aspects of linguistics, literature, or language teaching in a systematic manner. It is not as dramatic in the same way as *reveal*, as *investigate* implies a systematic examination of the research questions, the writers' intention to explore, analyse, and collect evidence to answer the research questions, and suggests an in-depth examination and methodological rigour.

6 Conclusion

In the undergraduate thesis abstracts written by Indonesian English learners over the years, hypes are pervasive in all five moves of abstracts. In this genre, hypes were used to capture the attention of targeted readers such as thesis supervisors, examiners, peers, as well as funding bodies and journal reviewers, and add visibility of the theses by conveying certainty, novelty, urgency, contribution, and potential of the research. The growing popularity of hypes in the thesis abstracts during the span of ten years suggests the student-writers' awareness of the need and the competition to succeed academic pursuits. It also shows an increasing effort to make their theses stand out in today's highly competitive academic landscape. As a whole, these findings suggests that academic discourse is evolving to accommodate promotional elements.

It is therefore important to raise the issue of hypes during thesis supervision as well as in academic writing courses, especially where students are expected to write papers for publication. In such writing courses, identifying hype words in various types of academic publication and discussing their effectiveness in the context of successful thesis writing and exams, winning grants, and gaining publication are useful as they may help students achieve effective academic persuasion and improve the readability of their theses. Writing instructions and the thesis supervising process should guide students in striking the right balance in the use of promotional language to achieve clarity and conciseness, and to avoid overhyping and exaggerating of parts of their theses. In order to raise students' awareness of the roles of hypes in academic writing, discussions about the functions and potential pitfalls of using such promotional language in theses, journal articles, and grant proposals are needed.

Lastly, it is also important for gatekeeping in academic publication to carry out rigorous supervising or review processes that critically assess the content and language of submissions. Those who take part in the gatekeeping process should be encouraged to critically evaluate the context and meaning behind hype words before accepting them at face value, as this is important to maintain academic rigor and factual accuracy.

Appendix

List of hype words (in the alphabetical order)

1	a lot	81	emphasize	161	intuitive	241	revolutionary
2	absolutely	82	empirical	162	invaluable	242	rich
3	accessible	83	encouraging	163	inventive	243	rigid
4	accurate	84	enhance	164	investigate	244	rigorous
5	actionable	85	enormous	165	it is important to	245	robust
6	adequate	86	ensure	166	it is not hard to see	246	robustness
7	advanced	87	entire	167	key	247	role
8	advantage	88	entirely	168	largest	248	safer
9	agree	89	especially	169	latest	249	salient
10	alarming	90	essential	170	life saver	250	scalable
11	all	91	essential	171	logical	251	scale
12	always	92	establish	172	longstanding	252	scientific
13	amazing	93	ever	173	main	253	seamless
14	ambitious	94	evident	174	major	254	senior
15	ample	95	exactly	175	markedly	255	sharply
16	apparent	96	excellent	176	marvel	256	significant
17	appropriate	97	exceptional	177	massive	257	skilled
18	assuring	98	exciting	178	maximize	258	sophisticated
19	astonishing	99	exhaustive	179	meaningful	259	specialized
20	attractive	100	exhibited	180	miracle	260	spectacular
21	benefit	101	expansive	181	most	261	stark
22	best	102	experienced	182	motivated	262	stellar
23	biggest	103	expert	183	much	263	strategic
24	breakthrough	104	expose	184	multidisciplinary	264	strength

25 bright
26 broad
27 careful
28 central
29 century
30 certain
31 certified
32 challenge
33 clear
34 clearly
35 close
36 cohesive
37 collegial
38 compatible
39 compelling
40 complete
41 completely
42 complex
43 comprehensive
44 confident
45 considerable
46 constant
47 contribute
48 contribute
49 contribution
50 convincing
51 core
52 creative
53 critical
54 crucial
55 cure
56 daunting
57 dedicated
58 deeper
59 definitely
60 demonstrate
61 deployable
62 desire
63 desperate
64 detailed
65 devastating
105 extensive
106 extraordinary
107 extremely
108 facilitate
109 far-reaching
110 fascinating
111 fastest
112 favourable
113 few
114 fill the gap
115 final
116 finite
117 first
118 for the first time
119 fortunately
120 foundational
121 fully
122 fundamental
123 game changer
124 general
125 generalizable
126 great
127 greatest
128 greatly
129 green
130 ground-breaking
131 high
132 highlight
133 highly
134 home run
135 hopeful
136 hopefully
137 huge
138 ideal
139 immediate
140 immense
141 impactful
142 imperative
143 importance
144 important
145 in the search for
185 myriad
186 myriad
187 necessary
188 never
189 new
190 no
191 notable
192 notably
193 noteworthy
194 novel
195 nuanced
196 numerous
197 obvious
198 obviously
199 original
200 our
201 outstanding
202 overwhelming
203 paramount
204 particularly
205 perfectly
206 perform
207 phenomenal
208 pivotal
209 play a … role
210 positive
211 potential
212 powerful
213 practice
214 precise
215 prefer
216 premier
217 present
218 prestigious
219 primary
220 principal
221 priority
222 produce
223 productive
224 professional
225 prominent
265 strengthen
266 strikingly
267 strong
268 strongly
269 substantial
270 successful
271 successfully
272 such a
273 superior
274 supportive
275 surely
276 surprising
277 surprisingly
278 sustainable
279 sustainable
280 synergistic
281 systematic
282 tailored
283 talented
284 tangible
285 the authors
286 the importance of
287 timely
288 to shed some light
289 too
290 top
291 totally
292 trained
293 transdisciplinary
294 transform
295 transformative
296 tremendous
297 trend
298 ultimate
299 unanswered
300 undoubtedly
301 unearth
302 unexpected
303 unexpectedly
304 unfortunately
305 unique

66	dire	146	incredible	226	promising	306	unmet
67	dismal	147	indeed	227	promising	307	unprecedented
68	distinct	148	indispensable	228	qualified	308	unveil
69	diverse	149	initial	229	quality	309	urgent
70	dramatically	150	innovate	230	quality	310	useful
71	drastic	151	innovative	231	radical	311	user-friendly
72	durable	152	inspiring	232	ready	312	valid
73	dynamic	153	intellectual	233	reassuring	313	value
74	easy	154	intense	234	relevant	314	vast
75	effect	155	interdisciplinary	235	remarkable	315	very
76	effective	156	interesting	236	remarkably	316	vibrant
77	efficacious	157	interestingly	237	renowned	317	vital
78	efficient	158	international	238	reproducible	318	we
79	elusive	159	interprofessional	239	reveal	319	without question
80	emerging	160	intriguing	240	revolution	320	worth

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RHETORICAL STRUCTURAL PATTERNS OF POSTGRADUATE THESES ABSTRACTS OF RELATED DISCIPLINES: A GENRE STUDY

Kingsley Cyril Mintah

Abstract

The study of research abstracts has gained significant scholarly attention as part of genre studies due to the communicative importance of abstracts in constructing academic knowledge. This study contributes to the discussion by examining the structural organization and lexico-grammatical features of ninety (90) postgraduate theses abstracts in the disciplines of English Language studies, Literature studies, and Linguistics studies (Ghanaian Languages). The abstracts were purposively sampled from the graduate theses of departments of the School of Languages, the University of Ghana. The data was analyzed using Hyland's (2000) genre model of research abstracts. The findings reveal that abstracts of English Language studies and Linguistics studies (Ghanaian Languages) are often informative while Literature studies abstracts are more indicative and possess distinct structuring of the moves. The Purpose move (M2) remains obligatory and the Conclusion move (M5) is optional across the disciplines. Also, some lexico-grammatical features in the linguistic choices of scholars in the three disciplines point to evidential differences that mark informative abstracts as varying from indicative abstracts. The study concludes that identifying the discipline-specific function of the abstracts may be the best means to account for variations in abstracts of varying disciplines and calls for the deliberate enculturation of academics into discipline-oriented research writing skills to improve the presentation of research ideas in abstracts.

Keywords

abstracts, theses, genre, rhetorical moves, language study

1 Introduction

The mastery of academic discourses is essential for acceptance into academic communities and academic progression for scholars. Hence, there continues to be orientation, reproduction, and refining of the nature and the essentials of academic discourses to young scholars. Academic discourses can be construed as ways of thinking and using language in response to the dictates of academic institutions and the academy (cf. Hyland 2011, Khoutyz 2022). This may be reflected in social activities like educating students, demonstrating learning, disseminating ideas, and constructing knowledge (Hyland 2011). The term *academic discourse* has often been equated to academic language or the language of schooling which usually is a structural, system-based perspective of language;

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however, the extension of the meaning of academic discourse to practices related to “the actual language users, their communicative tasks in particular social and institutional contexts, and the pre-patterned solutions to these tasks as part of a community’s stock of knowledge” (Heller & Morek 2015: 181) better captures the importance of academic discourses. In essence, academic discourse is embedded with institutional and institutionalized rules of academic communities but not free from personal knowledge constructed over some time. The thesis forms an important form of academic text that employs academic language and manifests several competencies of academic discourses. The thesis is a carefully constructed body of knowledge and information that presents a comprehensive thought on a particular topic of a discipline. In this highly competitive academic world, the thesis is an essential document that marks excellence in knowledge construction and is an important requirement for the completion of a graduate program. Compared to research articles, the thesis receives lesser scholarly attention as an academic discourse in the area of genre studies (cf. Bunton 2005, El-Dakhs 2018) and this may be so due to its volume. However, the few research works that have investigated this area of scholarship have produced significant insights. For instance, Bunton (2005), who studied the Conclusion chapters of PhD theses, argues that the generic structure of the Conclusion section of theses is significantly different from that of research article abstracts and that concluding chapters in theses may show disciplinary-motivated variations in length, structure and emphasis. The Results-Discussion chapters of postgraduate theses have also been found to consistently include Introducing the results and Reporting results moves across disciplines while variations may exist with Summarizing results and Commenting on results moves (Nguyen & Pramoolsook 2016). Although the rhetorical structuring of the Introductions of theses is organized from general information to specific information like research articles (Swales 2004), they may show variations and be presented as from a specific to a general flow of ideas and end with more specific information of the research work (Wasima & Abbas 2015) due to the length of theses.

The abstracts of theses are very important sections that often serve as a preview to the dissertation. They may mirror entirely how the dissertation is structured and also clarify some key concepts (Tibbo 1993). These features often make their information dense and structurally complex. They must be coherent syntactically and semantically (Pinto & Lancaster 1999). Given this, abstracts ought to be well-written and structured as their poor constructions have a direct impact on the understanding and recall of the argument of the dissertation. This research intends to highlight these important properties of the abstracts in postgraduate theses that have not received as much scholarly attention as those of research articles. Moreover, the few scholarly works on theses abstracts in literature or applied linguistics have argued the existence of variations in their structuring, and/or re-invention of rhetorical moves to suit writers' interests (Ebadi et al. 2019). The present research, therefore, probes these observations in the case of related disciplines in the area of language study. Essentially, it seeks to examine the move structures and some lexico-grammatical features employed in postgraduate theses in the related disciplines of English Language (EL) study, Literature (LI) study, and Linguistics studies in Ghanaian Languages (LGL) to determine their similarity and variations, and their conformity or otherwise to established structures of theses abstract writing.

2 Literature review

Research abstracts are essential components of theses and research articles (RAs) because they help readers decide the relevance of a piece of research, and are instrumental in understanding the argument of research work. Their specific role is to summarize and present an overview of a theses or a research article. Lorés (2004: 281) considers an abstract as "an abbreviated, accurate representation of the contents of a document, preferably prepared by its author(s) for publication with it". They often provide language preparation for text through keywords, and they function as current awareness tools (Cross & Oppenheim 2006: 429).

Abstracts can be classified into three kinds based on their functions: informative, indicative, or informative-indicative. The informative abstract informs readers about the entire research paper by capturing the paper in a miniature form (Lorés 2004). Such abstracts characteristically present, systematically, exactly what is found in a research article (Piqué-Noguera 2012). Informative abstracts perform two essential functions: assessment of the research paper, and substitute for the research paper when cursory knowledge is needed (Cross & Oppenheim 2006). The indicative abstract, on the other hand, essentially allows readers to understand the scope and nature of a research work by indicating the subject and main argument of a research article (Lorés 2004). The indicative abstract often presents only a background and a purpose, but either the methodology, the results, or both, are normally omitted (cf. Cross & Oppenheim 2006, Piqué-Noguera 2012). The last type of abstract is the informative-indicative abstract whose function is to perform both the role to inform scholars of the entire research paper and also to indicate scholarship positions argued in the paper. These kinds of abstracts may be more detailed and are often lengthy as they seek to provide a comprehensive scholarly account of the structure and arguments of a research paper. These classifications suggest that the structuring of abstracts is strongly linked with the function abstracts perform. This raises scholarly questions about the generic nature of abstracts as genre studies posit that some identifiable moves and structures define a text.

The studies of abstracts as genres have, therefore, often focused on the nature of abstracts across languages, across disciplines, and within disciplines. The study of abstracts across two or more languages has sought to understand the influence of the choice of language on the structuring and/or rhetorical features of abstracts and to underscore the existence or otherwise of variations in the conventional structuring of abstracts resulting from the different linguistic rules of languages (cf. Van Bonn & Swales 2007, Bouziane & Metkal 2020). Martín Martín (2003) highlights that though there are relative similarities in the structuring of abstracts of different languages, the rhetorical moves applied to scientific discourse abstracts are not universal. The point of departure may exist in the introduction section and the results sections which Martín Martín (2003) attributes to sociocultural factors of the discourse community. Accordingly, variations in language do not affect the general structuring although variations in linguistic features may exist (Van Bonn & Swales 2007). Furthermore, the variations in abstracts of writers of different language orientations have been attributed to socio-cultural differences in the ecology of the languages (Marefat & Mohammadzadeh 2013). Some sociocultural factors that bear some relevance to the language of the abstract include the nativeness or non-nativeness of the writers of the abstract in a specific language (Al-Khasawneh 2017).

Studies into abstracts of the same discipline suggest that the likelihood of differences in the structuring of moves and linguistic features of the abstracts is very minimal (Alyousef 2021, Bonsu & Afful 2022). Abstracts of the same discipline do not only share a similar organization of moves but may be characterized by a cluster of linguistic features that frequently co-exist (Kanoksilapatham 2013). Thus, the structuring of moves of abstracts of related disciplines often follows a linear order (Bonsu & Afful 2022) and the occurrence of differences have been associated with the culture or origins of the writers (Vathanalaoha & Tangkiengsirisin 2018). Vathanalaoha and Tangkiengsirisin (2018) argue that the few differences that occur in such abstracts can be assigned to writers' different nationalities and differences in their socialization practices of the discipline. These few differences do not often occur with the presentation of the move structures but with the linguistic elements.

Abstracts of unrelated disciplines have often been probed to understand the influence of disciplines on abstract features. The goal has been the identification of similarities and differences in the rhetorical structuring of abstracts that reflect disciplinary peculiarities or otherwise. Pho (2008) suggests that three moves (presenting the research, summarizing the findings, and describing the methodology) are general in almost all the abstracts of all disciplines; however, what distinguishes a particular discipline's abstract from another is the combination of certain linguistic resources like the grammatical subjects, verb tense and voice. Ghanzanfari et al. (2016) and Galaidin (2021) confirm that although the move preferences may be similar, minimal differences that may exist in the use of discipline-related jargon. Other scholars (cf. Behnam 2014, Ebrahimi 2015), however, identify the presence of notable differences in the cross-disciplinary comparison of abstracts and point to the textual structure of the abstracts as the area of key differences which they ascribe to the academic discourse community and culture, especially among non-native writers. Also, some differences may be found in the expression of authority or self-mention, and the optional steps of the abstracts like the Introductions and the Conclusions (Ebrahimi 2015).

Generally, many scholars seem to associate the differences in linguistic features with the discourse communities' practices of the disciplines. It is intriguing, therefore, to understand how much of the differences will exist with abstracts of related disciplines with authors of similar origins and similar academic socialization in a more formal academic discourse like postgraduate theses abstracts, as this research seeks to highlight.

3 Method

3.1 Source of data

Postgraduate theses abstracts of two departments of the School of Languages at the University of Ghana form the corpus of this paper – specifically, the Department of English and the Department of Linguistics. The theses were selected because they indicate a higher level of research work and are supposed to reflect a greater conceptual understanding of academic discourses. A total of ninety (90) abstracts were purposefully selected for the study and they comprised thirty (30) from each of the disciplines involved: Literature studies (LI), English Language studies (EL), and Linguistics studies in Ghanaian Languages (LGL). Each group was made up of fifteen (15) Master's theses abstracts (MPhil) and fifteen (15) PhD theses abstracts to enable the generalization of findings as reflecting the practices of postgraduate scholars in the disciplines. All the writers of the theses were Ghanaians and can be regarded as having mastery over the use of the English language as English is the language of education, business, and social engagements in the country.

3.2 Analytical framework

The study employed Hyland's (2000) model of abstracts as the framework for analysis. Hyland's model identifies that abstracts are made of five functional moves which include Introduction (M1), Purpose (M2), Method (M3), Product (M4), and Conclusion (M5). This model is significant because it distinguishes the writer's purpose from the Introduction move arguing that an abstract's Purpose is distinct from its Introduction because the Purpose presents a justification or the exact aims of the research while the Introduction presents the background or context of the research. Hyland (2000) also employs the term *Product* instead of *Result* in the model to capture the fact that some abstracts may not necessarily present empirical results but rather present arguments that are also as significant as the results. Table 1 below presents a summary of Hyland's (2000) five-move model of abstracts.

Move	Description
Introduction	Establishes the context of the paper and motivates the research or discussion
Purpose	Indicates purpose, thesis, or hypothesis, outlines the intention behind the paper
Method	Provides information on design, procedures, assumptions, approach, data, etc.
Product	States the main findings or results, the argument, or what was accomplished
Conclusion	Interprets or extends results beyond the scope of the paper, draws inferences, points to applications or wider implications

Table 1: Moves structure of abstracts (Hyland 2000: 67)

The analysis of the moves concentrated on identifying the moves, determining the frequency of the moves, and establishing the sequencing of the moves. The study adopted the cognitive-semantic boundary criterion, as espoused by Afful and Gyasi (2020), to identify the moves in the abstracts. The frequency of a move determines the importance that is placed on the move. Hüttner's (2010) guidelines for determining the status of moves were used to determine the status of a move to the abstracts. By this criterion, a move was considered obligatory, core, ambiguous, or optional. The classification based on their observed frequency is presented in Table 2 below.

Percentage of occurrence	Status
90% - 100%	Obligatory
50% - 89%	Core
30% - 49%	Ambiguous
1% - 29%	Optional

Table 2: Hüttner's (2010) model of determining the status of moves

The study further explores the linguistic resources that are employed in the abstracts to achieve the communicative purposes of the writers. Of particular importance to this research were the lexico-grammatical features of sentence patterns, textual space, and authorial presence.

3.3 Data analysis

The study used a mixed method in the data analysis. This consisted of an analysis of the frequency of moves and some linguistic observations of the identified moves. Each of the selected abstracts was coded after the discipline for ease of reference. For example, LI abstracts were coded as MLit and PLit for Masters and PhD abstracts respectively; EL abstracts, as MLang and PLang for Masters and PhD abstracts respectively; and LGL abstracts, as MLing and PLing for Masters and PhD abstracts respectively. The moves identified were tagged as M1 for Introduction, M2 for Purpose, M3 for Method, M4 for Product, and M5 for Conclusion following the consecutive occurrence of the moves as stipulated by Hyland (2000). The analysis of the grammatical features followed an examination of the sentence patterns, textual space and authorial presence that occurred in the abstracts.

4 Results and discussion

4.1 Frequency of moves

This section provides an account of the frequency of moves, based on Hyland's (2000) model, which was observed in the data. All 90 abstracts included in the corpus were examined. The results of the frequency of the occurrence of the moves in the abstracts of the disciplines are presented in Table 3 below.

Moves	ELanguage	Literature	LinguisticsGL
M1	17 (56.7%)	27 (90.0%)	16 (53.3%)
M2	30 (100.0%)	30 (100.0%)	28 (93.3%)
M3	28 (93.3%)	23 (76.7%)	27 (90.0%)
M4	28 (93.3%)	20 (66.7%)	28 (93.3%)
M5	5 (16.7%)	3 (10.0%)	3 (10.0%)

Table 3: Frequency of moves in the abstracts

The findings in Table 3 indicate that there exist some variations and similarities in the preference of moves in the three related disciplines. Across the disciplines, the study revealed that the Purpose move (Move 2) is the most frequent. El-Dakhs (2018) has suggested that the Product move was the most important in theses abstracts, especially PhD theses abstracts; however, the observation made in this study contradicts that claim. The findings assert the position that the Purpose move is the most important and recurring move of postgraduate theses abstracts considering its importance in communicating the goal of the research in abstracts (Zand-Moghadam & Meihami 2016). What constitutes the second and third frequent moves in the abstracts varies according to the disciplines. EL and LGL abstracts have the Method (M3) and Product (M4) moves as the next frequent moves. However, the LI abstracts have the Introduction (M1) and Product (M4) moves as the next frequent moves. Earlier studies like Ren and Li's (2011) study of Master's theses of non-native users of English and El-Dakhs' (2018) study of PhD theses among native users of English, both confirmed M3 and M4 as part of the obligatory moves of postgraduate theses abstracts. The findings of this study, however, vary from such position because LI abstracts placed more emphasis on the Introduction move (M1). Indeed, Marefat and Mohammadzadeh (2013) observe that the Introduction move is indispensable in LI abstracts. It seems, therefore, that the variation is discipline-motivated. This is demonstrated in Table 4 below.

Moves	**ELanguage**	**Literature**	**LinguisticsGL**
M1	Core	Obligatory	Core
M2	Obligatory	Obligatory	Obligatory
M3	Obligatory	Core	Obligatory
M4	Obligatory	Core	Obligatory
M5	Optional	Optional	Optional

Table 4: Status of moves in the abstracts of various disciplines

The findings in Table 4 indicate that the preferences of the moves in the abstracts of LGL and EL studies are more akin. They both have M2, M3, and M4 as obligatory moves, M1 as a core move, and M5 as optional. This finding tells that EL and LGL scholars are more concerned about informing readers of their research work rather than drawing implications of their findings and also relating their works to establish background knowledge. This marks these abstracts as more informative. LI abstracts, on the contrary, have M1 and M2 as obligatory moves, M3 and M4 as core moves, and M5 as optional. They can be described as more indicative as they place more emphasis on the background and purpose of the arguments. These observations suggest that many differences exist in the structuring of the rhetorical moves of abstracts of even related disciplines.

4.2 Presentation of moves

Move 1 - Introduction

Swales (1990) posits that this move is used to make topic generalizations, reference or review previous research, or claim the centrality of the topic. The move is considered essential for abstracts because it provides the background of the research or establishes its context (Hyland 2000). The Introduction move has, however, been considered by some scholars as non-essential in abstracts. Indeed, Sidek et al. (2016: 29) argue that "providing the background of the study in the abstract is not necessary for readers to get the essence of their studies". These varying positions seem to explain the variations in the use of this move in the abstracts observed.

The Introduction move is a core move but not obligatory in EL and LGL, 56.7 per cent and 53.3 per cent respectively. The disciplines seem to take the position of Sidek et al. (2016) regarding the move as not defining the essence of the study. The move was used in these disciplines to allude to previous studies without citing any specific authority or topic generalizations. See Examples (1) and (2):

(1) *Studies on Ghanaian English pronunciation had generally used language groups from only Southern Ghana, concentrated on the linguistic variation with little or no regard to the social environment of participants involved, and used auditory analysis only.* [PLang5]

(2) *A noun phrase is a phrase that behaves like a noun. The head of a noun phrase is technically the noun. In grammar, a noun phrase functions as subject and as object. The noun phrase is found in the grammar of all languages.* [MLing4]

Abstracts of LI studies made great use of the Introduction move (90.0%). The Introduction move in the abstracts was more inclined towards referencing previous studies with citations and making topic generalizations. These contextualized the arguments of the abstracts and captured the reader's attention, for example:

(3) *Highlife has several elements, poetry being one of these. Often musician displays highly imaginative and skillful manipulation of language. Unfortunately, most studies have emphasized only the socio-political and socio-cultural values to the neglect of the literary. Earlier scholars such as Bame (1981, 1991), Sutherland (1960) and others have restricted their study to sociological aspect by examining the content of the songs and not their stylistic features.* [PLit6]

As observed in Example (3), the author uses a combination of topic generalizations and references to previous research. This combination strengthens the persuasiveness of the Introduction move in LI abstracts and also displays the authors' familiarity with the relevant literature on the topic to demonstrate their disciplinary competence.

Move 2 - Purpose

The Purpose is often an obligatory component of theses abstracts (El-Dakhs 2018, Suwarni et al. 2021). This assertion is confirmed by this research as it is the most frequent move of all the disciplines' abstracts. According to Hyland (2000), the Purpose outlines the intention of the research by stating the aim or what the research intends to accomplish. The data revealed that in EL abstracts, the move is more likely to explicitly indicate the exact purpose of the work (21 times) than what the research does (5 times). Some abstracts may realize a combination of both functions, as in Example (4):

(4) *The general aim of the study is to describe the request forms used by speakers of English in Ghana.* [PLang6]

In LI and LGL abstracts, the move is more often used to indicate what the research does, than to explicitly state the purpose of the work. Other abstracts combined both functions.

(5) *This study explores fundamental relationship existing in the works of two great American scholars of the 19th century: Walt Whitman and Ralph Waldo Emerson.* [MLit10]

(6) *The study explores challenges teachers face in implementing the language-in education policy.* [PLing14]

Marefat and Mohammadzadeh (2013) argued that the Purpose move is rarely used in LI research article abstracts because it is less frequent than the Introduction and Method moves. This study, however, points out that this claim is not the same for LI theses abstracts as the move is rather predominant in the abstracts.

Move 3 - Method

This move presents information on the research design, procedures, assumption, approach, and data, among others that were used for the research (Hyland 2000: 67). This is often one of the obligatory moves of postgraduate theses abstracts (Zand-Moghadam & Meihami 2016, El-Dakhs 2018). The

Method move is essential to grasp the thrust of research abstracts (Pho 2008). Sidek et al. (2016: 29) claim that abstracts without the Method move are obscure because the move indexes the legitimacy of the findings of the research and its absence questions the findings presented in the abstract. It is no surprise, therefore, that this move has often been obligatory for many research abstracts although some researchers (Gil 2020) have found it otherwise.

This study found the Method move to be obligatory for EL and LGL abstracts. The move was often presented as information about the data, theory/assumption, procedure, and/or research design:

(7) *The study employed a mixed method approach in examining political editorials of four newspapers (Daily Graphic, Ghanaian Times, Daily Guide, and The Chronicle) selected through a purposive sampling procedure. To confirm the statistical relevance of the distributions, the research conducted Chi square texts at Pearson's critical value of 0.05.* [PLang4]

(8) *Data were selected using questionnaires from 1444 senior high school (2 & 3) students, carefully selected from 75 public schools in Eastern Region. This was complemented by data from interviews held with teachers, headmasters/ mistresses and Ghana Education Services (GES) senior employees. Data analysis took place on two stages. In the first stage, we examine the population scores of the responses of individual respondents for each statement. In the second stage, we carry out a variance analysis to examine the relationship between different variables.* [PLing11]

The LI abstracts had the Method move as a core move and was omitted in some of the abstracts. In the instance of its occurrence, the move was used to present the theory or assumption that guided the arguments of the study. The data and/or research design were scarcely mentioned, for example:

(9) *Adopting the counter-discursive and autocritical paradigms of postcolonialism as major theoretical framework, the thesis justifies this argument by conducting an in-depth analysis of selected poems from Kofi Anyidoho's last three poetry collections (AncestralLogic & CarribbeanBlues, PraiseSong for TheLand, and The Pace We Call Home and Other Poems) and Ama Ata Aidoo's After the Ceremonies in the light of the concept of dismemberment and the remembering of Africa as propounded by Ngugi wa Thiongo'o and Ayi Kwei Armah.* [MLit9]

Move 4 - Product

The function of the Product move is to state the main findings, the results, the argument, or what was accomplished. The Product move occurs in all research abstracts to promote research works to a discourse community. Hence, the move is often reported as an obligatory move of abstracts (cf. Alyousef 2021, Suwarni et al 2021). This research, however, indicates that this move is not always obligatory, especially for LI studies.

(10) *Resistance of the dehumanizing effect of racism includes caring for one another, for children and for black men in ways that keep them from despair. These women writers define themselves, their people and their children in new ways, teaching them about survival and reclaiming an African heritage that permits them to develop a sense of community through extended family knitting.* [MLit2]

(11) *The study discovers that in disyllabic words, there is preference of trochaic syllable over iambic syllable, acquisition of onset is easier than acquisition of codas and finally explicit teaching is very effective in classroom.* [PLing4]

Importantly, the study found LI abstracts to present arguments as the Product, as seen in Example (10) above. Many of the researchers showed an awareness of the importance of reporting the output of their study in their abstracts.

Move 5 - Conclusion

Hyland (2000) suggests that the Conclusion move exists to interpret the results, draw inferences, and point out the applications of the findings to the wider discourse community. The study found the move to be the least preferred, and therefore, it is optional. This confirms earlier findings by Ren and Li (2011), who considered the move to be optional in theses abstracts. Indeed, Marefat and Mohammadzadeh (2013), and Suwarni et al. (2021) assert that the Conclusion is frequently optional in the disciplines of LI and LGL, respectively. This study suggests that the disciplines EL, LI, and LGL have less relevance to the Conclusion move in research abstracts despite the move's important functions.

(12) *In this sense, the conclusion drawn in this study is that, as African story-tellers telling an African story, the representative Ghanaian writers have contributed to the development of a national literature in which slavery is a major theme.* [PLit3]

A frequent error that was realized in the data was the use of significance of study, or summary of chapters as a pseudo-performer of the Conclusion move. This was not surprising as earlier research works (Alyousef 2021) have mentioned the existence of such possibilities and consider this feature as usual with postgraduate theses abstracts (Ren & Li 2011). In this study, such errors are considered a demonstration of the authors' lack of awareness of the function of the move.

4.3 Sequencing of moves

The use of a well-patterned move structure in abstracts is essential to communicating a goal-directed communicative purpose. An improper ordering of the moves in abstracts obstructs comprehension of the abstract's communicative purpose. Cross and Oppenheim (2006) agree that conceptual scattering of moves reveals writers' inability to structure units of meanings in text and impedes reading comprehension. It was, therefore, expected that most of the authors, being postgraduate scholars, would organize their abstracts following the sequential ordering of the moves. As observed in the data, there were variations in the patterning of the moves. This is indicated in Table 5 below.

	Moves	*ELanguage*	*Literature*	*LinguisticsGL*
5 Moves				
	M1-M2-M3-M4-M5	4	2	2
4 moves				
	M1-M2-M3-M4	9	10	7
	M2-M3-M4-M5	1	1	0
	M2-M1-M3-M4	3	3	0
3 Moves				
	M1-M2-M3	1	5	0
	M2-M3-M4	10	1	12
	M1-M2-M4	0	3	4
	M2-M4-M5	0	0	1
2 Moves				
	M1-M2	1	4	1
	M2-M4	1	1	3
Total		30	30	30

Table 5: Move structure patterns in the data

The findings in Table 5 contradict El-Dakh's (2018), and Zand-Moghadam and Meihami's (2016) claim that postgraduate theses abstracts mostly prefer 5-move patterns. From the table, it can be inferred that 4-move patterns are preferred in LI and EL theses abstracts, while 3-move patterns are usual in the LGL studies abstracts. The most frequent move pattern of EL and LGL abstracts is the M2-M3-M4 pattern. Bouziane and Metkal (2020) and Pho (2008) suggest that the three moves structure is a conventional pattern with abstracts written in English, and is more productive, concise, and direct in communicating information in abstracts. The LI abstracts preferred the use of the 4-move structure, particularly M1-M2-M3-M4. This variation, compared to that of LGL and EL studies, exists because of the importance of the Introduction move in the LI abstracts or because of the indicative nature of LI abstracts. Lorés (2004) suggests that the function of research abstracts as indicative, informative, or informative-indicative may account for variations in the patterning of moves of abstracts. This argument may be confirmed by the similarity in the preference for 3-move abstracts in the informative abstracts of EL studies and LGL studies and the preference for 4-move abstracts in the indicative LI abstracts.

4.4 Grammatical features

4.4.1 Sentence structure

An important grammatical feature examined in the text is the structural types of sentences used in the data. The types of sentences that are employed in a move not only underscore the communicative importance of the move but also signal the depth or simplicity of the message, meaning, or function of the move. The findings about this are presented in Table 6 below.

Sentences		Simple	Compound	Complex	Compound-Complex	Total
ELanguage	M1	10	2	23	4	39
	M2	7	1	39	6	53
	M3	16	4	43	5	68
	M4	27	3	72	15	117
	M5	2		5	1	8
		62 (21.8%)	10 (3.5%)	182 (63.9%)	31 (10.8%)	
LinguisticsGL	M1	15	3	22	6	46
	M2	22	4	29	5	60
	M3	29		27	13	69
	M4	27	4	79	34	144
	M5	2		2	2	6
		95 (29.2%)	11 (3.4%)	159 (48.9%)	60 (18.5%)	
Literature	M1	32	7	65	7	111
	M2	11		33	8	52
	M3	8		18	2	28
	M4	6	1	44	12	63
	M5			3		3
		57 (22.2%)	8 (3.1%)	163 (63.4%)	29 (11.3%)	

Table 6: Sentence structures according to moves and discipline

The findings in Table 6 indicate that the least preferred sentence structure employed in the abstracts across the disciplines is the Compound sentence. The Compound-Complex sentence also finds expression in the abstracts but is not as frequent as the Simple and Complex sentences. The Complex sentence is the most frequent structure of sentences that occur across the disciplines. Complex sentences have been considered very relevant to persuasive and argumentative texts that often call “for explicitness and elaboration in the use of language” (Frimpong 2017: 77). Considering the function of abstracts to not only attract scholarly attention to research work but also to provide detailed information concisely, usually with a restricted number of words, it is prudent that the researchers made greater use of the Complex sentences over other forms of structural sentences. However, the frequent use of Simple sentences shows the scholars’ awareness of the need to present their message in a clear, simple way to easily aid the understanding of their messages; hence, they seem to alternate the use of Complex sentences and Simple sentences in their presentation of information.

A very notable variation among the abstracts is the usage of a Simple or a Complex sentence in the moves. It is striking that LI abstracts used a significant number of Simple sentences in the Introduction (Move 1) of the abstracts. This is important as in providing the background to the study, the choice of the Simple sentence essentially makes the context and meaning easier for a reader to understand the essence of the argument that is propounded in the later parts of the abstracts.

4.4.2 Moves’ textual space

The textual space that is given to a particular move represents the move’s importance to the abstract or writer’s communicative intentions. Textual space is considered to be the amount of space accounted for by the number of words allocated to a move (Bonsu & Afful 2022). In other words, textual space can be accounted for by examining the length of each move by the words used (Alyousef 2021). In this study, an attempt was made to examine the textual space of each move. The findings are presented in Table 7 below.

Move	Move 1	Move 2	Move 3	Move 4	Move 5	Total
	Introduction	**Purpose**	**Method**	**Product**	**Conclusion**	
ELanguage	967 (11.8%)	1,790 (21.8%)	1,872 (22.8%)	3,348 (40.8%)	219 (2.8%)	8,196
Literature	2,707 (41.4%)	1,601 (24.5%)	721 (11.0%)	1,420 (21.7%)	87 (1.3%)	6,536
LinguisticsGL	1,058 (14.0%)	1,429 (18.9%)	1,484 (19.6%)	3,276 (43.3%)	326 (4.2%)	7,573
	4,732	4,820	4,077	8,044	632	

Table 7: Word count in relation to textual space

From Table 7 above, it is evident that the EL and LGL abstracts place much prominence on the Product move in the allocation of textual space. The textual space given to Move 4 accounts for 40.8 per cent of EL abstracts and 43.3 per cent of LGL abstracts. This perhaps occurs because of the importance accorded to the function of Product move in the disciplines to announce new insights (Alyousef 2021, Bonsu & Afful 2022). This affinity of the abstracts in these two disciplines extends to the next preferences of moves with more textual spaces; both EL and LGL grant more closely related textual space to the Method (22.8% and 19.6% respectively) move over the Purpose move (21.8% and 18.9% respectively) and the Introduction move (11.8% and 14.0% respectively). LI abstracts, however, place much prominence on the Introduction move (Move 1), which accounts for 41.4 per cent of the realizations. This marks LI abstracts as different from the other two compared disciplines. LI abstracts have Move 2 as the second frequent move according to the textual space allocated for it, and this is followed by Move 4 and Move 3. All the disciplines have Move 5 as the least prominent move in their abstracts.

4.4.3 Authorial presence

Authorial presence is conceptualized as discourse markers that authors utilize to project themselves and their ideas in texts (Çandarlı et al. 2015). Authors consciously employ authorial presence to create an impression about themselves and their stance in relation to their arguments (Hyland 2000). Presence is usually indexed through the use of pronouns in the texts to mark self-mentions (Ivanic & Camps 2001). According to Çandarlı et al. (2015), the use of these pronouns not only reveals the extent of writers' certainty and credibility but also serves as a means of engaging readers in a dialogue with the arguments of the text. Due to its importance as a vehicle for writers to claim ownership of their research works, authorial presence is often used in research abstracts (Bonsu & Afful 2022). This study examined the occurrence of self-mentions, and/or text, reader or scholar references with personal pronouns as forms of authorial presence in data. The finding of this is presented in the Table 8 below.

	ELanguage	Literature	LinguisticsGL
We	1	0	8
I	7	17	3
They	6	15	0
It	8	6	2
He/She	0	8	0
Total	22	46	13

Table 8: Personal pronoun frequency

The findings of this research indicate that personal pronouns are more frequent in LI than in LGL and EL studies perhaps because LI abstracts are more argumentative. Also, the data indicates that while *It* is the most occurring personal pronoun in EL abstracts, *We* is the most in LGL abstracts and *I* is the most for LI abstracts. These differences are significant as they affect both the interaction of readers with the abstracts and the presentation of the authors and their stance on the subjects. The prevalence of *We* in LGL abstracts makes the abstracts more interactive and engaging, while the *I* in LI abstracts is used to accentuate the authors' beliefs and assertiveness in their claims or arguments they propound. The use of the third-person pronouns makes direct reference to others, the study, or their claims as well as generalizations about the claims related to the topic. Notably, personal pronouns were prevalent in the Method (M3) move of the EL and LGL but LI abstracts showed a preference for the personal pronouns in the Introduction (M1) and the Purpose (M2) moves.

5 Conclusion

The study aimed to investigate the variations and similarities in the rhetorical structure and lexico-grammatical features of abstracts written in English Language studies, Literature studies, and Linguistics Studies. Generally, the findings suggest that although the three subjects belong to the related discipline of language studies, there exist variations in the nature, function, and preference of moves in the abstracts. EL and LGL abstracts are more informative in nature and function whereas LI abstracts are more indicative. Variations also existed with the grammatical features of authorial presence, textual space, and sentence structures.

These findings challenge earlier scholarship positions on abstracts of related disciplines. For example, the position that abstracts of related disciplines follow a linear order (cf. Alyousef 2021, Bonsu & Afful 2022) is refuted by this study. Again, El-Dakhs (2018), and Zand-Moghadam and Meihami (2016) claim postgraduate theses abstracts often prefer and consider the 5-move patterns as the most suitable for theses abstracts. The findings of this study, however, challenge these assertions. This raises questions about the cause of variations in abstracts. Some studies have assigned it to the status of writers as native or non-native users of language (cf. Al-Khasawneh 2017, Vathanalaoha & Tangkiengsirisin 2018), the language in which an abstract is written (Bouziane & Metkal 2020), or the genre of the abstracts (El-Dakhs 2018, Ren & Li 2011). These positions, of course, provide some substantial truths but fail to account for the similar realizations of the variations in abstracts across related and unrelated disciplines, nativity and language choice. This study holds the position that identifying the discipline-specific functions of abstracts may be the best means to account for variations in abstracts of varying disciplines. As Hyland and Jiang (2018) suggest, disciplinary orientations continue to be a significant source of influence on communicative practices in academic writing. Bunton (2005) makes a similar claim, arguing that sections of theses may show disciplinary-motivated variations which may manifest in the length, structure, and emphasis. The function of the abstract in a discipline as informative, indicative or informative-indicative certainly influences the patterning of the moves and lexico-grammatical features of abstracts as demonstrated by this study. This is because whether native or non-native, writers who belong to a particular discipline receive relatively similar discipline-motivated orientation and often show relatively similar competence in the mastery of the tenets of the discipline including the competence in the writing of theses abstracts over time (Çandarlı et al. 2015, Zand-Moghadam & Meihami 2016, Al-Khasawneh 2017). Hence, disciplines that prescribe more informative abstracts like LGL and EL in this study, will have writers produce abstracts that conform to the expected patterns of competence.

Pedagogical implications

The findings revealed that based on Hyland's (2000) model, scholars in disciplines may not frequently follow conventionally rhetorical patterns of abstracts, as also observed by Alyousef (2021). Though the realizations may not be conventional, learners' attention must be drawn to the relevance of observing discipline-defined functional moves and discourse features of theses abstracts to foster enculturation into discipline-specific research writing skills. After all, researchers must get abreast with practices related to the communicative tasks associated with a particular discipline's academic writings or texts as pre-patterned solutions to these tasks as part of the academic community's stock of knowledge (Heller & Morek 2015).

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DIGITAL DISSEMINATION PRACTICES: AN ANALYSIS OF EXPLANATORY STRATEGIES IN THE PROCESS OF RECONTEXTUALISING SPECIALISED KNOWLEDGE

Pilar Mur-Dueñas

Abstract

Researchers and scientists are increasingly encouraged by their institutions, by external organizations and by societal demands to foster the global dissemination of their knowledge production. Such dissemination is nowadays very frequently carried out online through different digital practices and texts. The current Web 2.0 and Science 2.0 context requires complex discursive practices to recontextualise and communicate specialised knowledge in a way that is accessed, understood and accepted by multiple audiences. The use of explanatory strategies has been highlighted by previous research as playing a key role in the recontextualisation of scientific findings. Such strategies can be realised verbally and non-verbally through diverse semiotic modes and affordances of the digital medium. A taxonomy of verbal explanatory strategies (elaboration, explicitation, exemplification, enumeration and comparison) and non-verbal (visual representations and spatial organisation) is presented stemming from the data-driven analysis of a sub-corpus of web-hosted practices, which is part of the SciDis Database compiled by the InterGEDI research group at Universidad de Zaragoza. In particular, the sub-corpus consists of 30 texts: 10 author-generated digital texts – from the knowledge dissemination community *The Conversation* –, and writer-mediated digital texts – 10 feature articles and 10 research digests – on circular economy and sustainability. Results show that verbal explanatory strategies are more frequent than non-verbal ones and that within the latter exemplification and explicitation are most common across all three types of digital dissemination practices. Author-generated scientific digital texts present more non-verbal explanatory strategies than writer-mediated ones – feature articles, and especially than research digests. The findings on the strategies resorted to and their realisation can be used to design tools for researchers, scientists and scriptwriters, mediators of disciplinary knowledge, who need to communicate such knowledge through digital platforms to diversified audiences.

Keywords

recontextualisation, scientific dissemination, knowledge communication, digital discourse analysis, digitally mediated communication

1 Introduction

It is no news that the Internet and technologies have greatly transformed most, if not all, professional practices. The Internet has brought about with it new, evolving and emerging discursive practices related to those professional practices. Thus, the Web has also impacted how science is conducted and

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disseminated, and in turn, scientists' discursive practices. Science 2.0 entails further collaboration and openness among scientists, taking advantage of everything the web has to offer to undertake more challenging scientific endeavours and to open and share results and advances (Shneiderman 2008, Waldrop 2008). Baykoucheva (2015) establishes a parallelism between Web 2.0 and Scholarship 2.0, which involves different ways of finding information and sources, undertaking research, and especially disseminating and circulating it. Thus, Web 2.0, Science 2.0 and Scholarship 2.0 bring with them digital practices within professional communities (Jones et al. 2015) as a result of complex professional practice (Sarangi & Candlin 2011) and diverse, intricate discursive practices for scientists and scholars requiring the construction, interpretation and use of hybrid, evolving professional genres (Bhatia 2008).

In this Scholarship 2.0 scenario, the publication of peer reviewed articles, chapters and conference papers, is of course still paramount. This "primary output" constituting certified and legitimised knowledge (Puschman 2015), upon which scientists' and scholars' credibility and reputation are largely determined. This gave way to the "publish or perish" aphorism, which has been true for quite some time. Nevertheless, this does not seem enough anymore. To this we add – in this Scholarship 2.0 environment in which we operate – the need to disseminate, circulate and transfer such output, which many times involves the use of different digital genres and practices. Indeed, scholars and scientists "must not only produce research but also place it in the right journals and get it cited, then popularize it on blogs, tweets and websites, and show it has real world impact" (Hyland 2023: 30). Hence, a renewed aphorism seems more in vogue, "publish *and market* or perish".

This paper focuses on such digital dissemination, circulation and transfer of specialised knowledge. It is the aim of this study to look into an important phenomenon when expert knowledge is communicated digitally beyond community insiders, that of recontextualisation. The digital medium entails that scientific communication can reach diversified audiences, from peers and experts in the field, to the general public. Recontextualising specialised knowledge for the digital medium involves identifying and selecting key information, as well as reshaping it through the use of varied semiotic resources and taking advantage of online affordances. In particular, the extent of use and realisation of explanatory strategies is analysed in a corpus of digital disseminating practices on the topics of circular economy and sustainability, including author-generated texts taken from *The Conversation* platform and scientific digital texts by knowledge communicators, in particular feature articles and research digests.

The rest of the paper is divided as follows. First, the theoretical framework focuses on key aspects and affordances of the digital medium which can have a bearing on the phenomenon of recontextualisation in general and of explanatory strategies in particular. Section 3 will present the corpus on which the study rests, and which has been taken from the SciDis Database compiled by the InterGEDI research group at Universidad de Zaragoza (Spain) together with the taxonomy of explanatory strategies stemming from the analysis of the corpus. In section 4 results will be presented on the overall use of explanatory strategies in the digital dissemination practices and their specific uses. Also, specific patterns and characteristic elements of their discursive realisation will be pointed out. Finally, section 5 will close the article with some concluding remarks, implications from the findings and venues for further research.

2 Digital dissemination and recontextualisation of specialised knowledge

Web 2.0, Scholarship 2.0 and Science 2.0 have enabled professionals to collaborate in the pursuit of common scientific goals and have facilitated the establishment of international networks with colleagues within and across fields around the globe. It has also contributed to opening science (Puschman 2015) to society and also to broader scrutiny favouring transparency. This openness has ensured citizens' participation and public engagement, as a way to democratise science and bridging or softening knowledge asymmetries (Engberg 2021). Nevertheless, digital scientific dissemination practices may result in an increasing marketisation process of academic life and commodification of knowledge (Pascual et al. 2023).

The digital communication and dissemination of science and expert knowledge makes it available to heterogeneous, indeterminate audiences, blurring the boundaries between expert and non-expert communication, between specialists and the general public. This is a challenge for scientists, scholars and mediators of domain-specific knowledge who need to bear in mind the background information, needs and expectations of a diversity of readers who may consume science communication as it is made available online. Digital science communication is "instantly available to millions of different populations – stakeholders, peers, funders, students, practitioners, promotion committees and the general public" (Hyland 2023: 25).

Through the varied digital professional and discursive practices that scientists and scholars are pressed to take on, they construct their identity and gain visibility, establishing their reputation, credibility and recognition. As Pascual et al. (2023: 13) underline, "the rise of the digital medium has brought about researchers' aspiration for a higher visibility that may allow them to reach a wide audience, have a bigger impact and develop a digital identity that makes their investigations recognisable and prominent".

The analysis of digital communication and digital genres has underlined a number of key aspects and affordances that are due to or reinforced by the actual medium. Some of these are: intertextuality, hypertextuality, interdiscursivity, hypermediality, interactivity, remediation, resemiotization, multimodality, hybridity and recontextualisation. The focus of this paper is on the latter, understood as "a process by which some part of discourse is extracted from one communicative context and conveyed into another" (Bondi et al. 2015: 2). This is especially favoured and enhanced by the use of digital media and platforms. It requires the transformation of specialised, expert knowledge to make it accessible, understood and accepted by multiple audiences, potentially addressed to in the digital medium. This recontextualisation can bring with it hybridity and interdiscursivity (Bhatia 2010), as conventions from diverse discourses can be appropriated, as well as multimodality – as adjusting specialised content to different audiences may bring with it the use of diverse modes.

According to Linell (1998, 2001), recontextualisation entails the dynamic transference and transformation of some part or some aspect of a text (or text type) tied to a particular context to another text tied to a different context. The study of recontextualisation for the digital medium requires going beyond the linguistic reformulation, that is, beyond intertextual recontextualisation (i.e. overt transfer and transformation of specific parts of one text to another) to the social and cognitive-discursive level, that is, to interdiscursive recontextualisation (i.e. the transfer and transformation of more abstract features and semiotic resources and conventions across texts, genres and practices) (Mäntynen & Shore 2014).

Recontextualisation can be taken to be a knowledge building process carried out by experts when communicating with other experts and non-experts (Engberg & Maier 2020). Once experts realise the difference with addressees in knowledge base, they resort to different processes and make that difference visible in communication through verbal and non-verbal resources, as a response to and seeking to overcome knowledge asymmetries (Engberg & Maier 2015, Engberg 2023). Recontextualisation can, thus, be considered as a process to mediate understanding across those attested knowledge asymmetries. From the recontextualisation literature (Bezemer & Kress 2002, Calsamiglia & van Dijk 2004, Gotti 2014, Luzón 2013, 2019, Mattiello 2017, Carter-Thomas & Rowley-Jolivet 2020, Bondi & Cacchiani 2021, Lorés 2023), two types of strategies can be discerned. Explanatory or illustrative strategies on the one hand, and engagement or attention-getting strategies, on the other. The focus of the analysis presented in this paper will be on the former. Explanatory strategies have been referred to differently and they will be taken as a point of departure to look at the phenomenon of recontextualisation in the digital dissemination practices to be analysed. Luzón (2013) refers to strategies to tailor information and encompass: explanation of terms and concept, paraphrases/reformulations, comparisons/metaphors, examples from daily life, links, and visuals conveying information. In her analysis of science videos Luzón (2019) establishes four strategies and those used to tailor information to the assumed knowledge of potential readers are labelled "Framing" (the other three are: Source credibility, Convincing argument and Engagement). Framing strategies contribute to facilitating understanding of abstract ideas and distant situations (Gotti 2014), and therefore to knowledge communication potentially reaching more diverse audiences. In three-minute thesis presentations, such strategies to tailor information entail "decisions about which aspects of the research topic to underline and which to downplay or exclude, how to explain key terms, concepts and processes, and how to frame the research so that it becomes accessible to the audience" (Carter-Thomas & Rowley Jolivet 2020: 5). In her analysis of recontextualising strategies in online research digests, Lorés (2023) establishes three dimensions, of which "comprehensibility of text", that is, the "discoursal efforts made by the scriptwriter to facilitate the understanding of the text by audiences with different degrees of expertise" (Lorés 2023: 72) would correspond to what are referred in this paper as "explanatory strategies".

Thus, as understood in this study, explanatory strategies are used to tailor domain-specific information to a global, diffuse audience, to frame research to make it accessible and to bridge a gap in knowledge between experts (disciplinary fellows) to non-experts (interested users and the wide public). The article seeks to provide an answer to the following research questions:

1. Which explanatory strategies are included in the digital dissemination practices identified when transferring knowledge on circular economy and sustainability?
2. Which ones are more commonly used within and across these digital dissemination practices so that specialised knowledge in this field is made accessible, understood and accepted by a wide audience? Are there any differences in their use between author-generated (articles in *The Conversation*) and writer-mediated (feature articles and research digests) digital scientific dissemination practices?
3. How are these explanatory strategies realised? What (lexico-grammatical) features are characteristic of the process of recontextualisation in the digital scientific dissemination practices identified?

3 Methods

3.1 Corpus and procedure

Explanatory strategies are analysed in a sub-corpus taken from our SciDis Database which includes digital texts and practices related to three fields (Health, Economy and Natural Sciences) in which we assume that the practices of dissemination of knowledge in digital media are currently occurring as they are of particular relevance to the public and of significant social impact. We selected texts and genres on topics within each of the three fields which can be of special interest to the society as global citizens, and which can be connected with specific Sustainment Development Goals (SDGs), adopted by all United Nations Member States in 2015, as shown in Table 1. We believe that research has to be disseminated to promote global understanding of these issues at stake so that the Agenda established for 2030 can be met. The texts that constituted the sub-corpus here analysed correspond to the field of Economy, and in particular, to the topics of sustainability and circular economy in connection with SDG 12 (Responsible consumption and production).

Field	Topics	SDGs
Health	Physical activity and nutrition Mental health	SDG3 Good health and well-being
Economy	**Sustainability** **Circular economy**	**SDG12 Responsible consumption and production**
Natural sciences	Energy efficiency Climatic change	SDG7 Affordable and clean energy SDG13 Climate action

Table 1: Fields and topics within the SciDis Database of digital dissemination practices

We have attempted to determine so far some disseminating digital practices and we have drawn two distinctions, one with the authorship of the digital texts disseminated and one with the platform or space in which the practices are upheld. First, as regards authorship, we have distinguished between those practices in which the constructors of expert knowledge and the disseminators of such knowledge coincide, and which we have labelled author-generated, and those in which expert knowledge is disseminated not by the researchers or scientists themselves but by other knowledge managers – science scriptwriters and journalists, which we have labelled writer-mediated. We believe this distinction can have a bearing on discourse choices. Second, as regards platforms or spaces, we distinguish between web-hosted practices and social media practices, since the level of interactivity, for example, a key digital affordance, entails differences in one and the other.

In this paper the focus is on web-hosted practices, including both author-generated and writer mediated practices. Overall, 30 texts were selected: 10 author-generated ones taken from *The Conversation* platform, and 20 writer-mediated ones: 10 feature articles taken from two sites (*Nature* and *The Smithsonian Magazine*) and 10 research digests taken from another two sites (*Science Daily* and *European Commission*) (see Table 2). As stated on their website, *The Conversation* is "a nonprofit, independent news organization dedicated to unlocking the knowledge of experts for the public good", aims to "publish trustworthy and informative articles written by academic experts for the general public and edited by our team of journalists", and "to raise up the voices of true experts and to make their knowledge available to everyone" (https://theconversation.com/us/who-we-are). Feature articles selected from *Nature* have a DOI number assigned and some contain references, whereas those in *The Smithsonian Magazine* do not. In both cases they are signed by scriptwriters and journalists. Research digests from *Science Daily* and *European Commission* include information on how to cite the text and acknowledge the source of article and material from which scientific knowledge is disseminated.

	Author-generated web-hosted disseminating practice	**Writer-mediated web-hosted disseminating practice**				**TOTAL**
		Feature articles		Research digests		
	The Conversation	*Nature*	*The Smithsonian Magazine*	*Science Daily*	*European Commission*	
Nº of texts	10	5	5	5	5	30
Nº of words	8,997	5,742	8,894	3,489	3,579	30,124
Average nº of words per text	900	1,464		707		1,120

Table 2: Description of Eon Sci-Dis sub-corpus

Text length in the *The Conversation* texts ranged from 736 to 1,166 words, all of them included at least one picture in relation to the research or scientific topic. Text length in feature articles varied considerably in the two sites from which the texts were compiled. They ranged from just 634 to 2,956 words. All feature articles but one (*Nature* Econ3) contain at least one picture. Research digests are overall shorter texts and their length varies from 443 to 953 words. Research digests published on *Science Daily* contain no picture.

For the analysis of explanatory strategies employed when recontextualising specialised knowledge, the Computer-Facilitated Qualitative Data Analysis software Nvivo12 was used. A data-driven analysis was applied and a resulting taxonomy of seven explanatory strategies stemmed, which is presented in the next sub-section. These were turned into nodes and all texts were coded accordingly.

3.2 Taxonomy of explanatory strategies in digital scientific dissemination

Seven explanatory strategies, divided into verbal and non-verbal, were derived from the data-driven analysis of the sub-corpus. The five verbal explanatory strategies found in the digital scientific dissemination practices analysed are:

1) Elaboration. Through amplifications, meaning is made accessible to wide audiences. It is judged that the understanding of the specialised information may be compromised and specific concepts and ideas are expanded to ease their comprehension and overall acceptance. They may be discursively introduced by means of commas, hyphens, parentheses or relative clauses, as shown in Example 1:

(1) In the United States, 17 percent of skiable terrain benefits from machine-made snow, according to the National Ski Areas Association (NSAA), **an industry group that represents more than 300 ski areas in the U.S.** However, there's a lot of regional variability – snowmaking tends to be more common at ski resorts in the East than those in the West.

But Sunshine Village Ski Resort in Alberta, Canada, also known as Banff Sunshine, takes a different approach: snow farming. For decades, the resort has pioneered this technique, **which involves setting up miles of fencing across its highest terrain to capture large amounts of wind-blown, natural snow**.

(Feature article *The Smithsonian Magazine* Econ 3)

In this brief text two elaborations have been included. The first one can be taken to be a description of the Association, which may not be known by all readers, the second one provides a definition of snow farming, which again has been judged by the knowledge mediators as not understandable for all potential audiences by the authors managing knowledge.

2) Explicitation. In this case specific details or peculiarities are provided to make the idea or concept clearer to the audience. On many occasions acronyms are spelled out and again these are seen as turning implicit content explicit to adjust to diverse audiences who may find certain aspects and terminology obscure. Explicitations can be introduced in the text by commas, hyphens and varied discursive elements. In Example 2 two particular details which some readers may not consider to be part of the life cycle of a product are highlighted to make sure the information is understood as intended.

(2) The scientists therefore call for product stewardship to encompass the entire life cycle -- **including disposal and recycling** -- as the basis for optimising the design of sustainable processes.

(Research digest *Science Daily* Econ 3)

3) Exemplification is the third explanatory strategy used to recontextualise specialised knowledge so that it is readily understood by diversified audiences. Examples are provided to illustrate given aspects which, as a result of authors' management of knowledge, are considered knowledge reminded or knowledge being constructed (Calsamiglia & van Djik 2004). In Example 3 an imperative is used to introduce an example of the staggering environmental impact of the fashion industry trends. Examples are most commonly introduced by discourse markers, as in Example 4.

(3) Taken together, these trends are having a staggering environmental impact. **Take water**. The fashion industry, one of the world's largest users of water, consumes anywhere from 20 trillion to 200 trillion litres every year.

(Feature article *Nature* Econ 5)

(4) This means taking into account important habitats **like mangroves and seagrass**, as well as other priorities that might compete with aquaculture for space, **such as tourism and maritime transpor**t.

(*The Conversation* Econ 8)

4) Enumeration, indicating the specific number of elements in a category previous to their specification can make the information more easily accessed by the reader. The sequencing may be a result of pruning information to its essential components. In Example 5 two subsequent examples of enumeration as an explanatory strategy accrue. A framework consisting of three stages and four sets is being reported.

(5) They identify **three stages – identifying opportunities, initiating projects, and scaling implementation** – and propose management and decision-making tools that could be of use in each. They also highlight **four sets of external conditions that are required to enable the transition, relating to technology and design, funding and investment, markets and governance, and society and labour.**

(Research digest *European Comission* Econ 4)

5) Comparison/analogy is used to bring the concepts and ideas close to other concepts that managers of knowledge judge to be more common and better known by the audience or for them to better grasp the relevance or significance of figures and data provided, as in Example 6. In order for

the magnitude of the percentages to be fully understood, it is explained further through a comparison.

(6) Africa's agriculture sector accounts for about 35% of the continent's gross domestic product, and provides the livelihood of more than 50% of the continent's population. These shares are **more than double those of the world average and much higher than those of any other emerging region**.

(*The Conversation* Econ 7)

The two non-verbal explanatory strategies found in the digital dissemination practices analysed are:

6) Spatial organisation (layout). Whereas the layout may be constrained by the platform affordances, very often these texts, however short, contain headings and bullet points chunking the information, which contributes to clarifying meaning, making it accessible to audiences with diverse levels of expertise. This breaking down of information may be the result of streamlining specialised knowledge and of pruning ideas, as these are selected and recontextualised in the new medium, easing their comprehension.

(7)

The direct approach

At the HZB Institute for Solar Fuels, several teams are working on a direct approach to solar water splitting: they

Not yet competitive

So far, techno-economic analyses (TEA) and net energy assessments (NEA) have shown that the PEC approach is not yet competitive for large-scale implementation.

The idea: co-production of valuable chemicals

"This is where we wanted to bring a new approach," says Dr Fatwa Abdi from the HZB Institute for Solar Fuels.

Energy payback times

They first calculated how much energy is needed to produce the PEC cell from light absorbers, catalyst materials and other materials such as glass, and how long

A flexible system

"The system is flexible and can also produce other valuable chemicals that are currently needed at the site," explains Abdi. The advantage is that the fixed components

(Research Digest *Science Daily* Econ 3)

7) Visual representations tend to comprise representationally narrative rather than conceptual pictures (Kress & van Leeuwen 2021), as they portray people and settings directly related to the idea or phenomenon being recounted and bring it closer to the readers' likely experiences and conceptualisations. The inclusion of visual representations in the digital disseminating practices analysed can be taken to be a multimodal knowledge enhancement process in as much as they entail the repetition of concepts in more than one modality (Engberg & Maier 2022). As stated by Lorés (2023: 74) in relation to comprehensibility of text in the digital recontextualisation of knowledge, "[v]isuals and text combine and interact giving way to a 'communicative ensemble' which enhances understanding and reinforces meaning."

(8)

Solar panels float on a mountain lake in Switzerland. The first such system was installed in 2008. Gunter Fischer / Education Images / Universal Images Group via Getty Images

(Feature article *The Smithosian Magazine* Econ4)

The following section presents the main findings on the extent of use of each of these strategies in the corpus of digital scientific dissemination and on how they are realised, providing an answer to the research questions posed.

4 Explanatory strategies in the digital disseminating texts

Explanatory strategies do play a crucial role in the transformation of disciplinary knowledge to adjust it to broad social needs and expectations when it is disseminated online, as attested by the number of such strategies found in the sub-corpus (Table 3). Scientific, specialised knowledge is not only identified and selected but also shaped through specific, especially verbal, strategies.

	Author-generated		**Writer-mediated**					
	The Conversation		**Feature articles**		**Research digests**		**Total**	
	Number	Per 1,000 w.	Number	Per 1,000 w.	Number	Per 1,000 w.	**Number**	**Per 1,000 w.**
Explanatory strategies	164	18.2	183	12.5	98	13.9	**445**	**14.5**
Verbal	113	12.6	150	10.2	86	12.2	**349**	**11.4**
Non-verbal	51	5.7	33	2.3	12	1.7	**96**	**3.1**

Table 3: Total number of explanatory strategies in the three digital dissemination practices analysed.

Given the text-rich nature of these web-hosted practices, verbal explanatory strategies have been found to be very frequent. Authors and scriptwriters turn to discoursal choices to amplify, expand and provide extra information for the audiences to access, understand and accept disciplinary knowledge. Normalised figures of verbal explanatory strategies show similarity across author-generated and writer-mediated scientific digital disseminating texts, a lower proportional number of which are found in feature articles. There are differences in the frequency of use of non-verbal explanatory strategies. These changes are mostly due to the lack of pictures in research digests, which show the lowest number of non-verbal explanatory strategies (1.7 per 1,000 words), and to the large number of headings and bullet points in *The Conversation* texts, which show the highest number of non-verbal explanatory strategies (5.7 per 1,000 words). Overall, these author-generated texts include a higher number of strategies per 1,000 words. As general research results tend to be reported in these texts, rather than those stemming from a particular publication or publications, authors may believe that domain-specific knowledge needs to be reminded, actualised, or newly constructed (Calsamiglia & van Djik 2004) to a greater extent. The texts may be intended to reach and be consumed by lay people with general interest in the topics but little depth or breadth of knowledge (Engberg & Maier 2020), which may require further (multimodal) recontextualisation strategies to bridge knowledge asymmetries between producers and consumers of such specialised knowledge. On the other hand, readers of feature articles and research digests, recontextualising concrete research publications, may be judged to have at least further breadth of specialised knowledge.

In the following two sub-sections findings on the use of each specific verbal and non-verbal explanatory strategy identified in the corpus of author-generated and writer-mediated scientific dissemination texts are presented.

4.1 Verbal explanatory strategies

As shown in Table 4, exemplifications and explicitations are the most common verbal explanatory strategies across the three disseminating digital practices. Authors and writer-mediators often resort to examples to increase the chances of being understood not only by peers but also by (semi)laypersons (Ciapuscio 2003), and potentially the general public.

	Author-generated		**Writer-mediated**			
	The Conversation		**Feature articles**		**Research digests**	
	Number	**Per 1,000 words**	**Number**	**Per 1,000 words**	**Number**	**Per 1,000 words**
Exemplification	44	4.9	49	3.3	36	5.1
Explicitation	30	3.3	53	3.6	30	4.2
Elaboration	25	2.8	31	2.1	14	2.0
Enumeration	7	0.8	5	0.3	5	0.7
Comparison/ analogy	7	0.8	12	0.8	1	0.1
Total	113	12.6	150	10.2	86	12.2

Table 4: Verbal explanatory strategies across the three digital dissemination practices analysed

Exemplifications have been found in 29 out of the 30 texts analysed, their frequency ranging from one to thirteen strategies per text. They are most commonly introduced in the texts by the markers “for example” or “such as”. They are also signalled by phrases such as “an example is..., “another example is…”. However, they are not necessarily preceded by a marker or an introductory phrase. In Example 9 two examples of circular solutions are inserted, even if they are not explicitly signalled as such.

(9) […] to come up with circular solutions to that stalwart of every wardrobe. Some manufacturers have made their jeans-production process more circular **by using organic cotton, and by inserting zips in a way that allows them to be easily removed when clothes are recycled. Others are using reinforced stitching to make their products last longer**.

(Feature article *Nature* Econ 6)

Explicitations have been found in all texts in the sub-corpus but two, with their frequency ranging from one to twelve strategies per text. They are most commonly included between commas, brackets, or dashes, as an extra remark, anticipating possible readers' knowledge gaps. Authors and writer-mediators judge the audience's background information to be insufficient, and as a result they provide further information to ensure the audience's access to the concepts or ideas discussed. These very often refer to acronyms and also to specific locations and details about entities or people. It is interesting to see that in feature articles explicitations outnumber exemplifications. This may be due to the use of more specific terms or concepts and acronyms that need to be spelled out in these texts. Even if technicality in content and vocabulary may be reduced in these digital dissemination practices, they are not superseded; in fact, they may be reduced to a lower extent than in other disseminating practices, especially oral ones, such as TED talks (Mattiello 2017).

Elaborations is the third category of verbal explanatory strategy found in the dissemination practices analysed and they have been found in 24 out of the 30 texts in the sub-corpus, in eight of the feature articles, seven of the research digests and ten of *The Conversation* texts. Elaborations go beyond the provision of specific details and amplify the text in an attempt to promote understanding from audiences with diverse levels of expertise in the fields and topics covered. These amplifications entail very often providing a definition (Example 10, and also Example 1 above), a description (Example 11) or provide an explanation in the form of a paraphrase (Example 12).

(10) The move to a circular economy – **a system that aims to reduce, reuse and recycle materials** – could address 70% of global greenhouse
(Feature article *Nature* Econ 4)

(11) Modular design – **where product parts can be replaced and upgraded** – is a promising way of extending product lifetimes.
(Research digest *European Commission* Econ3)

(12) using life cycle analysis to shorten its overseas supply chain – **to use as few intermediaries as possible**.
(Research digest *European Commission* Econ4)

These elaborations often imply the use of a relative clause that defines or describes the concept or process that is being highlighted, as shown in Examples 10 and 11.

There are two other types of verbal explanatory strategies which have also been found in the three types of digital disseminating texts, but they are used to a lesser extent: enumerations and comparisons/analogy. Enumerations contribute to break down information and to make it more digestible for the non-specialised audience and appear in twelve texts (evenly distributed across the three different digital disseminating practices). Comparisons/analogy are frequently used for readers to understand the magnitude or importance of the concept, element or idea discussed and which feature in ten texts, five feature articles, four texts from *The Conversation*, and one research digest.

These strategies imply that language and scientific discourse is not just adapted, but specialised terms and concepts are maintained and explained in a possible attempt to avoid oversimplification and risking losing credibility, and therefore, acceptance of the ideas discussed. Through these strategies specialised knowledge may be reminded, actualised or newly constructed (Calsamiglia & Van Djik 2004) depending on the audiences consuming them.

4.2 Non-verbal explanatory strategies

The number of non-verbal explanatory strategies is much lower than that of verbal ones in all three digital disseminating texts. Pictures, bullet lists and headings are most common in author-generated texts, and least common in writer-mediated research digests. These, as a multimodal knowledge enhancement process, can greatly contribute to constructing meaning and to making ideas and concepts more transparent, accessible and understood by non-specialised audiences.

	Author-generated		**Writer-mediated**			
	The Conversation		**Feature articles**		**Research digests**	
	Number	Per 1,000 words	Number	Per 1,000 words	Number	Per 1,000 words
Visual representations	24	2.7	28	1.9	5	0.7
Spatial organisation	27	3.0	5	0.3	7	1.0
Total	51	5.7	33	2.3	12	1.7

Table 5: Non-verbal explanatory strategies across the three digital dissemination practices analysed.

As far as visuals are concerned, no tables, graphs or figures are present in these digital dissemination practices. It is interesting that this information has not been selected to be repurposed or resemiotised by knowledge managers mediating between specialised knowledge and these disseminating texts. This leads to the idea that it is not results or evidence that needs to be disseminated in this secondary output, but rather the implications, applications, consequences of that research or data for citizens. Pictures, on the other hand, are included in all texts except in one of the two sites from which research digests have been taken, *Science Daily*. Pictures are mostly narrative representational structures and are highly modal (Kress & van Leeuwen 2021). They are considered to make the message and topic more accessible to less competent or knowledgeable readers in as much as they depict a setting or element establishing a connection with everyday or more concrete experiences, as shown in Example 8 above and in Example 13. In this picture piles of new brand clothes in an undefined department store are shown to depict our common shopping habits and to gear our reading into the environmental impact of such daily practices.

(13)

How fast fashion can cut its staggering environmental impact

The textiles industry urgently needs input from researchers to help it to embrace the circular economy.

Fast fashion results in new lines being added every week — instead of four times a year — most of which goes to landfill. Credit: Eve Edelheit/Bloomberg/Getty

(Feature Article *Nature* Econ5)

Just on a couple of texts, in research digests, the pictures included are conceptual, evoking key terms and the relationship among them.

As far as spatial organisation is concerned, breaking down information into bullet points or into different sections accompanied by a heading entails breaking down complicated information, thus mediating specialised knowledge for readers to better understand it. Whereas all author-generated texts from *The Conversation* include a bullet list or a heading (ranging from 1 to 5 spatial organisation realisations per text), only two feature articles and two research digests distil the information recontextualised in this way. As highlighted above, the different nature of the knowledge disseminated through these author-generated texts may explain the greater use of these non-verbal explanatory strategies.

Overall, even if verbal explanatory strategies outnumber non-verbal ones in the digital disseminating practices analysed, non-verbal ones also play an important role as multimodal knowledge enhancement devices (Engberg & Maier 2022) especially in the author-generated texts in the corpus, helping readers get across specialised knowledge, and help them represent, access and accept it.

5 Conclusions

The Web 2.0, Science 2.0 and Scholarship 2.0 has revolutionised how specialised knowledge is created, shared and communicated. In this context further analyses of the evolving, increasingly complex digital professional and discursive practices need to be carried out. More light needs to be shed on why and how scientific findings are disseminated by knowledge generators and managers of such knowledge on economic sustainability and circular economy, and accessed, understood and accepted by users (citizens). This paper has sought to contribute to this understanding by focusing on the role of recontextualisation, especially on the explanatory strategies resorted to when disseminating this specialised knowledge widely online. As has been shown, such verbal and non-verbal explanatory strategies are aimed at simplification and easification of concepts and ideas that are judged to be complex by authors and writer-mediators to ensure comprehensibility. Such strategies, however, should not compromise credibility and legitimation for less expert readers not only to understand such specialised knowledge but also for them to accept and approve it (Engberg 2021).

In response to the research questions posed, a taxonomy of seven explanatory strategies (five verbal and two non-verbal) has been presented as used in author-generated digital dissemination practices, namely, *The Conversation* texts, and writer-mediated disseminating practices, namely feature articles and research digests. Verbal explanatory strategies have been found to outnumber non-verbal ones. Among verbal explanatory strategies, explicitation and exemplification are not only the most frequent ones but also the ones that feature in the most number of texts, followed by elaboration, which is also commonly used to expand and amplify information ensuring comprehensibility, followed by enumeration and comparison/analogy, which are the least common. Among non-verbal explanatory strategies, two types have been discerned: visual representations, constituting mostly narrational pictures, and spatial organisation, comprising bulleted lists and headings. When looking at the normalised frequency of use of verbal strategies, a rather similar trend is perceived. Frequency differences are found, however, in the use of non-verbal strategies, which are less common in writer-mediated digital disseminating practices, as not all research digests include a picture which plays a significant role in enhancing comprehension, and just two out of the ten research digests present headings. Non-verbal explanatory strategies are more profusely used in author-generated *The Conversation* texts, in which authors seem to bridge knowledge asymmetries through different modes to a greater extent. Overall, then, commonalities were found in the explanatory strategies resorted to in both author-generated and writer-mediated digital scientific disseminating practices as well as in their realisation. Some differences were observed in the use of non-verbal strategies by different knowledge managers. Researchers resorted to as a multimodal knowledge enhancement process in their author-generated *The Conversation* texts to a greater extent than science scriptwriters and journalists in their mediated feature articles and research digests. The use of explanatory strategies in the digital scientific disseminating practices selected, give way to hybrid texts as a result of a process of interdiscursivity (Bhatia 2010). Authors and mediators when disseminating scientific, specialised knowledge draw from or appropriate discourse conventions of other genres and practices. This scientific discourse seems to be blended and combined with pedagogical discourse which encompasses definitions, explanations, comparisons to ensure that meaning is effectively conveyed and processed. Other strategies are also used in digital recontextualisations of expert knowledge to claim credibility trustworthiness and legitimation as well as to engage audiences (e.g. Luzón 2013, 2019, Carter-Thomas & Rowley-Jolivet 2020, Bondi & Cacchiani 2021, Lorés 2023), which bring further interdiscursivity and discoursal hybridity appropriating features characteristic of promotional and marketing discourse. The analysis of such strategies, however, lies beyond the scope of this study and could constitute venues for further exploration of these digital knowledge disseminating practices.

Further research could also be undertaken on a larger corpus containing texts from other fields (especially Health and Natural Sciences as they are part of the SciDis Database) to check if the use of the explanatory strategies in the taxonomy presented is maintained in the different digital disseminating practices regardless of the field and topic. Future studies could also delve into exploring the cognitive mechanisms in the process of recontextualisation of scientific knowledge online for diverse audiences, exploring, for instance, which information is selected from the sources used, and how it is selected.

Knowledge communicators and managers (researchers and science scriptwriters) need to develop specific communication skills to disseminate scientific ideas and advances digitally tailoring such knowledge to diverse audiences and bridging knowledge asymmetries between scientists and citizens while maintaining expertise and avoiding oversimplification. They need to orchestrate other non-verbal modes and make use of the platform affordances to ease the comprehensibility of the information encoded so that specialised knowledge is actualised shared, consumed, and understood. The results of the present study on the explanatory strategies used in the digital disseminating practices analysed may be used to develop discursive tools which can be of help to researchers and mediators of disciplinary knowledge using English to transfer research results at a global level making domain-specific knowledge accessible through digital media to diversified, indeterminate audiences. They could inform English for Academic Purposes and English for Specific courses to contribute to training future effective professional communicators.

The study presented in this paper is just a preliminary look into how expert knowledge is reframed and discursively represented in digital scientific dissemination practices. Further explorations are needed of how specialised knowledge is recontextualised and knowledge asymmetries tackled discursively and multimodally, while maintaining credibility, trustworthiness and legitimation (Bondi & Cacchiani 2021).

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STANCE MARKERS IN FORESTRY RESEARCH ARTICLES: INDICATORS OF AUTHORITATIVE VOICE

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Abstract

Stance markers, serving as the primary discursive category of interactional metadiscourse, function as a reliable measure for evaluating how authors of research articles authoritatively foreground their research within disciplinary communities. Stance research primarily focuses on how authors or speakers adjust the certainty level of their assertions, both epistemically and emotionally. This study examined the occurrences of stance markers in each rhetorical move within the Introduction, Methods, Results and Discussion sections of forestry research articles. The corpus comprised 40 research articles randomly selected from five ISI journals in the forestry discipline. This study utilized Hyland's (2005) model of academic interactions and Kanoksilapatham's (2005) framework as analytical tools for identifying stance markers and the rhetorical structure of forestry research articles. The findings revealed differences in the distribution of these markers across the different sections and constituent rhetorical moves within the research articles. Overall, hedges and self-mentions emerged as the most prevalent stance markers in this study. Across sections, attitude markers and hedges predominated in the Introductions, while self-mentions and hedges were pervasively applied in the Methods sections. Boosters and attitude markers were common in the Results, and boosters along with self-mentions were notable in the Discussions. Finally, stance markers appear to play a fundamental role in shaping distinct argumentations across discourse communities, while effectively reflecting disciplinary voices.

Keywords

metadiscourse, stance markers, research article, forestry

1 Introduction

Genre analysis of research articles has experienced a surging interest over the past three decades. Swales' work (1990, 2004) is widely regarded as a cornerstone in English for Specific Purposes (ESP) genre analysis, particularly concerning research articles. This has led to the fusion of genre analysis with corpus linguistics studies. Incorporating the interpersonality concept in genre analysis can provide valuable insights into how writers establish their communicative goals and interact with their audience within research articles (Hyland & Tse 2004). This approach highlights the integral relationship between language, genre conventions, and interpersonal communication in academic writing. By adopting

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a dialogic approach to writing and projecting their stance, writers acknowledge the importance of interaction with readers, their needs, perspectives, and expectations while reinforcing solidarity between the writers and the audience (Soylu et al. 2023). The adept application of interactional metadiscourse features, stance markers and engagement markers facilitates reader involvement with the text (Mei et al. 2020). By strategically deploying such elements, writers create a sense of interaction and dialogue within the text, encouraging readers to actively participate in the act of meaning making. Stance markers, which include hedges, boosters, attitude markers, and self-mentions, are established as the fundamental elements of interactional metadiscourse features. Building on Hyland's (2005) framework, stance encompasses three essential components of *evidentiality* (hedges and boosters), *affect* (attitude markers), and *presence* (self-mentions).

Recognizing the pivotal role of appraisal mechanisms in academic writing, mastering the strategic use of persuasion devices and stance markers within each rhetorical move and throughout the research article has emerged as the primary challenge for authors. This proficiency considerably increases the likelihood of publication in reputable English-language journals. The credibility of a research paper depends not only on its substantive content but also on the writer's ability to integrate it into a coherent communicative framework through employment of a balanced proportion of stance markers in each rhetorical move to reinforce the persuasive effect of each communicative unit (Nasirizadeh et al. 2022).

Academic research writing constitutes a distinct genre of argumentation grounded in the presentation of truth, both empirical and non-empirical evidence, impeccable logic, and cognizant rhetoric. Through stance markers, authors interpret data and persuade readers of the worthiness of their argumentations (Jiang & Hyland 2015). Stance markers are regarded as indicators of authoritative voice and a primary criterion for gauging the certainty level of writers' expressed attitudes toward the propositional content in a text (Hyland 2012). Stance markers are widely recognized as a fundamental component of academic persuasions. Stance can be defined with respect to both physical and mental aspects. Fleming (1967) uses *attitude* interchangeably as a synonym for *persuasion*. Originally associated with physical features such as body posture and accent, *attitude* from the Latin word *habitus* represents how social culture and personal history shape the body and mind (Fleming 1967, as quoted in O'Keefe 2015). Biber (2006), however, states that affective evaluations are uncommon in academic texts, and they are typically expressed implicitly rather than explicitly in academic texts.

Stance markers aid research article writers in achieving their communicative goals, both rationally and affectively, by adjusting the commitment and certainty level of their statements. Issues in projection of an opposite authorial stance has frequently resulted in underestimating the writers' texts and research potentials (Bahrami et al. 2018). Many submitted papers are rejected not because of obvious syntactic or lexical errors, but rather due to issues in commitment and argumentation, especially concerning the use of hedges and boosters (see Flowerdew 2001, Englander 2006). Hedges, while revealing probability and a degree of uncertainty or academic modesty, potentially allow for increased precision. Hedges prompt researchers to adopt less personal, less biased, and more objective, data-driven, and metrics-driven judgments (Hyland 2005). Boosters convey conviction, assertion, presentation of non-provisional claims, and emphasis on information (Hyland 1998).

The reduced application of boosters and attitude markers indicates a shift from commitments expressed as personal beliefs to more objective, data-supported assurances (Hyland & Jiang 2018). However, the increased use of boosters in research papers has been linked to hyperbolic and promotional language to emphasize certainty, contribution, novelty, and potential, particularly regarding research methods, outcomes, and the significance of a study (Hyland & Jiang 2021). Propelled by metrics-driven career incentives, scholars are under continual pressure to capture the attention and approval of reviewers, editors, readers, funders, and promotion boards. This often entails rhetorically promoting their work through hyping language to maximize visibility (Hyland 2023).

As to self-mentions, Hyland and Jiang (2017) argue that, traditionally, the absence of first-person pronouns was considered a hallmark of positivist impersonality. Positivism or empiricism has traditionally emphasized the persuasive authority of impersonality through passive voice structures, to enhance the credibility of the writer and obtain credibility from readers. Initially inspired to see if there is evidence for the often-heard claim that academic writing has become more impersonal in recent years, Hyland and Jiang discovered that the hard sciences compared to the social sciences have experienced a remarkable increase in the application of first-person pronouns as the main marker of informality in academic writing. While some researchers have examined the realizations of stance markers in research articles across the various soft and hard science disciplines (e.g. Hyland & Jiang 2018, Azar et al. 2022), studies specifically focusing on the identification of such markers across rhetorical moves of research articles, especially in forestry, are scarce. Indeed, this field remains largely unexplored in terms of its rhetorical structure and metadiscoursal features. The examination of forestry as a hard science is principally motivated by the practical need to analyze research articles within the quantitative paradigm. Such research papers are often grounded in positivist-empiricist assumptions, which mainly serve as a cornerstone for academic and scientific judgments (Ryan 2006). This study aims to investigate the following questions:

1. How are stance markers distributed in the Introduction, Methods, Results, and Discussion sections of forestry research articles?
2. How do forestry authors apply stance markers in each move of forestry research articles to pursue their persuasive goals?

To address these questions, Hyland's (2005) interactional model of metadiscourse and Kanoksilapatham's (2005) framework were applied to explore the distribution of stance markers in each rhetorical move of the sections of forestry research articles.

2 Theoretical framework

2.1 Hyland's (2005) interactional model of metadiscourse

Vande-Kopple's (1985) classification of metadiscourse is divided into two subcategories: textual and interpersonal metadiscourse. Using Vande-Kopple's (1985) classification system of metadiscourse as a point of reference, Crismore et al. (1993: 17) developed "a revised classification system for metadiscourse categories", similarly divided into two domains of textual and interpersonal, incorporating ethical appeals which cut across both textual and interpersonal domains. Focused particularly on the academic interactions, Hyland (2005) proposed a taxonomy known as the interactional model of metadiscourse that summarizes the whole spectrum of interactional metadiscourse with two types of interactions: stance markers and engagement markers. Stance markers (hedges, boosters, attitude markers, and self-mentions) define how speakers or writers position themselves in relation to a statement or utterance. Conversely, engagement markers (reader pronouns, directives, questions to the reader, shared knowledge, and personal asides) characterize writers' adjustment and connection with their audience. Hedges reflect writers' attempts to acknowledge alternative voices, enabling them to adjust their commitment levels to a proposition by anticipating potential refutations from readers and to present less assertive certainties. Boosters, however, are linguistic tools that authors use to promote their work and enhance their argumentations by emphasizing the epistemic commitment and assertive certainty of claims. Attitude markers express writers' emotional rather than epistemic stance toward a proposition, reflecting their perspective on agreement, surprise, value, etc. Self-mentions signify the overt presence of authors in a text through linguistic tools such as *I*, *my*, *we*, *us*, *the author*, *the writer*, etc. Writers utilize these tools to establish an accomplished academic identity, claim authority for their argumentations, marketize their study, and establish themselves as active participants in the research process (Hyland 2005). While both categories of interactional metadiscourse are important, this study specifically focuses on stance markers. Table 1 provides the list of stance markers based on Hyland's (2005) interactional model of metadiscourse.

Stance markers	Examples
Hedges	about, almost, apparent, apparently, appear, appeared, appears, approximately, argue, argued, argues, around, assume, assumed, broadly, certain amount, certain extent, certain level, claim, claimed, claims, could, couldn't, doubt, doubtful, estimate, estimated, fairly, feel, feels, felt, frequently, from my perspective, from our , from this perspective, generally, guess, indicate, indicated, indicates, in general, in most cases, in most instances, in my opinion, in my view, in this view, in our opinion, in our view, likely, mainly, may, maybe, might, mostly, often, on the whole, ought, perhaps, plausible, plausibly, possible, postulate, postulated, postulates, presumable, presumably, probable, probably, quite, rather, relatively, roughly, seems, should, sometimes, somewhat, suggest, suggested, suggests, suppose, supposed, supposes, suspect, suspects, tend to, tended to, tends to, to my knowledge, typical, typically, uncertain, uncertainly, unclear, unlikely, usually, would, wouldn't
Boosters	actually, always, believe, believed, believes, beyond doubt, certain, certainly, clear, clearly, conclusively, decidedly, definite, definitely, demonstrate, demonstrated, demonstrates, doubtless, establish, established, evidently, find, finds, found, in fact, incontestable, incontestably, incontrovertible, incontrovertibly, indeed, indisputable, indisputably, know, known, must, never, no doubt, obvious, of course, prove, proved, proves, realize, realized, realizes, really, show, showed, shown, shows, sure, surely, think, thinks, thought, truly, true, undeniable, undeniably, undisputedly, undoubtedly, without doubt
Attitude markers	agree, agrees, agreed, amazed, amazing, amazingly, appropriate, appropriately, astonished, astonishingly, correctly, curious, curiously, desirable, desirably, disappointed, disappointing, disappointingly, disagree, disagreed, disagrees, dramatic, dramatically, essential, essentially, even, expected, expectedly, fortunate, fortunately, hopeful, hopefully, important, importantly, inappropriate, inappropriately, interesting, interestingly, prefer, preferable, preferably, preferred, remarkable, remarkably, shocked, shocking, shockingly, striking, strikingly, surprised, surprisingly, unbelievable, unbelievably, understandably, unexpected, unexpectedly, unfortunate, unfortunately, unusual, unusually, usual
Self-mentions	I, we, me, my, our, mine, us, the author, the author's, the writer, the writer's
Engagement markers	consider/note that/you can see that

Table 1: Interactional model of metadiscourse (Hyland 2005)

2.2 Kanoksilapatham's (2005) framework

This study utilized Kanoksilapatham's (2005) framework to investigate the rhetorical structure of forestry research articles. To our knowledge, this framework, originally developed for the analysis of biochemistry research articles, is the most comprehensive tool available for examining the rhetorical structure of research articles in forestry, a hard science discipline. Kanoksilapatham (2005) asserts that this framework is applicable across the various hard sciences, encompassing basic hard sciences, natural sciences, health or clinical sciences, and the applied- hard sciences.

Introduction section
Move 1: Announcing the importance of the field
Move 2: Preparing for the present study
Move 3: Introducing the present study
Methods section
Move 4: Describing materials
Move 5: Describing experimental procedures
Move 6: Detailing equipment
Move 7: Presenting equations, models, algorithms and their background
Move 8: Describing statistical procedures
Results section
Move 9: Stating procedures
Move 10: Justifying procedures or methodology
Move 11: Stating results
Move 12: Stating comments on results
Discussion section
Move 13: Contextualizing the study
Move 14: Consolidating results
Move 15: Stating limitations of the study
Move 16: Suggestions for further research

Table 2: Kanoksilapatham's (2005) framework

3 Methodology

3.1 The corpus

The corpus of this study consists of 40 data-driven empirical research articles randomly selected from five ISI forestry journals (2015-2016), amounting to a total of 36,545 words. These research papers follow the IMRD structure (Introduction, Methods, Results, Discussion). Swales (2004) notes that this structure is not applicable to theoretical and review papers. Kwan (2017) suggests that the IMRD structure is widely known for its application in extended contexts, for both pedagogical and research purposes. The selected articles were extracted from high impact factor journals in forestry. The research papers were analyzed to identify stance markers across the rhetorical moves of the research articles, employing Hyland's (2005) interactional model of metadiscourse and Kanoksilapatham's (2005) framework.

3.2 Data analysis

The present study used AntConc 3.4.0W (Anthony 2013), a freeware concordance program, to identify stance markers across each rhetorical move of forestry research articles. A concordance is a compilation of target words extracted from a text, illustrating their context. We derived the word list from Hyland's (2005) taxonomy of interactional metadiscourse. Applying Kanoksilapatham's (2005) framework, we meticulously reviewed the research articles to manually codify the rhetorical moves, recording the frequency of occurrences of each move and the respective stance markers. In this study, the primary unit for analysis of moves was typically the sentence. However, in cases where clauses incorporating a sentence served distinct functions, each was designated as a separate move (e.g. Pho 2013). We applied Kanoksilapatham's (2005) framework to identify the rhetorical moves, each coded as 0 or 1 within each paragraph to record whether a communicative unit is absent or present. For the identification of stance markers, we followed Hyland's (2005) taxonomy of interactional metadiscourse. Indeed, we did not merely rely on the mechanical procedure of detecting the indexed keywords. Instead, we thoroughly analyzed each instance, taking into account the word context to discern functional meaning rather than propositional meaning. According to Hyland (2005: 40), "propositional meaning" refers to the textual material concerning the world outside the text, often juxtaposed with "metadiscourse meaning" or "functional meaning" which reflects the writers' consideration of their readers. Respectively, inter-rater reliability was calculated through Cohen's kappa value and percentage agreement, applying the formula $A / (A + D) \times 100$, where A represents the number of agreements and D represents the number of disagreements. To assess inter-rater reliability, two PhD holders in the field of English Language with expertise in discourse studies were invited to independently code ten research articles (25% of the entire corpus). This aimed to measure the level of agreement between our coding and theirs. We conducted a two-hour training session for the coders to familiarize them with the coding system and to teach them how to use the AntConc 3.4.0W software for identifying stance markers. Following this training, we collaboratively reviewed the text to address any discrepancies between our coding and the coders' designations. Disagreements were resolved through discussions, negotiations, and clarification of the criteria for coding rhetorical moves and identifying stance markers. The coders discussed any problems or ambiguities that emerged in the coding process. The process was repeated multiple times using various randomly selected samples until all discrepancies were unanimously resolved and a substantial level of agreement was reached. The achieved agreement value was 98.5 per cent.

4 Results and discussions

The following section provides information on the findings from the analysis of stance markers in each section of the forestry research articles.

4.1 Stance markers in the Introduction sections

The frequency percentages of stance markers in each rhetorical move within the Introductions of forestry research articles are displayed in Table 3.

Move	Hedges			Boosters			Attitude markers			Self-mentions		
	RN	%	Freq per 1,000 words	RN	%	Freq per 1,000 words	RN	%	Freq per 1,000 words	RN	%	Freq per 1,000 words
M 1	169	67.3	4.62	69	75.0	1.88	56	75.4	1.53	17	16.5	0.46
M 2	55	21.9	1.50	12	13.0	0.32	14	17.9	0.38	15	14.5	0.41
M 3	27	10.7	0.73	11	11.9	0.30	3	6.6	0.08	71	68.9	1.94
Total	251	16.2	6.86	92	11.1	2.51	73	26.8	1.76	103	11.1	2.81

Table 3: Distribution of stance markers in the Introduction sections
(Note: RN stands for Raw Number in Tables 3-6 and 8)

According to the findings from the present study, attitude markers (26.8%) were documented as the dominant stance markers with hedges (16.2%) being the second most frequently documented feature in the Introductions. It can be argued that forestry writers often emphasize their affective attitude rather than epistemic attitude to underscore the significance of their topic, establish the gap, and stabilize their study objectives. Forestry writers showed a tendency to employ fewer boosters and rather more hedges in Introductions, possibly to avoid absolute commitment, particularly when justifying the novelty of their current research (M2), preferring statements that are less personal and more objective in tone. However, in mechanical and electrical engineering research articles, Estaji and Vafaeimehr (2015) found that boosters prevailed over hedges, indicating a more personal and less objective stance in this section. In Move 1, *Announcing the importance of the field*, boosters (75%) outnumbered hedges (67%). It seems that forestry writers prefer to upgrade rather than tone down their voice when highlighting the significance of their topic through referring to the shared literature. A probable explanation is that forestry writers tend to express conviction and assert their propositions via a more direct tone when calming significance of their study. In line with Khedri and Kristi's (2018) study on chemistry research articles, authors had a tendency to employ emphatic language to anchor their study in previous research, leaving little room for alternative interpretations on the readers' part. Hedges outnumbered boosters in Move 2, *Preparing for the present study*, which involves presenting the study gap. This suggests that forestry authors prefer to project a more cautious and less subjective or personal stance to convince readers of justification of their study gap, valuing alternative voices and viewpoints. The present findings are consistent with Salager-Meyer's (1994) study in that hedges were notably applied in Move 2 of medical research articles. However, Martin and Leon Perez (2014) found that writers in health sciences and political sciences often emphasized their contribution in Move 2 Introductions. In Move 3, I*ntroducing the present study*, higher levels of boosters (11.9%) than hedges (10.7%) were employed. One reason for this tendency could be that scholars in this field feel comparatively confident in outlining their research objectives by presenting hypotheses, stating procedures, and highlighting the value of their study.

(1) *Placement of trees in front of buildings* ***could*** *reduce the unpleasantness of the environment, especially when located in front of taller buildings.* (R) [M1]

(2) ***Indeed****, in a test conducted on several ecotypes of Agrostis stolonifera, it was* ***found*** *that these two factors were independent* (Ashraf et al., 1986). [M2]
(Note: R means 'Reference', M1 means Move 1, and M2 means Move 2)

In the above excerpts, *could* in Example (1) represents hedges, conveying metadiscoursal meaning and therefore is considered as an instance of stance markers. In Example (2), *indeed* and *found*, functionally analyzed, are considered as boosters, serving to amplify the message conveyed in the text.

Regarding attitude markers, the majority were documented in Move 1 (74.4%), indicating that forestry authors tend to express their affective stance when establishing the importance of their study. They frequently apply exuberant attitudes in anchoring their study in the field, providing general information, and referring to past studies. Move 3 devoted itself to the lowest percentage of attitude markers (6.6%), aiming to present the study objectives in a more rational rather than emotional manner. This is nearly consistent with research conducted by Khedri and Kristi (2018) on soft-science and hard-science research articles. In their study, attitude markers were found only in Moves 1 and 2, with a higher percentage observed in Move 1.

(3) *It is **interesting** to study the plant species distribution patterns along complex environmental gradients mainly for two reasons.* [M2]

In Example (3), *interesting* is an instance of attitude markers, reflecting the authors' affective stance towards the propositional meaning covered.

Regarding self-mentions, the highest percentage was identified in Move 3 (68.9%), suggesting that forestry authors tend to explicitly emphasize their original contribution to the field of research through linguistic expressions such as *we*, *our*, and *us* in presenting their study objectives. The present findings align with those from Swales' (1990) study in that among the three Introduction moves, Move 1 and Move 2 displayed a relatively impersonal nature in contrast to Move 3, which showed a more personal nature. In the current study, the move with the lowest level of self-mentions was Move 2, indicating the impersonal nature of argumentations regarding the justification of gaps in forestry.

(4) *In **our** analysis, **we** aim at the following questions.* [M3]

Example (4) substantiates two cases of self-mentions, a plural inclusive pronoun *our* and *we*. In this study, all instances of self-mentions were exclusively plural, and no singular pronouns were found. This pattern could reflect the pluralistic nature of this discipline, similar to the hard sciences, where research is predominantly conducted by teams of researchers. Moreover, it could be suggested that forestry authors tend to marketize their research in a more personal manner, not merely relying on passive structures.

4.2 Stance markers in the Methods sections

Table 4 present the frequency and distribution of stance markers in the Methods sections.

Move	Hedges			Boosters			Attitude markers			Self-mentions		
	RN	%	Freq per 1,000 words	RN	%	Freq per 1,000 words	RN	%	Freq per 1,000 words	RN	%	Freq per 1,000 words
M 4	67	12.4	1.04	22	17.1	0.34	9	18.1	0.14	37	9.2	0.57
M 5	194	36.5	3.03	47	42.9	0.73	17	29.09	0.26	141	35.3	22.05
M 6	9	1.0	0.14	1	0.78	0.01	0	0	0	7	1.7	0.10
M 7	137	28.0	2.14	36	28.1	0.56	22	25.4	0.34	84	21.0	1.31
M 8	84	21.8	1.31	22	17.1	0.34	15	25.4	0.23	130	32.5	2.03
Total	491	31.8	7.68	128	15.5	1.68	63	23.1	0.86	399	43.2	6.24

Table 4: Distribution of stance markers in the Methods sections

Exploring the Methods sections, the analyzed data revealed that self-mentions (43.2%), specifically plural pronouns *we*, *our*, and *us*, were the dominant stance markers in this section.

Indeed, scholars in this field exhibited a tendency towards projecting a pluralistic research identity and moving away from old archetypes of impersonality by reducing application of passive structures and claiming their contribution in this section. The second most highly employed stance markers, overall, were hedges (31.8%) which outnumbered boosters (15.5%). Analyzing each move distinctly, Move 5, *Describing experimental procedures*, the pivotal move in this section, was reported to include the highest percentage of boosters (42.9%) compared to hedges (36.5%). The analysis revealed that forestry researchers appear to be assertive and confident in presenting their arguments regarding the experimental procedures applied in their study. Having extracted the study corpus from data-driven empirical articles, methods play a pivotal role in research articles and are expected to be presented in a confident, hyperbolic manner rather than tentatively, to emphasize and marketize the contribution of the employed methods. The lowest percentage of boosters was documented in Move 6, *Detailing equipment* (0.78%), compared to hedges (1.06%), indicating that forestry authors prefer to be more cautious and less assertive in detailing the employed equipment in their study. Move 8, *Describing statistical procedures*, included the highest proportion of hedges (21.8%), compared to boosters (17.1%), indicating that forestry authors prefer to report the applied statistical procedures cautiously, leaving room for alternative options. Since a problem can be addressed through various approaches, a level of modesty in employing the statistical procedures seems rational in forestry as an applied hard science.

(5) *...which are usually* ***estimated*** *with a maximum likelihood procedure.* (R) [M7]

(6) *...also distinguished the zones where there were* ***clear*** *signs of (repeated) tractor movement.* [M5]

In the abovementioned excerpts, Example (5) represents hedges, while Example (6) represents boosters, both conveying functional or metadiscoursal meaning.

Regarding attitude markers, as displayed in Table 4, the highest percentage of such features was identified in Move 5 (29.09%). This suggests that forestry researchers are more inclined to express their attitude and knowledge ethics in the description of experimental procedures. In other words, they prefer to emphasize information on the employed methods in a more personal and less objective voice. The least number of attitude markers was employed in Move 4, *Describing materials* (9%). A fall in attitude markers or affect indicates more objective and less personal stance (Hyland & Jiang 2018).

(7) *...where the population was* ***expected*** *to increase in 2050 was set to the same value.* [M7]

In Example (7), *expected* is considered an example of a stance marker with the functional meaning of 'likely to happen'.

As regards self-mentions, in all the Methods moves, plural inclusive pronouns *we*, *us* and *our* were predominant. The highest percentage of self-mentions was indexed in Move 5 (35.3%). This record indicates the importance of authority on the part of forestry writers to claim their position in presenting the experimental procedures. By applying self-mention pronouns, forestry writers tended to further promote their contribution as researchers. Although personal pronouns that help writers describe their methodology and procedures may seem unlikely tools for self-promotion, *I* and *we* can stress the writers' procedural innovation and highlight how they are rigorous in their quest for sound data (Kuo 1999). The minimum number of self-mentions was realized in Move 6 (1.75%). The low frequency of self-mentions in this move indicates its impersonal nature.

(8) *To test* ***our*** *hypotheses, species were chosen based on the species' abundance along the typical local topographic gradient found at the EEST.* (R) [M4]

In Example (8), *our* is an instance of self-mentions, highlighting the authors' presence and epistemic stance in this sentence.

4.3 Stance markers in the Results sections

Table 5 demonstrates the frequency and distribution of stance markers in the Results sections.

Move	Hedges			Boosters			Attitude markers			Self-mentions		
	RN	%	Freq per 1,000 words	RN	%	Freq per 1,000 words	RN	%	Freq per 1,000 words	RN	%	Freq per 1,000 words
M 9	67	9.3	0.55	9	4.7	0.24	2	6.4	0.05	9	16.3	0.24
M 10	194	1.8	0.11	4	2.1	0.11	1	3.2	0.02	5	9.0	0.13
M 11	9	45.7	2.71	144	75.7	3.99	15	48.0	0.41	32	58.1	0.88
M 12	137	42.9	2.55	33	17.3	0.91	13	41.9	0.05	9	16.3	0.24
Total	214	13.8	5.93	190	23.1	5.27	31	11.3	0.86	55	5.9	1.52

Table 5: Distribution of stance markers in the Results sections

In the Results sections, generally, the most prototypical stance markers were boosters (23.1%). This can indicate the significance of reporting empirical data in a more assertive, confident manner in this field, a hard science. As reported, Move 11, *Stating results*, has the highest frequency of boosters (75.7%), compared to hedges (45.7%). It appears that forestry scholars prefer to uphold commitment in presenting their findings. This pattern could be attributed to the nature of forestry as a hard science, emphasizing the tendency to accurately report data-driven findings from experiments. Emphasizing the importance of reporting findings from empirical studies precisely, Boginskaya (2022) points out that since engineering writers deal with numerical data, they are more inclined to create a more precise depiction in their writings. However, in Move 12, *Stating comments on results*, boosters occurred at a notably lower level (17.3%) than hedges (42.9%), suggesting that research writers in this field have a tendency to comment on their findings in a more conservative, less hyperbolic manner by applying more softeners. Finally, Move 9, *Stating procedures*, incorporated the lowest hits of both hedges (0.11%) and boosters (2.1%), with the latter dominating. Move 9 rephrases the research objectives, hypotheses of the study and experimental methodology. The highest percentage of boosters in this move indicates that forestry authors tend to refer to the applied methodology and procedures in their study in a less objective, more personal and assertive manner.

(9) *Therefore, the difference between two imagery sources seemed to be* ***about*** *4.6% in tree canopy cover estimates.* [M11]

(10) *While inter-specific variation was* ***found*** *to explain variance of recovery, resilience and relative resilience in 2000 as well as of resistance and resilience 2007.* [M12]

In Example (9) *about* has a functional meaning and is considered as an instance of hedges, meaning 'approximately'. In Example (10), *found* is considered a booster, having the metadiscoursal meaning of 'proved'.

In this study, the frequency of attitude markers in the Results sections was also recorded. Attitude markers peaked in Move 11 (48%) that details results, suggesting that forestry scholars tend to report their findings while they make use of expressions conveying expectedness and knowledge deontics. This finding could be due to the nature of the study, as quantitative empirical studies report on data from experiments which is supposed to comment on the expectedness of the results through attitude (Hu & Cao 2015). The lowest percentage of attitude markers was documented in Move 10, *Justifying procedures or methodology* (1.3%). This move justifies the employed methodology in the study, ensuring readers of the procedural validity. The low application of attitude markers in this move suggests that scholars in this field typically refer to the background of the employed methods in an uninvolving, less personal and more objective manner. Example 11 represents a case of attitude markers.

(11) *The figure also shows that the relationship was* ***remarkably*** *similar for all of the five years.* [M11]

Concerning self-mentions, all the indexed cases were plural inclusive pronouns *we*, *our*, and *us* in this section, peaking in Move 11 (58.1%). The highest number of self-mentions in this move indicates that forestry writers seek highlighting their authorial presence in reporting the results. Hyland (2005) contends that the existence or nonexistence of explicit authorial reference is usually a writer's conscious choice as to whether to adopt a personal stance and an authorial persona in the research. The lowest percentage of self-mentions was realized in Move 10 (9.09%). This move unfolds the rationale behind the applied method in the study through evaluation of the positive results previously obtained. Indeed, forestry authors scarcely used a self-promotional pronoun, adopting an impersonal stance when commenting on the applicability of their methods by referring to previous studies.

(12) *As* ***we*** *discussed in the previous section, Tsmax was reduced around the urban area in CTL.* [M11]

In Example (12), *we* reflects a case of self-mentions, establishing the author's contribution and epistemic stance in the research conducted.

4.4 Stance markers in the Discussion sections

Table 6 presents information on the frequency and distribution of stance markers in the Discussion sections of forestry research articles.

Move	Hedges			Boosters			Attitude markers			Self-mentions		
	RN	%	Freq per 1,000 words	RN	%	Freq per 1,000 words	RN	%	Freq per 1,000 words	RN	%	Freq per 1,000 words
M 13	38	6.4	0.63	14	4.3	0.23	9	8.5	0.15	15	4.1	0.25
M 14	488	83.4	8.19	377	89.0	6.32	86	81.0	1.44	301	82.4	5.05
M 15	45	7.6	0.75	20	5.9	0.33	7	6.6	0.11	39	10.6	0.65
M 16	14	2.3	0.23	1	0.39	0.01	3	2.8	0.05	10	2.7	0.16
Total	585	37.9	9.82	412	50.0	6.91	105	38.0	1.99	365	39.5	6.12

Table 6: Distribution of stance markers in the Discussion sections

In the Discussion sections, overall, boosters (50.1%) were found to dominate hedges (37.9%). Forestry writers, as applied scientists, seem to be more inclined to constrain the diversity of opinions, projecting less objective and more personal stance when marking their involvement with findings interpretations and evaluations. The revealed pattern in Discussions contrasts with Introductions, where hedges dominated. Swales (1990) posits that Introductions and Discussions hold a mirroring rhetorical pattern to each other, with the former unfolding from general to specific information and the latter moving from specific to general information. It can be suggested that forestry writers are more cautious and less personal in Introductions while they tend to argue in a less objective and more personal manner in Discussions to establish their arguments. Similarly, Ghahremani and Biria (2017) found that medical science writers applied more boosters in the Discussion section of their papers. Interestingly, the move incorporating both hedges and boosters densely is Move 14, *Consolidating results*, which is considered by many as the core move in this section. Nevertheless, boosters (89%) dominated hedges (83.1%) in this move. Move 14, which is pivotal in Discussions, unifies findings through recounting the methodology, presenting particular findings, pointing to literature, referring to differences in findings, voicing claims or generalizations, and mentioning the value of the research. It appears that forestry authors feel confident in interpreting their findings by applying a high level of boosters to compare, contrast, and emphasize their findings, using a hyperbolic voice to marketize and foreground their arguments. As for Move 16, *Suggestions for further research*, it included the least number of hedges and boosters, with the former (2.3%) dominating the latter (0.39%). This pattern suggests that scholars in this field prefer to be more conservative and cautious than straightforward and assertive in offering suggestions for further research.

(13) *...and the* ***possible*** *effects of other environmental factors should also be taken into consideration.* [M16]

(14) *Across sites, Scots pine is* ***known*** *to adjust its hydraulic system to the specific moisture conditions.* [M14]

In Example (13), *possible* is considered a stance marker, meaning ‘likely’ or ‘probable’. In Example (14), *known* has a functional meaning and substantiates the application of boosters or hyperbolic language in this section.

In the present study, the frequency and distribution of attitude markers in each move of Discussions were also explored. Forestry writers tended to apply the highest percentage of attitude markers in Move 14 (81.90%) to consolidate their findings through comparing and contrasting them with those from other studies. As expected, attitude markers (81.90%) together with boosters (89%) exhibited the highest percentages in this move, as the most explicit indicators of the writer’s authorial positioning (Hyland & Jiang 2018). With career pressures on academics to publish and more than three million new peer-reviewed articles appearing each year (Johnson et al. 2018), there are even more incentives to rhetorically promote results and professional visibility on the writers’ side. Move 16 included the lowest percentage (2.8%) of attitude markers, suggesting that forestry writers are reluctant to incorporate their personal judgments, acting more objectively in offering recommendations for further research in the field.

(15) *Furthermore, even with long gradients, a considerable fraction of species having truncated realized response curves is* ***expected*** *to be found.* (R) [M14]

In Example (15), *expected* has the functional meaning ‘likely to happen’ and is considered as an instance of attitude markers.

Regarding self-mentions, in this section there were no cases of *singular* or *the other* self-mentions. They displayed the highest percentage in Move 14 (82.4%), followed by a huge gap in Move 15 (10.6%), then in Move 13 (4.1%), and finally in Move 16 (2.7%). The high percentage of plural self-mention pronouns in Move 14 could reflect a sense of responsibility on forestry authors’ part to declare their active contribution in consolidating the findings. It suggests that more than one person has endorsed the accuracy, quality and meaning of the results. Harwood (2005) proposed that the use of pronouns *I* and *we* indicates that the author/s deserve to be noticed as active players in the discourse community. The lowest percentage of self-mentions in Move 16 implies that forestry authors prefer an impersonal stance in offering recommendations for further research.

(16) ***We** suggest that future studies explore the role of surviving trees and dead trunks in maintaining bird populations in damaged forest.* [M16]

In Example (16), *we* is considered as an example of a self-mention, highlighting the authors' role in suggesting recommendations for future studies. We and our can also be considered as engagement markers, depending on the context.

4.5 Stance markers in research articles

Table 7 shows the distribution patterns of stance markers in the forestry research articles, calculated per 1,000 words.

Stance markers	Hedges	Boosters	Attitude markers	Self-mentions
Number of tokens	1,541	822	272	922
Frequency per 1,000 words	7.85	4.19	1.38	4.19

Table 7: Overall frequency of stance markers in research articles

According to Table 7, in terms of the number of tokens, overall, hedges (1,541) and self-mentions (922) are the two highest frequency indexed stance markers in the forestry corpus. The detailed frequency account of each feature is reported in Table 8.

Stance markers	Introduction		Methods		Results		Discussions		IMRD	
	RN	%	RN	%	RN	%	RN	%	RN	%
Hedges	251	16.28	491	31.86	214	13.80	585	37.96	1,541	43.32
Boosters	92	11.19	128	15.57	190	23.11	412	50.12	822	23.10
Attitude markers	73	26.83	63	23.16	31	11.39	105	38.60	272	7.64
Self-Mentions	103	11.17	399	43.27	55	5.96	365	39.58	922	25.92

Table 8: Frequency and percentage of stance markers in each section

Hedges (43.32%) were reported as the highest indexed stance markers, followed by self-mentions (25.92%), boosters (23.1%), and finally attitude markers (7.64%). The prominence of hedges (43.32%) in the forestry corpus can signal a diverging pattern from the marketing or pseudo-exciting language marked by boosters and attitude markers. Nonetheless, hyping, marketing discourse is observed in certain sections such as the Results and Discussion. By applying more hedges than boosters in the corpus, forestry writers generally seem to adopt a flexible and modest stance, providing space for readers for alternative interpretations, signaling more objective, metric-based, calculated stance. Hyland and Jiang (2018), studying sociology, applied linguistics, biology and electrical engineering, observed a comparatively notable rise of hedges and self-mentions in the hard-science fields. Muangsamai (2018) also analyzed research papers in health and medical sciences and found that hedges were the key linguistic features. Examining 800 impact studies from the academic spectrum disciplines to explore the rhetorical presentation of impact, Hyland and Jiang (2023) found that chemistry and physics contained the most hyping or boosting items with fewer hedges as they moved along the hard/pure - soft/ applied continuum. Another line of research, however, has shown an opposite trend in the application of stance markers in hard knowledge disciplines. For instance, Khedri, (2014) found that hedges as a means of masking writers' part in explaining data, weighing up arguments, and making reference to audiences, were limitedly applied in hard science disciplines. Similarly, in a diachronic study of biomedical research articles over a 50-year period, Poole et al. (2019) found that boosters as epistemic stance markers pointing to greater degrees of certainty increased, while hedges as indicators of doubt and uncertainty decreased.

The second-highest frequency stance markers in forestry research articles were self-mentions (25.92%), exclusively the first-person plural pronouns *we*, *us* and possessive determiners *our*, or the category of *others* (*this study*, *the present study*, *the current study*). This finding aligns with a cross-disciplinary study by Khedri et al. (2015), where plural pronouns *we*, *us*, *our* dominated, attributed to the collaborative nature of research practices in the hard sciences. Hyland (2005) suggests that in hard-science disciplines, emphasis is placed on research practices and methodological procedures rather than overtly announcing findings through singular self-mention pronouns. In contrast, writers in the soft sciences often need to reinforce their discourse more overtly through singular self-referential language to claim authority since their research outcomes might not be solely based on confirmed quantitative research methods. Indeed, forestry writers have chosen to assert their contribution in their texts through the use of self-mentions, promoting their research and asserting their authorial presence. In the attention economy, first-person pronouns, alongside hypes, are considered key components of a comprehensive rhetorical toolkit to underscore personal impact and assert contribution within the broader discourse community (Hyland 2023). The occurrence of self-mentions, as the second-highest frequency stance markers, further implies that forestry texts have shifted away from the detached, formal and impersonal style of writing, towards more informal and involving discourse. Several studies have revealed that academic discourse is not frozen and faceless anymore, but rather it has become more informal and impersonal (Bazerman 1988, Salager-Meyer 1994). Hyland and Jiang (2017) observed that academic texts in hard-science domains have become less formal, compared to soft-science domains, with higher cases of self-mentions and relaxed conventions.

Self-mentions were most prevalent in the Methods sections (43.2%), reflecting the collaborative nature inherent in this section. Hyland and Jiang (2017) conducted a study across four disciplines encompassing both the hard (biology, engineering) and the soft sciences (applied linguistics, sociology) over a span of 50 years. Their findings indicated a slight increase in informality features in both fields, with first-person pronouns serving as the primary marker. However, the hard sciences experienced a more pronounced increase in informality compared to the soft sciences. Habibi and Hyland (2019) acknowledged that academic writing is not entirely devoid of personal engagement. Writers establish credibility for their prose by projecting an identity bolstered through individual authority, demonstrating confidence in their assessments and commitments.

5 Conclusion

This study has sought to identify the distribution of stance markers across the rhetorical moves of forestry research articles. One notable finding is that hedges and self-mentions prevailed throughout the forestry corpus, while attitude markers and boosters were less commonly employed. Hedges linguistically manifest flexibility, tentativeness, and respecting the readers' interpretations, serving as a prudent choice to indicate provisional claims subject to potential objections or revisions. The higher application of hedges compared to boosters in forestry as a hard science, could reflect a discernible shift in commitment patterns, from more personal beliefs towards more objective judgements in this discipline. In this study, forestry authors prioritized projecting a flexible and approachable persona over the conventional use of boosters, which has been associated with a more formal and "stuffy orthodoxy" (Hyland & Jiang 2017: 41). Boosters and attitude markers used to be considered as the most obvious indicators of exposing writers' authorial positioning, conveying commitments and affective evaluations in academic texts. However, more recently, the substantial fall in boosters and attitude markers is regarded as an important shift from commitments expressed as personal beliefs towards those which seek to convey more objective, data-supported assurances by Hyland and Jiang (2018).

In regard to first-person pronouns, they were documented as the second-highest frequency stance markers in the current corpus, indicating a shift in formality and impersonality patterns in forestry research articles. Positivism or empiricism has traditionally been associated with the application of passive structures that marked impersonality to reinforce the credibility of the writer (Ryan 2006). However, forestry authors seem to have shed the old constraints and adopted a more personal and relaxed persona in writing research papers. To gain visibility in the contemporary attention economy era, to promote their research outcomes, researchers are incorporating self-mentions, rather than passive structures, more frequently in their research in recent years (Hyland 2023).

Analyzing each section individually, hedges and attitude markers emerged as the predominant stance markers in the Introductions. In the Methods section, hedges and self-mentions were prominent. Boosters and attitude markers dominated in the Results. Moving to the Discussions, boosters and self-mentions prevailed. Overall, forestry writers displayed a tendency to apply hedges in the Introductions and Methods, while opting for boosting language to emphasize their research outcomes in the Results, and to project certainty and assertiveness and to promote their arguments in the Discussions. The widespread use of such hyping practices in scientific publications may undermine objectivity, leading to sensationalism and a sense of pseudo-authenticity or manufactured excitement (Scott & Jones 2017). As writers exaggerate significance of the findings, they question the impartiality of science, promote skepticism and detach readers (Horgan 2015), turning science into a "theatrical business" (Wheatley 2014: 14). A higher proportion of self-mentions in the Methods and Discussions indicates that authors in this field tend to emphasize their role as active participants in the former and promote their involvement as enthusiastic contributors in their arguments in the latter, respectively. The pervasive use of attitude markers in Introductions indicates the pivotal role of affective voice in persuading readers of the importance of the study topic, gap, and objectives. In the Results sections, the prevalence of attitude markers may convey reinforcing the persuasiveness of the presented findings in a more involving, personal tone. Indeed, studies of this nature bring to attention the value of factors beyond content that contribute to writing persuasive research articles, highlighting the significant role of predicting and addressing readers' evaluations of the text. Interpreting textual patterns in a functional manner, by analyzing metadiscoursal features in each move, is likely to provide insights for making informed rhetorical decisions while composing each communicative unit of a research article. This approach aids not only advanced-level and non-native writers but also novice and native writers in crafting persuasive and professional academic texts.

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REVIEWS

Plo-Alastrué, R. and Corona, I. (eds) (2023) *Digital Scientific Communication: Identity and Visibility in Research Dissemination*. Palgrave Macmillan. 330 pp.

The collective volume *Digital Scientific Communication: Identity and Visibility in Research Dissemination* addresses the fundamental aspects of knowledge dissemination in the digital and internet era. As Marina Bondi argues in "Prologue: State of the Art of Research Dissemination", the current digital discourse is characterised by multimodality, hypertextuality, interactivity and anonymity (p. vi). Digital affordances have led to multiplying the modes and channels of science communication. The major challenges for researchers in the context of digital knowledge dissemination are identity and competition for visibility, along with the need for self-promotion (p. v). Academic publishing has developed into a massive industry, in which knowledge is, on the one hand, marketised and competitive but, on the other, digital dissemination has made it more public, democratic and inclusive.

The volume under review was edited by Ramón Plo-Alastrué and Isabel Corona of Universidad de Zaragoza, Spain, and published by Palgrave Macmillan of Springer Nature Switzerland in 2023. The texts were originally presented at the InterGedi International Conference in Zaragoza in December 2021 with the goal of interpreting new professional practices in scientific digital communication, its media and multimodal genres. The contributors include researchers primarily from Spanish universities (mostly Universitat Jaume I and Universidad de Zaragoza), but also from Italian, French, Danish, Czech, Tunisian and Chinese (Hong Kong) ones. The book is divided into five parts, each consisting of several chapters devoted to different aspects of digitally-mediated scientific and scholarly research. The exceptions to this rule are the introductory Part I (An Introduction to Scientific Research Communication Through Digital Media) and the summarising, concluding and predictive Part V (Scientific Digital Communication for Research Dissemination: What Lies Ahead?), each of which contains a single chapter.

In Part I, after Bondi's Prologue, Daniel Pascual, Ramón Plo-Alastrué and Isabel Corona in their chapter "Digital Scholarly Practices in Scientific Communication: Paths and Goals in Research Dissemination" outline the approaches and practices of scientific communication in the internet era. As the digital medium is based on the principles of collaboration, accessibility and information sharing, researchers and their institutions are pushed towards commodifying information and marketising science, which is, however, outweighed by the benefits of democratisation of knowledge and public participation (p. 4). The authors outline the history of thinking beyond science communication, from the Deficit Model of the 1960s to the Dialogic Model in the 2000s, bringing a two-way dialogue between researchers and citizens, to the current Participation Model (pp. 5-6). This approach is related to concepts such as 'Open Science' and 'Citizen Space' and reinforced by the Open Access movement. Digital research dissemination has brought its own genres, such as blogs and video abstracts, and changed the nature of texts into non-linear, "inherently interactive and multimodal" (p. 10). Also, the researcher identity has been redefined, becoming more fluid and multifaceted. Last but not least, heterogeneous audience, digital genres and internet platforms have generated a need for self-promotion and attaining extensive visibility (pp. 13-14).

The focus of Part II (Scientific Discourse and Professional Practices) is the effect of digital knowledge dissemination on scientific content. Ruth Breeze in the chapter "'Not One of Our Experts.' Knowledge Claims and Group Affiliations in Online Discussions of the COVID-19 Vaccine" looks into the interactional genre of online 'reader comments'. Her study of the comments on articles about the COVID-19 vaccines in *Mail Online* observes a clear division of commenters into pro-vaxxers and anti-vaxxers, with different discursive strategies, arguments and ways of constructing their identities. While pro-vaccine commenters built their arguments on expert knowledge and objectiveness, anti-vaxxers preferred a more subjective stance, personal experience, humour and irony. They used affordances of digital media and the genre of comments to erode expert knowledge, which manifests the unfortunate potential of misusing digital dissemination for the sake of ideologically biased confrontation.

Carmen Sancho-Guinda in her chapter "Utmost Hybridity: Promotional Trends in Technology Disclosures" deals with a little-known genre of technology disclosures. She uses the approach of genre analysis and by looking at the genre from the textual, semiotic and verbal perspectives she identifies hybridity as their main property, along with affective promotionality, building institutional identity and multimodality. Bhatia's (2004) and Swales's (2004) four genre colonies clearly underlie the genre of technology disclosures (p. 59), but this evolving genre blends different purposes, semiotic resources, genre properties and audiences (p. 61). Also, the question of verification of information, similar to that which peer-reviewed papers are subjected to, is pending, as the institutional influence and promotional function are too pervasive.

Fatma Benelhadj also returns to the COVID-19 pandemic discourse, specifically to medical discourse articles and their popular variants. In "Dissemination of Knowledge During the COVID-19 Pandemic: A Conceptual Metaphor Analysis of Research and Popular Articles", Benelhadj analyses metaphors as a tool for recontextualisation of science for the purposes of popularisation. She draws on Halliday's (1994) language metafunctions (textual, ideational and interpersonal) and on the concepts of source and target domains and identifies the types of metaphors used in these plans in both types of articles. She points out that metaphors can help to constitute identities of both authors and patients, contribute to cohesion, facilitate comprehension and increase credibility (p. 97).

Giuliana Diani and Maria Freddi in the chapter "Authorial Stance and Identity Building in Weblogs by Law Scholars and Scientists" delve into the genre of academic blogs in order to establish how authors build their identity through research dissemination. Using corpus and discourse analysis when comparing scientist blogs and law blogs ('blawgs'), the authors observe more explicit personality, affection and self-mention in the former texts, and rather impersonal expression and focus on the content in law blogs. The chapter contains a detailed analysis of the use of verbs (emotive, cognitive, perceptive and desidaritive, verbs of saying and doing) (pp. 118-121) with first person subjects, which clearly differentiates both corpora.

The central theme of Part III (Visibility and Dissemination in Scientific Research) are practices of the current research, particularly the ways of attaining visibility, construction of digital identity, and dissemination and validation of knowledge. Ana Bocanegra-Valle draws attention to the practices of publishers of so-called predatory journals ("Predatory Journals: A Potential Threat to the Dissemination of Open Access Knowledge"). By identifying typical features of predatory publishers in three thematic areas (journal information, boastful language and journal quality), further divided into several categories, she establishes strategies and deceptive persuasive techniques used to gain contributors. She warns against negative consequences of publishing in predatory journals for both science and researchers (pp. 143-144). Her recommendation is to avoid predatory journals from the start by checking their websites, previous contributors, payment policies, existence of peer review and understanding how their engagement strategies work (p. 145).

Jan Engberg's chapter "Between Infotainment and Citizen Science: Degrees of Intended Non-expert Participation Through Knowledge Communication" addresses the concepts associated with recontextualisation of scientific communication, namely popularisation, democratisation and dissemination. Applying the Knowledge Communication Approach, which focuses on communication of specialised knowledge and overcoming knowledge asymmetries (p. 152), Engberg distinguishes the degree of 'participatory ambition' between the expert (sender) and the layperson (receiver). Based on this, he proposes a continuum containing stages termed infotainment, dissemination, popularisation, pedagogic communication and citizen science (pp. 165-166). Engberg explains 'citizen science' as an active involvement of citizens in science (pp. 156-159) and as an example of communicative action, as proposed by Habermas (1981).

The next two chapters revolve around the genre of online videos. Olga Dontcheva-Navratilova in "Video Abstracts for Increasing Researcher Visibility" studies researcher-produced video abstracts in the discipline of pure mathematics. Comparison with their monomodal printed equivalents reveals differences in communication strategies, rhetorical structures and modes of communication. She distinguishes three types of video abstracts, namely conferential (with a subtype called 'personalised'), lecturing and conversational. The lecturing abstract displays low recontextualisation, but especially the conversational type is highly interactional and attractive for viewers, whereas the conferential personalised video abstract employs the most self-mention. Video abstracts vary in form and functions, but they undoubtedly increase researcher visibility and comprehension of the subject matter.

Noelia Ruiz-Madrid and Julia Valeiras-Jurado look into popular science online videos in the fields of anthropology and physics. Their chapter "Reconceptualisation of Genre(s) in Scholarly and Scientific Digital Practices: A Look at Multimodal Online Genres for the Dissemination of Science" examines how different modes (e.g. gestures, visual and sound effects, images, text) help to achieve functional goals, categorised as tailoring information, engaging the audience and building credibility.

Part IV (Engaging the Audience Through Science Bites) focuses on the factor of brevity, necessitated by the vast amount of information on the web, and by consequently different needs of internet consumers, who require quick and concise information. It examines the emerging genre of three-minute presentations, representing so-called 'science bites', an economical scientific communication practice. Vicent Beltrán-Palanques ("Three-Minute Thesis Presentations: Engaging the Audience Through Multimodal Resources") approaches three-minute presentations from the pedagogical viewpoint, called forth by the need for instructing doctoral students how to use this multimodal format effectively. By analysing the move structure and interpersonal strategies in student presentations, Beltrán-Palanques looks into the verbal, but also non-verbal strategies of viewer engagement.

Juan C. Palmer-Silveira and Miguel F. Ruiz-Garrido in the chapter "Introducing Science to the Public in 3-Minute Talks: Verbal and Non-verbal Engagement Strategies" analyse the genre within the international FameLab scientific talks competition, a metagenre similar to talent shows by virtue of its competitiveness and emphasis on appeal to the audience. Verbal engagement strategies are identified, such as directives, hearer mentions, personalisation, visual and aural impact (pp. 258-263), but also non-verbal ones, including body language and external resources allowed on the stage. The winners are chosen on the basis of the content, clarity and charisma (p. 254), a criterion which deserves further definition. The external resources used in pre-recorded videos (replacing live talks in the COVID-19 years) are illustrated by sets of screenshots.

The chapter "Research Visibility and Speaker Ethos: A Comparative Study of Researcher Identity in 3MT Presentations and Research Group Videos" by Elizabeth Rowley-Jolivet and Shirley Carter-Thomas compares three-minute thesis presentations (3MTs) with research group videos (RGVs). A corpus composed of videos from various disciplines enables a comprehensive study of the modes characteristic of the spoken medium, used by individuals vs groups, novice vs experienced researchers, in videos produced by researchers vs edited professionally. The corpus linguistic analysis reveals a variety of modal means within the genre, resulting from different purposes and contexts of their production and use.

Part V features a chapter by Vijay K. Bhatia ("Challenges and Future Directions in Digitally Mediated Research Publication and Dissemination", which summarises and evaluates both the positive and negative aspects of digital research dissemination. While the collaborative and participative nature of digital communication is certainly beneficial, the need for visibility brings with it negative phenomena, such as hasty publication and undermining the quality of research by massive availability of scientifically inferior and non-validated research papers. Bhatia calls for greater accountability of social media in order to eliminate scientific disinformation and misinformation mediated by them.

The book represents a valuable and inspiring contribution to the contemporary and ongoing development in scientific communication and knowledge dissemination, which has a profound impact on availability of scientific knowledge, identity of researchers, research dissemination practices, modes and visibility of research and many more. However, Bhatia and other authors draw attention to ethically questionable behaviour, such as rapid and easy publication (skipping the verification stages), practices of predatory publishers and misinformation on science spread by social media. The phenomena of open science and citizen science, enabled by the democratic, participative and collaborative nature of digital knowledge dissemination, have a far-reaching and fascinating impact on science, as evidenced by the richness of the topics, concepts and relations covered in the reviewed book.

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