

Baiba Egle

**THE IMPACT OF ACADEMIC WRITING
ON A SCIENTIST'S CAREER:
LOCAL AND GLOBAL PERSPECTIVES**

Summary of the Doctoral Thesis



RIGA TECHNICAL UNIVERSITY

Liepāja Academy
Centre for Humanities and Arts

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**DOCTORAL THESIS PROPOSED TO RIGA TECHNICAL UNIVERSITY
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SCIENCE**

To be granted the scientific degree of Doctor of Science (PhD), the present Doctoral Thesis has been submitted for defence at the open meeting of RTU Promotion Council on 5 June 2026 at the Centre for Humanities and Arts of RTU Liepāja Academy, Lielā iela 14, Room 227, Liepāja.

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DECLARATION OF ACADEMIC INTEGRITY

I hereby declare that the Doctoral Thesis submitted for review to Riga Technical University for promotion to the scientific degree of Doctor of Science (PhD) is my own. I confirm that this Doctoral Thesis has not been submitted to any other university for promotion to a scientific degree.

Baiba Egle(signature)

Date:

The Doctoral Thesis has been written in Latvian. It consists of an Introduction, 2 chapters, Conclusions, ten figures, the total number of pages is 71, not including appendices. The Bibliography contains 91 titles.

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Abstract

The well-being of society largely depends on education policy, which must ensure continuous development and the renewal of the part of society involved in research. The situation in Latvia cannot be considered successful, as Latvian universities have not succeeded in entering the top 500 in the *QS World University Rankings*. There are also long-term negative consequences for the age structure of personnel involved in science. One possible reason could be the insufficient appreciation of the linguistic foundations of academic writing and scientific communication in the study process and among scientists.

In recent years, several projects dedicated to the language of science have been implemented, in which current research topics and deficiencies that are important to address have been identified: two projects with international participation, one international project, one project in fundamental and applied sciences, and two institutional (Ventspils University of Applied Sciences) projects. The projects resulted in 15 co-authored publications, including three chapters in a collective monograph, 10 individual and joint conference presentations, and one popular-science co-publication on topical issues in Latvian scientific communication.

To summarise the experience and knowledge gained during the implementation of the projects and to contribute to the improvement of the research situation, the goal was set to show how the interaction of normative conditions and globalisation processes affects the style of scientific language and shapes academic writing traditions at the level of text, phrases, and words.

Since the formation of scientific language style and support for academic writing is a complex process, various methods were used to achieve the goal: (1) content analysis, which is descriptive in nature and mainly concerns the review of regulatory requirements; (2) qualitative research method – text analysis – mainly the analysis of text structure; (3) quantitative methods, including the *AntConc* concordance software for corpus linguistics analysis and the creation of a scientific language database; (4) argumentative zoning – analysis of the connection between text structure and argumentation; (5) Ken Hyland's metadiscourse marker analysis model; and (6) comparison – in contrastive analysis of translations.

The results of the pilot studies forming the basis of the Thesis confirm the previously made assumption that the style of scientific language is culturally specific, meaning it is influenced by cultural contacts and disciplinary cultures, which affect such elements of academic writing as the structure of a scientific article and metadiscourse markers, as well as practically oriented areas such as translation and acquisition of scientific language. Its formation takes place under the influence of regulatory conditions, global development trends, and disciplinary cultures. The main problems and, at the same time, current tasks for ensuring the quality of academic writing are outlined: integrating translation into the academic writing process, expanding databases for the

acquisition of scientific language, including equivalents in other languages, and establishing academic writing centers.

The summary of the dissertation comprises 70 pages. It contains 10 figures, and includes 91 cited sources.

1. GENERAL CHARACTERISTICS OF THE DOCTORAL THESIS

1.1. Introduction

This Doctoral Thesis comprises a collection of articles dedicated to a broad thematic range related to academic writing and the development of an academic career. Anyone belonging to the academic community is familiar with the old saying “publish or perish,” and this is not merely a rhetorical expression but a genuine situation for the majority of individuals who wish to advance their academic careers or at least maintain their current academic positions.

Currently, most universities in Latvia are striving to achieve higher positions in the *QS World University Rankings*, which includes more than 1 500 universities worldwide (QS, 2025). At present, none of the Latvian universities is ranked among the top 500: Riga Technical University is placed in the 761–770 range, University of Latvia in the 801–850 range, and Riga Stradins University in the 1000–1200 range (Labs of Latvia, 2024). The highest-rated university in the Baltic States is the University of Tartu, ranked 362nd. This ranking considers several criteria, and one of the most significant components, accounting for 50 % of the total score, is Research and Discovery, which consists of academic reputation (30 %) and citations per faculty (20 %) (QS, 2025).

The academic reputation of an institution is formed by the quality of its teaching and research. According to the regulatory acts governing the operation of Latvian universities, at least 65 % of all academic staff in a science university in Latvia must hold a doctoral degree (PhD) (Higher Education Law 3¹. (3). 5), and at least 50 % of elected academic staff in a university of applied sciences must hold a scientific degree (Higher Education Law 3.⁴(3) 2). At present, most Latvian universities meet this requirement; however, the proportion of doctoral degree holders within Latvia’s general population is one of the lowest both in the European Union (EU) and globally. On average, only 0.4 % of Latvian residents aged 25–64 hold a doctoral degree. The EU average is 1.1 %, while Slovenia leads with 3.8 %. According to data compiled by LV Portals, the only countries where the proportion of doctoral degree holders is lower than in Latvia are Russia (0.3 %), Brazil (0.2 %), and Mexico (0.08 %) (LV Portals, 2022).

Although recent data are lacking, it is unlikely that the number of doctoral degree holders has increased significantly since the compilation of data by the Ministry of Education and Science. An important factor in ensuring research and institutional excellence is the age structure of doctoral degree holders (both women and men). According to 2022 data, Latvia had 1 950 doctoral degree holders aged 25–44, 2 766 aged 44–64, and 3 049 aged over 65 (LV Portals, 2022). The smallest proportion is in the youngest age group, which may have significant consequences for the future. Although research careers tend to be long-term, the likelihood that individuals will continue to

actively participate in research at retirement age decreases, as some choose to retire and cease scientific activity. The percentage distribution of age groups is visualised in Fig. 1.1.

At the time of data collection, approximately 66.8 % of all doctoral degree holders were engaged in research, more than half – 54.4 % – worked in education, and 14.9 % provided professional, scientific, and technical services (LV Portals, 2022). Thus, the number of people who can ensure the excellence and reputation of Latvian research is limited. Currently, a reform of the doctoral study system is being implemented in Latvia, which will come into force in the near future. Furthermore, it should be noted that Latvia ranks last in the EU in terms of the number of new doctoral degree holders (Ministry of Education and Science, 2025). The new doctoral study structure could potentially increase the entry of new researchers into Latvia’s scientific community.

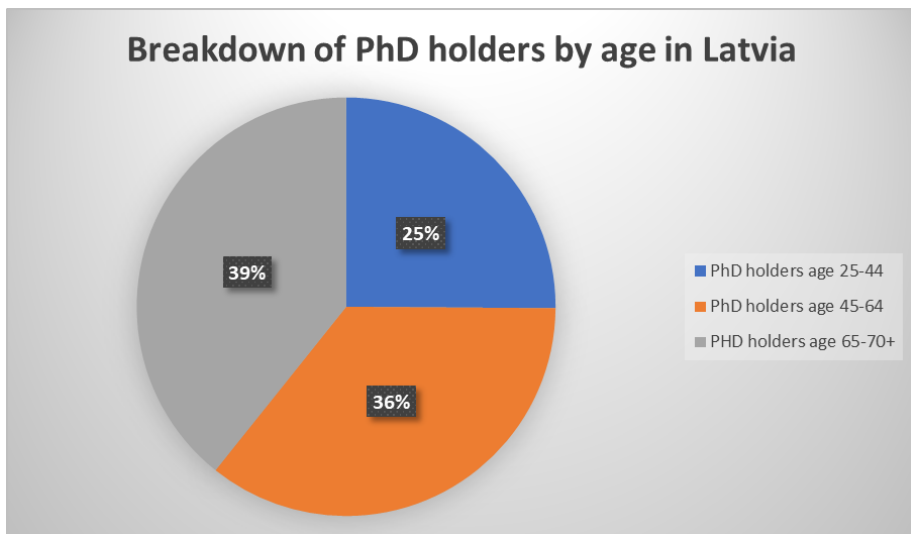


Fig. 1.1. Number of PhD holders in Latvia. Visualisation by Egle (LV Portals, 2022).

Both doctoral students and experienced researchers contribute to the overall scientific output of their institutions. Although some research outcomes can be demonstrated in practice (for instance, through prototype presentations) or presented in various science communication formats (such as university websites or blogs), the majority of research, regardless of field or researcher’s language, is published in written form – namely, in scientific articles. When a researcher is free to choose the language of publication, it is essential to be able to present one’s research findings in a structured, precise manner, and in accordance with the requirements of the relevant field, including stylistic and genre conventions.

Nevertheless, in Latvia, academic writing is still often regarded as a self-evident skill. There exists a significant body of unwritten, implicit knowledge (*tacit knowledge*) that underpins academic writing, and to date, very little research has been conducted on the characteristics of academic writing in Latvia. In today's globalised scientific environment, where research is no longer solely local but also international, it is crucial to pay attention to languages with a smaller number of users, including Latvian, by analysing how researchers write and providing opportunities to adapt their writing style to internationally accepted academic norms.

The publications compiled in this Doctoral Thesis cover the period from 2018 to 2025. The arrangement of the publications in the summary is thematic, outlining an interconnected thematic network in which various aspects of academic writing, although seemingly distinct, together form a coherent and scientifically significant whole.

The body of publications underlying this Doctoral Thesis includes articles in both Latvian and English, reflecting the thematic diversity relevant to both the Latvian and international scientific communities. Although a substantial proportion of the publications address aspects of the Latvian language, this should not be seen as a limitation but rather as an opportunity to gain insights into the academic writing traditions of a smaller language. The methodology employed in this study is also applicable to other languages for identifying their specific features of academic writing.

The research findings are summarised in chapters, each beginning with references to the main publications. The attached copies of the publications are organised according to the order in which they are described in this Thesis, rather than chronologically.¹ This approach has been chosen to ensure that the research results are directly linked to the summary and to enable the reader to locate the specific publication referenced at each point more efficiently.

1.2. Purpose, Tasks, and Methodology

Although some research on academic writing has been conducted in Latvia, to date, these studies have not been directly linked to the fact that writing is an integral part of academic career development, regardless of the field of research or professional ambitions. Even if an academic staff member does not plan to apply for a professorship, published research results are a crucial part of evaluation of their job performance. Depending on the academic staff member's status, such as being elected as a lecturer or to a higher position, they must fulfil certain job requirements over six years.

Several aspects are considered in performance evaluation, but publications are one of the most important indicators that can determine the future development of an academic career, including opportunities to secure research funding. The more significant and recognised works a researcher has published in their field, the greater the chance for a favourable expert assessment,

¹ For a chronological overview, see Section 1.6. Publications and Approval.

for example, when evaluating project applications. Therefore, this Thesis focuses on the role of academic writing in academic careers. Other duties of academic staff – such as ensuring the study process, involvement in institutional activities, and organising conferences – are not prioritised in this Thesis.

To ensure terminological consistency, the term *academic staff* (in English, *academic*) is used throughout this work in accordance with Article 27 of the Law on Higher Education Institutions, as it encompasses instructors and researchers of various levels. The findings of this research are also applicable to students as representatives of university personnel (see Article 26 of the Law on Higher Education Institutions), especially to students with teaching and research potential. The planning, development, submission, editing, and publishing of scientific texts is a complex process that involves much more than writing in the narrow sense. Given that this study focuses on writing as a central element of an academic career, it would be inaccurate to refer to a person who conducts research, compiles results, and prepares them according to complex academic conventions simply as a “writer” or similar (in English, *writer*).

The **purpose** of this work is to demonstrate how the interplay of regulatory requirements and globalisation processes influences the style of scientific language and shapes academic writing traditions at the levels of text, phrases, and words.

Research questions are grouped into two parts.

The first group is focused on cognition:

1. How are activities resulting in the writing of scientific texts regulated at the level of legislation in Latvia?
2. What is the relationship between academic writing and globalisation processes?
3. What are the possibilities for approaching an understanding of the specifics of the scientific language style used in Latvia?

These questions logically lead to the second group of questions:

1. What methods can be considered promising for the analysis of scientific texts?
2. What is the role of translating scientific texts, especially in the context of rapid AI development?
3. What utilised or untapped opportunities for supporting academic writing can electronic tools offer?

To achieve the purpose and answer the questions, the following **tasks** are set.

1. To outline the regulatory requirements in force in Latvia for academic career development, particularly regarding language choice and use.
2. To identify global challenges in language selection, linking them to previously discussed requirements.
3. To evaluate the methodology used in the pilot studies.

4. To analyse in detail the results of the publications included in this work, interrelating the topics examined from a multidimensional perspective, paying attention to issues of structure, metadiscourse, translation, and language learning support.
5. To describe the need for further research and current tasks in the field of academic writing in Latvia and in the Latvian language.

The research is based on a set of thematic publications – various thematically related pilot studies. So, depending on specific aims, different **methods** were used:

- 1) content analysis, which is descriptive in nature and mainly relates to the review of regulatory requirements;
- 2) qualitative research method – text analysis – mainly the analysis of text structure;
- 3) quantitative methods, including the *AntConc* concordance software for corpus linguistic analysis and the development of an electronic tool for scientific language;
- 4) argumentative zoning – in the analysis of the relationship between text structure and argumentation;
- 5) Ken Hyland's model for analysing metadiscourse markers;
- 6) comparison – in the contrastive analysis of translations.

A more detailed description of these methods is provided in the relevant chapters of the Thesis and in the attached publications.

1.3. Structure

The Doctoral Thesis is structured to highlight the interconnections between various aspects of the academic writing process. Although these aspects may initially seem unrelated and thematically distinct, within the context of academic writing, they form an indivisible and mutually dependent whole that characterises the professional activities of the contemporary researcher. Academic staff do not exist in an isolated research and study environment; they are part of a multi-layered system comprising not only the specific university or research institution, but also national regulatory acts, traditions and research methods prevalent in international research, as well as the necessary actions required to integrate into both Latvian and international academic circles – translation and the acquisition of academic language. The interrelationships of these aspects in the academic writing process are visualised in Fig. 1.2.



Fig. 1.2. Various aspects of academic writing (created by the author).

The first thematic section of the Doctoral Thesis, An overview of the **legal framework**, focuses on the current legal norms in Latvia that establish the prerequisites for academic career development. This topic has so far not been thoroughly analysed either in Latvian or in international scientific literature; therefore, a novel perspective is offered on the challenges of regulatory frameworks in academic activity, outlining the requirements for academic career development as set out in Latvian legislation. Publication metrics and career progression are often not perceived as directly related; however, in the Latvian context, there exists a legally defined correlation between indexed publications and h-index indicators and the opportunities for academic staff to apply for the positions of associate professor or professor. Although the requirements regarding the number of publications vary across scientific fields, quantitative and qualitative indicators of scientific articles remain among the most significant prerequisites for career advancement.

The subsequent section, **Bibliometrics**, examines current global trends in scholarly publishing and explains what bibliometric indicators are, which service providers supply them, and the significance of the h-index. This section also analyses open access publishing and its impact on the dissemination of scientific communication.

Globalisation is a process that affects all areas of contemporary life, including academic writing. Researchers are expected to participate internationally, but this can present challenges in

writing practices. The studies considered in this section address *lingua franca* and cultural interaction, as well as how this cultural contact influences the formulation of scholarly texts.

The following thematic section of the research findings is dedicated to various aspects of **scientific style**, which are largely linked to the process of the globalisation of science, including the **structure of scientific articles**. While each publication has its own stylistic guidelines, there are specific requirements that must be followed when submitting an article. Some publishers specify the expected structure precisely, while others only state that any consistent style and referencing format is acceptable. The studies analysed in this section focus on the widely used IMRAD (*Introduction, Methods, Results and Discussion*) structure, which is sometimes encountered in the humanities and social sciences as well. For the first time in Latvian, the structure of publications is analysed in detail and systematically, based on a corpus of social science articles.

Argumentation is closely linked to structure and is an integral component of academic writing, as the researcher must justify both the necessity of the study and the appropriateness of the chosen methods, as well as their ability to help achieve the research aims or answer the research questions. Until now, little attention has been paid to the study of argumentation in Latvian academic writing, although it is one of the central elements of scientific reasoning and the substantiation of ideas. Here, argumentation – its zoning – is examined in relation to the structure chosen by authors for their articles.

As a feature of scientific style – the general scientific language – the use of **phrases** found in scholarly texts is considered.

Subsequent results of the Doctoral Thesis provide insight into the features of scientific article style that could be regarded as culture-specific. These are **metadiscourse markers**, which thus far have only been studied sporadically. Based on Ken Hyland's model (2005), the suitability of this model for Latvian academic writing is explored. This section offers detailed examples of how the categories of the model can be adapted to the Latvian language and analyses patterns of metadiscourse usage in Latvian scholarly texts. The endophoric markers and the author's presence in the text are examined more closely. Although authorial markers may vary across writing cultures, the Latvian academic tradition still predominantly requires authorial neutrality and indirect presence. The author is perceived as an objective and detached observer.

The study of academic writing should necessarily incorporate practical aspects. The online **phrase bank website** is an innovative tool that provides free support to anyone seeking writing advice in Latvian. It offers quick access to typical academic language word combinations and can be used in both student papers and scientific articles. The collection of word combinations has been compiled using a medium-sized corpus of Latvian scientific articles, thus ensuring access to authentic and discipline-neutral, i.e., general Latvian scientific language constructions. The website is supplemented by an overview of text genres familiar in schools, universities, and the research environment.

Translation is another important phase of academic writing. Although many researchers believe they are capable of preparing a summary or abstract in a foreign language themselves,

student consultation on abstract writing is often overlooked. However, the same challenges faced by students may also affect experienced researchers, especially in cases where the abstract is written in the native language and subsequently translated into the *lingua franca* dominant in the international scientific community. In such cases, depending on the publisher's requirements, a specific structure for this secondary text may need to be observed.

All these aspects together form an interconnected network of elements, the main driving force of which is academic writing grounded in the mastery of scientific style.

1.4. Novelty

The study of scientific language and the consolidation of academic writing² traditions are regarded as essential components of every intellectual culture. In Latvian, various types of research have been conducted – both general and focused on specific issues – and a comprehensive overview is provided in the review article by Diāna Laiveniece and Agnese Dubova, “Research Directions in Latvian Scientific Language in the 21st Century: A Literature Review” (Laiveniece & Dubova, 2021), and the monograph “Scientific Language: Style, Text, Context” (Dubova et al., 2021).³

It should be noted that, to date, there has been no compilation in Latvia that brings together many years of research findings related to career development and the impact of globalisation. Therefore, this thesis examines aspects of academic writing accumulated over an extended period of research.

Issues of globalisation are relevant throughout the academic environment, regardless of country, and the articles included in the Doctoral Thesis reflect various aspects of the impact of globalisation. Thus far, globalisation has not been extensively analysed as a topic in Latvian academic discourse, although research outcomes are expected to have an international impact.

From the perspective of this international influence, it is possible to consolidate and bring to the fore issues concerning the role of external factors – Latvian legal regulations and global impact – in the evaluation of academic writing research results, as well as the style of scientific language as the foundation of this process. Although there is one significant work on Latvian linguistic stylistics (Rozenbergs, 1995), which still contains valuable information, there is a dearth of data based on contemporary research regarding, for example, the structure of scientific articles in Latvian. Frequently, this knowledge is transmitted indirectly – relying on field traditions and the experience of academic supervisors. The articles included in this Doctoral Thesis provide new insights into applicable methodology and results that may serve as a basis for further research. For

² In this Doctoral Thesis, scientific language is considered a fundamental element of academic writing, and its acquisition is viewed as one of the principal objectives of academic writing.

³ References to texts published after 2021 are provided in subsequent chapters.

example, for the first time within the context of social sciences, corpus linguistic methods have been used to describe in detail the structure of a scientific article.

For the first time, typical elements of academic writing have also been examined together in the context of scientific language style, for example, word combinations, the formation of argumentation using the zoning method, and an enhanced analysis of authorial presence in texts, providing an in-depth explanation and emphasising practical applicability.

A novel approach in Latvian scientific language research is the application of the model of metadiscourse markers, the implementation of which is a result of the scientific language research project (see *Bwrite* 1.6. International Project). Metadiscourse in the context of the Latvian scientific language is being analysed for the first time. Although it can be asserted that Latvian researchers have already intuitively used metadiscourse elements in their texts, the studies presented in this Doctoral Thesis highlight the advantages of Hyland's metadiscourse model, linking it to its potential future application. This allows for a clearer understanding and recognition of the stylistic features of Latvian scientific language and enhances the effectiveness of academic writing.

Finally, academic writing and text translation are other topics that have not received sufficient attention within the context of Latvian academic writing, especially in student writing practice, where the supervisor plays a significant role in advising and guiding the student towards the acquisition of appropriate writing skills. The articles included in this Doctoral Thesis reveal the actual situation regarding students' competence in writing texts (e.g., annotations) and offer conclusions that could improve both student writing skills and facilitate the supervisor's task, promoting the creation of higher quality texts and student understanding of academic writing style, particularly for those planning to continue studies at master's or doctoral level and pursue a research career.

Summarising the evaluation of research results in terms of their novelty, it is important to highlight the innovative concept of the Doctoral Thesis, which examines the development of academic careers (1) under the influence of Latvian laws and international processes, (2) in connection with the choice of writing language, (3) the creation of linguistic prerequisites – a thorough study of scientific style, and (4) the integration of research results into the acquisition of academic writing.

1.5. Potential Applications of Results

The scientific articles and other publications compiled in this Doctoral Thesis are intended for a broad audience of researchers, students, and school pupils (in the latter case, through the use of an electronic support tool). The language of science and the conventions of academic writing apply across all scholarly disciplines. Mastery of the foundations of scientific language and the development of academic writing competence derived from it can only be achieved over an extended period of time. The expansion of international collaboration – through projects,

publications in diverse outlets with varying editorial requirements, and similar activities – demands a certain degree of flexibility, which in turn presupposes a broad and well-established competence.

For example, researchers working in fields where the IMRAD structure predominates may benefit from additional insights into this format, paying particular attention to elements of argumentation, stylistic variation, and disciplinary differences. Researchers and students from various domains may also use the website *Zinātnes valoda* (<https://zinatnesvaloda.lv>) as a valuable resource when preparing their work, whether bachelor's theses or scientific articles.

A compilation of the legal requirements relevant to career development can serve as a quick reference point for academic staff evaluating their career prospects and potential professional pathways. The overview of bibliometrics reflects the current situation in which indexation has become one of the principal prerequisites for success in an academic career. This information may serve both as a stimulus for reflection and as a starting point for more in-depth research into the impact of bibliometrics, indexation, and global research visibility on disciplines and researchers at both local and international levels.

The articles on globalisation included in this Thesis may serve as a foundation for further research, as the “publish or perish” principle and the demand for the internationalisation of research show no signs of diminishing; indeed, they continue to intensify. This underscores the need to examine the value of research that is locally significant and to consider how national funding should support outcomes that meet the needs of local stakeholders – even when such research is not expected to have a global impact.

The articles on structure and argumentation can help establish methodologies for future studies on academic writing traditions, argumentation patterns, and local specificities. Meanwhile, the articles on metadiscourse markers – for example, authorial presence in the text (Egle & Viļums, 2021) – reveal culture-specific stylistic features of scientific language in Latvian. The Latvian academic writing tradition is clear: the author should not be directly present or “felt” in the text. Nevertheless, further research is needed, particularly regarding the origins of this tradition and its development or persistence under contemporary conditions.

Although it is sometimes claimed that Latvian academic writing is becoming “more English-like,” no empirical studies currently confirm this. In this context, one may refer to the German philosopher Wolfgang Iser's concept of *transculturality* (*Transkulturalität*), which contrasts with Herder's notion of culture as a “sphere.” According to Iser's conception, culture is not homogeneous or monolithic but rather a complex network (Iser, 1995). This perspective can also be applied to academic culture. Consequently, the articles on structure, argumentation, authorial presence, metadiscourse markers, and the compilation of scientific language collocations in the electronic support tool may serve as inspiration for further research on contemporary trends in Latvian academic texts. This is particularly important given that the volume of research published in Latvian is decreasing in many disciplines, thereby threatening the maintenance of academic writing competence in the Latvian language.

Although the articles included in this Thesis provide a detailed explanation of metadiscourse and its potential application in Latvian, metadiscourse research still offers extensive opportunities, especially when examined in the context of Latvian scientific style and its ongoing transformations. The results obtained could also be applied to other small languages with comparable numbers of speakers, enabling an exploration of how metadiscourse functions in those contexts. Another practical application lies in using metadiscourse markers as a checklist for evaluating texts – assessing whether a written text meets the conventions of a typical scientific article and identifying ways to improve clarity and coherence for readers, authors, and reviewers.

In summarising the potential uses of the research results to date, several key areas should be emphasised:

- 1) raising awareness of the role of academic writing in both international and Latvian contexts and disseminating this knowledge;
- 2) generating new insights into specific aspects of scientific style and research methodologies, thereby opening new avenues for further investigation;
- 3) identifying challenges associated with translating secondary scientific texts (such as abstracts) and drawing conclusions about possible solutions;
- 4) developing practical recommendations for enhancing academic writing competence;
- 5) addressing a broad target audience – from school pupils to academic staff.

1.6. Publications and Approval⁴

Reviewed monograph

Dubova, Agnese (ed.) (2021). *Zinātnes valoda: stils, teksts, konteksts*. [The language of science: style, text, context]. Collective monograph. Authors: Agnese Dubova, Diāna Laiveniece, Dzintra Lele-Rozentāle, Dzintra Šulce, Egita Proveja, Raita Rollande, Baiba Egle, Iveta Kopankina, Līva Vecvagare, Artūrs Viļums, Raitis Ralfs Vecmanis, Sindija Ansberga, Veronika Mahmudova, Ance Putniņa, Dana Tihomirova, Kristīne Tomase. Rīga: Zinātne. ISBN 978-9934-599-11-8

Monograph chapters

1. Lele-Rozentāle, Dzintra; Egle, Baiba (2021a). *Zinātnes valoda un daudzvalodība zinātnē* [The language of science and multilinguism in science]. Agnese Dubova (ed.) *Zinātnes valoda: stils, teksts, konteksts*. Rīga: Zinātne, 44–58.

⁴ The list has been arranged in a chronological order, from newest to oldest. Information about indexing taken from the publisher websites.

2. Egle, Baiba; Kopankina, Iveta; Tomase, Kristīne (2021). Sociālās zinātnes [Social sciences]. Agnese Dubova (ed.) *Zinātnes valoda: stils, teksts, konteksts*. Rīga, Zinātne, 145–152.
3. Egle, Baiba; Viļums, Artūrs (2021). Autorība un bezpersoniskums [Authorship and impersonality]. Agnese Dubova (ed.) *Zinātnes valoda: stils, teksts, konteksts*. Rīga: Zinātne, 186–190.

Published papers

1. Egle, Baiba (2025). The Quality of English-Language Abstracts in RTU Bachelor's Papers: A Qualitative Analysis of Common Mistakes. Linda Lauze (ed.). *Vārds un tā pētīšanas aspekti: valodniecības žurnāls* [The Word: aspects of research: Journal of Linguistics], 29, 72–81. Indexation: EBSCO.
2. Egle, Baiba; Lele-Rozentāle, Dzintra; Dubova, Agnese; Jēkabsons, Gints (2025). Building and Annotating a Bachelor Paper Abstract Corpus: First Findings about Latvian Student Abstracts. *Kalbotyra*, 78, 89–110.
Indexation: BASE, CEEOL, Cabell's directories of Academic Journals, CORE, Dimensions, DOAJ Seal, EBSCO (Communication & Mass Media Complete, Linguistics Abstracts Online, TOC Premier), ERIH-PLUS, Gale, Google Scholar (h5-index 6, g5-index 7), HEAL link, JournalTOCs, Norwegian Register for Scientific Journals, Linguistic Bibliography (Online) BRILL, Lituanistika, MLA Directory of Periodicals, MLA International Bibliography, ProQuest, QOAM, ROAD, Redalyc, ScienceGate, ScienceOpen, Scinapse, Sherpa Romeo, Ulrichs Web, WorldCat, Scopus.
3. Hint, Helen; Ruskan, Anna; Lemendik, Helen; Egle, Baiba (2024). At the end of this study, see the following discussion. Endophoric markers in Estonian, Latvian, and Lithuanian research articles. *Eesti rakenduslingvistika ühingu aastaraamat/Estonian papers in applied linguistics*, 20, 45–62.
Indexation: Central & Eastern European Academic Source (EBSCO), Central and Eastern European Online Library (CEEOL), CSA Linguistics and Language Behavior Abstracts (ProQuest), Directory of Open Access Journals, Lund University (DOAJ), Directory of Open Access Scholarly Resources (ROAD), Eesti Rahvusraamatukogu digitaalne arhiiv (DIGAR), ERIH PLUS (European Science Foundation), Linguistic Abstracts (Wiley-Blackwell Publishing), Linguistic Bibliography Online (Brill), MLA Directory of Periodicals, MLA International Bibliography, SCImago Journal & Country Rank (SJCR), SCOPUS (Elsevier), Ulrich's Periodicals Directory, Ulrichsweb.
4. Leijen, Djuddah; Hint, Helen; Lemendik, Helena; Egle, Baiba; Ruskan, Anna; Johansson, Christer (2024). Cross-linguistic patterns of meta-discourse: Disciplinary similarities and section-based differences. *Eesti rakenduslingvistika ühingu aastaraamat/Estonian papers in applied linguistics*, 20, 115–132.

- Indexation: Central & Eastern European Academic Source (EBSCO), Central and Eastern European Online Library (CEEOL), CSA Linguistics and Language Behavior Abstracts (ProQuest), Directory of Open Access Journals, Lund University (DOAJ), Directory of Open Access Scholarly Resources (ROAD), Eesti Rahvusraamatukogu digitaalne arhiiv (DIGAR), ERIH PLUS (European Science Foundation), Linguistic Abstracts (Wiley-Blackwell Publishing), Linguistic Bibliography Online (Brill), MLA Directory of Periodicals, MLA International Bibliography, SCImago Journal & Country Rank (SJCR), SCOPUS (Elsevier), Ulrich's Periodicals Directory, Ulrichsweb.
5. Dubova, Agnese; Laiveniece, Diāna; Egle, Baiba; Lele-Rozentāle, Dzintra (2023). Metadiskursa analīzes teorija latviešu zinātnisko tekstu pētniecībai. *Linguistica Lettica*, 32, 170–196.
Indexation: SCOPUS, ERIH PLUS.
 6. Lele-Rozentāle, Dzintra; Laiveniece, Diāna; Dubova, Agnese; Egle, Baiba (2021). Possibility of determining argumentation in social science articles: The case of Latvian. *Proceedings of CBU in Social Sciences*, 2, 223–229.
Indexation: Proquest, EBSCO, WebArchiv, Crossref, Crosscheck, GoogleScholar.
 7. Lele-Rozentāle, Dzintra; Egle, Baiba (2021b). Globalizācija, reģionālā specifika un valodas lietojums zinātniskajos rakstos [Globalisation, regional specifics and language use in scientific papers]. *Vārds un tā pētīšanas aspekti* : rakstu krājums, 25, 292–301.
Indexation: EBSCO.
 8. Dubova, Agnese; Laiveniece, Diāna; Proveja, Egita; Egle, Baiba (2020). National language in science: The case of Latvian. *Journal of Education, Culture and Society*, Vol. 11, No. 1, 325–342.
Indexation: Index Copernicus, EBSCO, ERIH PLUS, Ulrichsweb, SCOPUS.
 9. Dubova, Agnese; Laiveniece, Diāna; Proveja, Egita; Egle, Baiba (2020). Nacionālā valoda zinātnē: Latvijas piemērs. *Scriptus Manet*, 12, 31–52.
Indexation: EBSCO, Crossref.
 10. Dubova, Agnese; Egle, Baiba; Proveja, Egita (2020). IMRAD usage in Latvian language research papers. *Proceedings of CBU in Social Sciences*, 1, 33–39.
Indexation: EBSCO, Crossref, Crosscheck, Google Scholar, Proquest, WebArchiv.
 11. Egle, Baiba; Tomase, Kristīne (2020). Zinātniskā raksta specifika sociālajās zinātnēs [The specifics of a social science paper]. *Vārds un tā pētīšanas aspekti* : rakstu krājums, 24 (1/2), 280–289.
Indexation: EBSCO.
 12. Lele-Rozentāle, Dzintra; Egle, Baiba (2018). Vārdkopas mūsdienu latviešu zinātnes valodā. Starpdisciplināri orientētas korpuslingvistiskas analīzes rezultāti [Wording in contemporary Latvian scientific language. Interdisciplinary corpus linguistic analysis]. *Vārds un tā pētīšanas aspekti*: rakstu krājums, 22 (1), 92–100.
Indexation: EBSCO.

Popular science publication

Baldunčiks, Juris; Dreijers, Guntars; Dubova, Agnese; Egle, Baiba; Lele-Rozentāle, Dzintra (2016). Par vienvalodību, daudzvalodību un atvērto zinātni. [On monolingualism, multilingualism and open science]. *Zinātnes Vēstnesis*, 24.10.2016, 2–3. http://www.lza.lv/index.php?option=com_content&task=view&id=3431&Itemid=47

Other published papers

1. Egle, Baiba (2021). Linguistic aspects of charted knitting patterns. *Proceedings of CBU in Social Sciences*, 2, 106–111. <https://doi.org/10.12955/pss.v2.208>
2. Egle, Baiba (2020). Translating Craft Traditions: Problems of Terminology in Latvian Traditional Knitting Books. *Proceedings of CBU in Social Sciences*, 1, 40–43.

Conference presentations

1. Baiba Egle. The “Secret” to Abstracts: An Intralingual and Multilingual Writing Overview. *Vārds un tā pētīšanas aspekti*, 27–28.11.2025, Liepāja.
2. Baiba Egle. Multilingualism in Latvian academic life: requirements and challenges. *Sustainable Multilingualism International Conference*, 29–31.05.2025, Kaunas, Lithuania.
3. Baiba Egle. English Language Skills as Part of a Successful Academic Career. *Higher Education for Sustainable Development of a Smart Region*, 08.05.2025, Siauliai, Lithuania.
4. Baiba Egle. *Abstract kā anotācijas tulkojums vai paralēlteksts bakalaura darbos. Vārds un tā pētīšanas aspekti*, 28–29.11.2024, Liepāja.
5. Dzintra Lele-Rozentāle, Diāna Laiveniece, Agnese Dubova, Baiba Egle (2023). Terminrades prakse un iespējas latviešu valodniecības teorētiskās bāzes paplašināšanā: metadiskursa iezīmētāju piemērs. 58. prof. Artura Ozola dienas starptautiskās zinātniskā konference *Gramatika un vārddarināšana* [The 58th Professor Arturs Ozols International Academic Conference *Grammar and Word Formation*], 16–17.03.2023, Rīga. In: *Abstracts of the 58th Professor Arturs Ozols International Academic Conference “Grammar and Word Formation” March 16–17, 2023, Rīga: LU Akadēmiskais apgāds*, 45–46. <https://doi.org/10.22364/aoszk.58.tk>
6. Diāna Laiveniece, Baiba Egle, Agnese Dubova, Dzintra Lele-Rozentāle, Djuddah Leijen. Determining Stance in Estonian, Latvian, and Lithuanian Academic Writing. Implications and Directions – Latvian perspective. *Writing Research Across Borders 2023*, 17–22.02.2023, Trondheim, Norway.

7. Agnese Dubova, Baiba Egle, Diāna Laiveniece, Dzintra Lele-Rozentāle. Metadiskursa analīzes teorija latviešu zinātnisko tekstu pētniecībai [Metadiscourse analysis for Latvian scientific text analysis]. *Vārds un tā pētīšanas aspekti*, 24–25.11. 2022, Liepāja.
8. Diāna Laiveniece, Baiba Egle, Agnese Dubova. The Latvian language of science: Challenges of local and global pressure. *28th conference on Baltic studies*. Baltic studies at a crossroads, Seattle, 27–29.05.2022, University of Washington, USA.
9. Agnese Dubova, Baiba Egle, Dzintra Lele-Rozentāle. Multilingualism vs. monolingualism in science communication: Latvian language(s) of science in the 21st century. *National languages in higher education and research*, 7–8.10.2021, Tallinn, Estonia.
10. Baiba Egle. Who is the target audience for Latvian scientists? *Externe Wissenschaftskommunikation. Verständlichkeit – Funktionen – Formate – Verantwortung* [External science communication – understanding, function and formats], 14–16.11.2019. University of Innsbruck, Oberburgl, Austria.

Participation in research projects

1. C4835.ZPD.PI.0024.P1. Project No. 5.2.1.1.i.0/2/24/I/CFLA/003. Implementation of consolidation and management changes at RTU, LiepU, Rēzekne Academy of Technology, Latvian Maritime Academy and Liepāja Maritime College for progress towards excellence in higher education, science and innovation. *Towards AI-based thesis abstract writing aid: bilingual text corpus preparation, analysis, and model development*. 01.10.2024–31.01.2026 researcher.
2. C4835.ZPD.PI.0025.P1. Project No. 5.2.1.1.i.0/2/24/I/CFLA/003. Implementation of consolidation and management changes at RTU, LiepU, Rēzekne Academy of Technology, Latvian Maritime Academy and Liepāja Maritime College for progress towards excellence in higher education, science and innovation. *The historic development of laudationes texts in Latvian: the impact of other languages and traditions, linguistic specifics and situationality within the academic community*. 01.10.2024–31.01.2026, researcher.

International project

Bwrite – Academic Writing in the Baltic States: Rhetorical Structures through Culture(s) and Languages. 01.02.2020–01.03.2024, researcher. See: www.bwrite.ut.ee

Other research projects

1. *Latviešu zinātnes valoda intralingvālā aspektā/ Latvian scientific language in an intralingual aspect*. LZP fundamentālo un lietišķo pētījumu projekts. 01.12.2018–01.12.2021, researcher. Nr. lzp-2018 / 2-0131. See: www.zinatnesvaloda.lv
2. *The Language and Structure of Secondary Academic Texts (ZIVS II)*. A Research Project of Ventpils University of Applied Sciences, 2018, researcher.

3. *The Language and Structure of Scientific Introductions* (ZIVS). A Research Project of Ventspils University of Applied Sciences, 2017, researcher.

Participation in group publications

Participation is evaluated by the corresponding author, the responsible editor, or the project manager in accordance with Cabinet of Ministers Regulation No. 1001 “Procedures and Criteria for Awarding a Scientific Doctoral Degree”.⁵

First author: Agnese Dubova

Nr.	Publication, authors, year	Author's contribution
1	Metadiskursa analīzes teorija latviešu zinātnisko tekstu pētniecībai. Agnese Dubova, Diāna Laiveniece, Baiba Egle, Dzintra Lele-Rozentāle. <i>Linguistica Lettica</i> , 32, 2023, 170–196.	25 %
2	IMRAD usage in Latvian language research papers. Agnese Dubova, Baiba Egle, and Egita Proveja. <i>Proceedings of CBU in Social Sciences</i> , 1, 2020, 33–39.	35 %
3	National language in science: The case of Latvian. Agnese Dubova, Diāna Laiveniece, Egita Proveja, Baiba Egle. <i>Journal of Education, Culture and Society</i> , Vol. 11, No. 1, 2020, 325–342.	35 %
4	Nacionālā valoda zinātnē: Latvijas piemērs [National language in science: The case of Latvian]. Agnese Dubova, Diāna Laiveniece, Egita Proveja, Baiba Egle. <i>Scriptus Manet</i> , 12, 2020, 31–52.	35 %
5	Sociālās zinātnes. Baiba Egle, Iveta Kopankina, Kristīne Tomase. <i>Zinātnes valoda: stils, teksts, konteksts</i> . Rīga: Zinātne, 2021, 145–152.	80 %
6	Autorība un bezpersoniskums. Baiba Egle, Artūrs Viļums. <i>Zinātnes valoda: stils, teksts, konteksts</i> . Rīga: Zinātne, 2021, 186–190.	60 %

⁵ If the Doctoral Thesis is a thematically unified set of publications with co-authors, or a collective monograph, a written consent from all co-authors of the publications included in the Thesis for the use of the publication in the promotion must be attached, or a confirmation from the corresponding (main) author of these publications regarding the candidate's personal contribution to the preparation of the publications must be provided. Electronically signed documents are included in the appendix.

7	<p><i>Zinātnes valoda. Digitāls resurss.</i> Agnese Dubova, Diāna Laiveniece, Dzintra Lele-Rozentāle, Dzintra Šulce, Egita Proveja, Raita Rollande, Baiba Egle, Iveta Kopankina, Līva Vecvagare, Artūrs Viļums, Raitis Ralfs Vecmanis, Sindija Ansberga, Veronika Mahmudova, Ance Putniņa, Dana Tihomirova, Kristīne Tomase.</p>	<p>The English text-type equivalent in the section “Anotācija” (zinātnē) and “Bakalaura darbs” [bachelor paper], collection of phrases for the introduction, aim, methods, references, and authorial presence.</p>
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First author: Dzintra Lele-Rozentāle

Nr.	Publication, authors, year	Author's contribution
1	<p>Zinātnes valodas izpētes aspekti Eiropas kontekstā [Research aspects of the language of science in a European context] Dzintra Lele-Rozentāle, Baiba Egle</p> <p><i>Zinātnes valoda: stils, teksts, konteksts.</i> Rīga: Zinātne, 2021. <i>Zinātnes valoda: stils, teksts, konteksts.</i> Rīga: Zinātne, 44–58.</p>	<p>50 % Participation in the creation of the concept, gathering of secondary literature and analysis, and development of conclusions.</p>
2	<p>Vārdkopas mūsdienu latviešu zinātnes valodā. Starpdisciplināri orientētas korpuslingvistiskas analīzes rezultāti. Dzintra Lele-Rozentāle, Baiba Egle (2018),</p> <p><i>Vārds un tā pētīšanas aspekti</i>, 22(1) 92–100.</p>	<p>50 % Participation in the creation of the concept, empirical material analysis and development of conclusions.</p>
3	<p>Possibility of determining argumentation in social science articles: The case of Latvian.</p> <p>Dzintra Lele-Rozentāle, Diāna Laiveniece, Agnese Dubova, Baiba Egle (2021) <i>Proceedings of CBU in Social Sciences</i>, 2, 223–229. https://doi.org/10.12955/pss.v2.225</p>	<p>25 % Participation in the creation of the concept, empirical material analysis, description of conclusions and text translation into English.</p>

4	Globalizācija, reģionālā specifika un valodas lietojums zinātniskajos rakstos. Dzintra Lele-Rozentāle, Baiba Egle (2021) <i>Vārds un tā pētīšanas aspekti: rakstu krājums</i> , 25 292–301. https://doi.org/10.37384/VTPA.2021.25.292	50 % Participation in the creation of the concept, gathering of secondary literature and analysis, and development of conclusions.
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First author: Helen Hint

Nr.	Publication, authors, year	Author's contribution
1	“At the end of this study, see the following discussion”: Endophoric markers in Estonian, Latvian, and Lithuanian research articles. Helen Hint, Anna Ruskan, Helena Lemendik, Baiba Egle. <i>Eesti rakenduslingvistika ühingu aastaraamat /Estonian papers in applied linguistics</i> , 2024, vol. 20, 45–62.	Latvian language material analysis, result verification.

First author: Djuddah A. J. Leijen

Nr.	Publication, authors, year	Author's contribution
1	Cross-linguistic patterns of meta-discourse: disciplinary similarities and section-based differences. Djuddah A. J. Leijen, Helen Hint, Helena Lemendik, Baiba Egle, Anna Ruskan, Christer Johansson. <i>Eesti rakenduslingvistika ühingu aastaraamat /Estonian papers in applied linguistics</i> , 2024(20), 115–132.	Planning of the paper and final version approval.

2. RESEARCH RESULTS

2.1. Extralinguistic Factors in Academic Writing and Career Development

The academic environment is also influenced by a wide range of extralinguistic factors, which are not always associated with scientific work and its manifestations. In contemporary Europe, the regulations and recommendations adopted by the European Union play a significant role. The most linguistically relevant among these is Regulation No. 1 (01/07/2013), Article 1 of which lists the 24 official and working languages of the Union's institutions: English, Bulgarian, Czech, Danish, French, Greek, Dutch, Croatian, Estonian, Italian, Irish, Latvian, Lithuanian, Maltese, Polish, Portuguese, Romanian, Slovak, Slovenian, Finnish, Spanish, Hungarian, German, and Swedish. By establishing Latvian as one of the official languages of the EU, this regulation also grants the Latvian language a new international status.

Article 3 of the Treaty on the EU states: "It shall respect its rich cultural and linguistic diversity, and shall ensure that Europe's cultural heritage is protected and enhanced" (Treaty on the EU, 2016/C 202/01). Therefore, it can be asserted that the EU aims to promote multilingualism and the preservation of cultural heritage. The results of scientific work are also part of each country's (and language community's) culture. Research may be conducted both locally and globally, and considering the EU's multilingual policy, there should be no obstacles to academic writing in one's national language, which is also an official EU language. However, there are certain extralinguistic factors that affect academic writing.

In the Doctoral Thesis, the extralinguistic factors considered include the normative regulation in Latvia, the role of bibliometrics, as well as the possible shift towards monolingualism in science. The normative acts concerning career advancement do not mention language use anywhere in their text, yet the requirement that a certain number of publications must be indexed in specific databases makes language choice significant. Although bibliometrics and indexing may appear to be neutral, data-driven processes, language use also plays a role in them. The section on bibliometrics also discusses the implicit pressure to choose English.

Legal requirements in Latvia

Various scientific fields have distinct requirements for candidates applying for associate professor and professor positions. These requirements specify the necessary number of publications indexed in the *Web of Science* or *Scopus* databases, as well as the h-index that candidates for associate professor or professor must demonstrate. However, this is only one of the possible criteria. The evaluation of candidates may also take into account their authored scientific

monographs, thereby reducing the required number of publications.⁶ For clarity and focus, subsequent visualisations highlight the required number of publications over six years and explain the significance of the h-index.

According to Cabinet regulations, the highest requirements are set for candidates in the fields of natural sciences, engineering, and medicine (see Fig. 2.1).

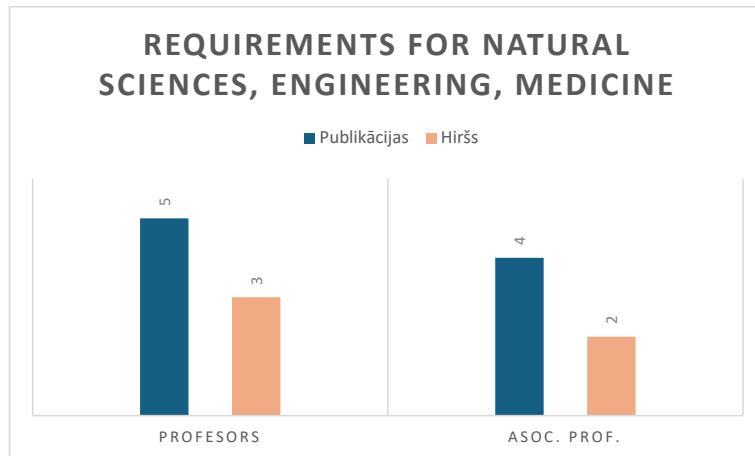


Fig. 2.1. Number of publications and h-index for professor and associate professor candidates in natural sciences, engineering and medicine. Visualisation by B. Egle (MK 129).

The requirements set for the fields of agricultural and social sciences (see Fig. 2.2) are considered to be the second highest. Although these two fields may initially appear to be very different, the regulatory framework assesses the scientific performance of qualified candidates as equivalent.

⁶ According to Annex to Cabinet Regulation No, 129, the publication requirement may be reduced if the candidate for the position has a peer-reviewed scientific monograph.

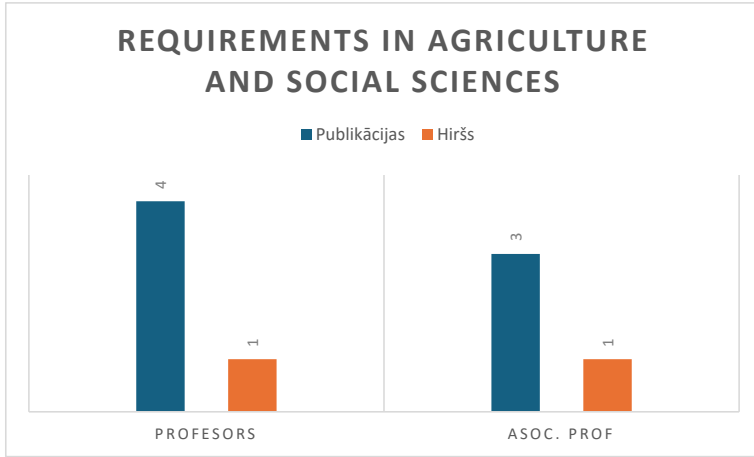


Fig. 2.2. Number of publications and h-index for professor and associate professor candidates in agriculture and social sciences. Visualisation by B. Egle (MK 129).

The requirements for the fields of humanities and arts are visualised in Fig. 2.3. Unlike other scientific disciplines, where the h-index is a mandatory requirement, it is not considered in the humanities. In the regulatory documents, this is indicated by the symbol “–”, which can be interpreted as zero in data visualisation. This does not mean that researchers in the humanities do not have an h-index (many do), but a legally defined minimum h-index requirement is not part of the evaluation criteria for candidates in the humanities.

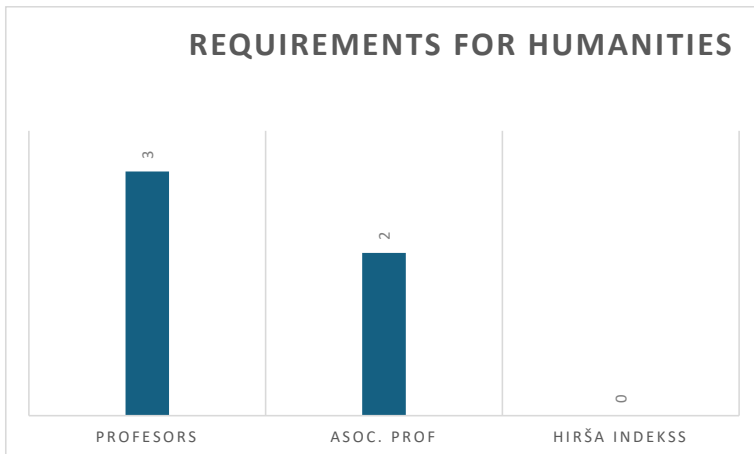


Fig. 2.3. Number of publications and h-index for professor and associate professor candidates in humanities. Visualisation by B. Egle (MK 129).

Although the requirements established for academic staff in the humanities may seem comparatively “low”, their essence is unequivocal – internationally recognised publications are essential. As Anees Bahji et al. (2023) point out, almost 75 % of all scientific publications are published in English, even though only around 20 % of the world's population is proficient in English. For the majority of academic staff in Latvia, proficiency in English is a necessity, as researchers must be able to write in English at a sufficiently high level for their work to be published in internationally peer-reviewed and major database-indexed journals.

The most significant databases are considered to be *Web of Science* and *Scopus*. Publications in these journals are predominantly in English or other major languages. Only a small number of Latvian journals meet the indexing criteria of these service providers. For example, in the field of linguistics, the English-language journal “Baltic Journal of English Language, Literature and Culture” (BJELLC) is indexed in EBSCO, Web of Science, ERIH PLUS, NSD, Index Copernicus, MLA Directory of Periodicals, MLA International Bibliography, BASE, DOAJ, WorldCat, Sherpa/Romeo, Scilit, LINGUIST List, and Google Scholar (see Baltic Journal of English Language, Literature and Culture). Another periodical in linguistics – the collection “Valoda: nozīme un forma” published by the Department of Latvian and Baltic Studies at the Faculty of Humanities, University of Latvia – has a parallel English title “Language: Meaning and Form”. Articles are in Latvian or English, with bilingual titles. English summaries for articles are written in Latvian, and Latvian summaries for those are written in English. The collection is indexed in SCOPUS, MLA International Bibliography, EBSCO, ERIH PLUS, CEEOL, and Index Copernicus International.

Aman and Botte (2017) have established that by 2005, 90 % of publications included in the *Web of Science* were in English. Nowadays, the indexing includes journals in several other languages as well; however, out of approximately 49 000 scientific journals worldwide, only about 6600 are in other languages, and the number of journals indexed in French, Spanish, and Russian does not exceed 2000 for each language (Curry & Lillis, 2024). This means that the opportunity to publish research in Latvian in an indexed journal is minimal.

Although some Latvian researchers may be able to write scientific papers in Russian or another language, this significantly reduces the potential for publication, as the number of journals specific to a field or suitable for a particular research topic may be very limited, especially in the case of a narrow specialisation.

Bibliometrics and its relationship with academic writing: Indexing, Open Access, and the h-index

Academic writing has existed for centuries, yet only in modern times has it become closely intertwined with quantitative metrics – namely, bibliometrics, indexing, and the h-index.

The EBSCO database defines bibliometrics as follows:

Bibliometrics refers to the scientific analysis of the impact of published texts, such as scholarly articles and monographs. This analysis examines various aspects of a publication's performance, including the number of readers and the frequency with which other works cite it as a source (EBSCO, 2024).

Although bibliometrics is often associated with new technologies, its origins date back further – the first book of citations was published in 1860 (Shapiro, 1992). The pioneer of the impact factor was Eugene Garfield, who in 1955 began developing a citation tracking system (see Baldwin (2017) for the history of citation analysis). The collection and analysis of data for both bibliometrics and impact factors is now considerably easier owing to various software methods. However, the most frequently used bibliometric results are sourced from *Web of Science* and *Scopus*. These databases are referenced in career advancement regulations, and it is assumed that most academic staff are familiar with them, although understanding of their actual function is often limited. The Netherlands-based academic publisher Elsevier offers the following explanation:

Web of Science (also known as SCI – Science Citation Index) is an online subscription-based scientific citation indexing service that provides comprehensive citation searching. It offers access to multiple databases covering interdisciplinary research, enabling in-depth exploration of specialised subfields within a given academic or scientific discipline (Elsevier, 2021).

It is important to emphasise that this paid service is subscription-based and managed by the publisher Elsevier; thus, it is not an independent service created by academic institutions or researchers.

The other service referenced in career advancement regulations is the *Scopus* database, also managed by Elsevier, which describes it as “a reliable, source-neutral abstract and citation database, created by independent subject experts recognised as leaders in their fields” (Elsevier, 2025). Like *Web of Science*, *Scopus* is a complex, data-rich service requiring a subscription. The costs for these services for institutions or researchers are not publicly available, but it can be assumed that they are substantial.

Globalisation brings many positive benefits, but it also significantly affects the academic environment. In the past, international scholarly communication occurred indirectly – through reading printed publications and sometimes direct correspondence by post with authors. Nowadays, this has largely shifted to searching for scholarly articles published online, occasionally sending an email to the corresponding author. Previously, institutions had to subscribe to journal bundles to receive the latest research findings. Now, article abstracts are freely available, but

obtaining full-texts can be very expensive if the institution has not subscribed to the relevant publisher's services, which often proves unaffordable not only for smaller institutions in lower-income countries but also for larger universities. For example, in 2023, Sorbonne University decided to discontinue *Web of Science* and other *Clarivate* tools to focus on developing open science (Sorbonne, 2023). The University of Jyväskylä in Finland also cancelled its *Web of Science* subscription, stating:

The Open Science Centre annually allocates approximately €3 million for information resources for the JYU community, with the largest costs arising from database subscriptions. The continuous increase in information resource prices significantly affects budget adequacy, and each year, database subscriptions are reviewed in light of their usage and pricing changes (JYU, 2025).

Institutions typically do not disclose precise subscription costs, which vary depending on institutional size, location, user numbers, and other factors. However, these expenses often comprise a substantial part of library budgets. This creates a dual challenge—cost and access to science. All researchers should have access to the latest scientific discoveries, especially when research is funded by national or international sources, such as the EU, since such research should serve the public interest. Privately funded research may be evaluated differently, particularly if it is related to commercial products or processes that may constitute trade secrets, but publicly funded science ought to expand the collective knowledge base.

Latvian institutions endeavour to provide the broadest possible access to scholarly article databases according to their financial means. It can be assumed that these costs are high, influenced by user numbers, the volume of requested articles, and other factors.⁷ If an institution lacks a sufficient budget, researchers may have very limited access to publications. This creates an unequal situation, often overlooked in the Western-centric academic environment. To write a high-quality scholarly article in any language, a sufficient number of sources is needed. If an institution cannot provide access to paid services, researchers often have to pay for access to articles for a limited time, with fees reaching €20 or more per article. Moreover, several sources are usually required, so for researchers from lower-income countries with limited funding, access to science can be prohibitively expensive.

Larivière, Haustein, and Mongeon (2015) found that an oligopoly exists in academic publishing:

[...] in total, the five largest publishers published more than 50 % of all articles appearing in 2013. In the social sciences, concentration is highest (70 % of articles from five major publishers), while in the humanities, it is relatively low (20 %) (Larivière et al., 2015, 3).

⁷ The author of this Thesis has enquired with the Liepāja RTU Library about access to paid databases. The library subscribes to them, but it was not possible to obtain information regarding costs and their proportion in the budget.

These data are a decade old, and the situation has likely shifted even further in favour of large publishers.

The European Council has stipulated that all HORIZON project results must be open access, explaining:

Open access is the practice of providing online access to scientific information that is free of charge to the user and reusable. It is widely recognised that increasing the accessibility of research results encourages better and more efficient science, as well as innovation in both the public and private sectors (EC, 2025).

This principle is reinforced by the European Commission’s Recommendation of 17 July 2012 on access to and preservation of scientific information (Recommendation 2012/417/EU). Although not a mandatory requirement, it is essential that HORIZON projects ensure open access. The EU invests substantial funds in these projects, often several million euros, and open access enables the public to become acquainted with research topics and outcomes.

Nevertheless, access to scientific research results can incur various expenses. If a scholarly article is not in open access form, the reader may have to pay for single-article access (Cook et al., 2024) or hope that the university library has subscribed to databases in the relevant field. Such subscriptions can be relatively costly for libraries and higher education institutions, but profitable for publishers.

Arash Abizadeh wrote in The Guardian in 2024 that the five largest academic publishers earn billions in profits at a margin of 40 %, exceeding even Google’s rates. He also highlighted subscription costs:

Between 2010 and 2019, universities in the United Kingdom paid more than £1 billion for journal subscriptions and other publication fees. Over 90 % of these payments went to the five largest commercial publishers. University College London and the University of Manchester each paid more than £4 million (Abizadeh, 2024).

These are considerable expenses for just one country, and given thousands of other institutions, publisher profits continue to rise.

Projects such as the Open Library for Humanities (OLH, 2025) aim to provide a high-quality open access platform for readers, authors, and publishers, combining university and library resources while achieving the desired indexing. The OLH project involves over 340 universities and public libraries, with new institutions, including Latvian university libraries, able to join, thereby strengthening the humanities and open access to publications. The journal “Open Libraries of Humanities”, one of many published by the project, does not levy article processing charges (APC) and is currently indexed in the Q2 quartile. It does not currently accept unsolicited submissions and focuses on thematic collections. Positively, OLH accepts articles in languages other than English. Within the OLH project, several journals are published across various

humanities disciplines, and all articles are open access, with neither authors nor readers required to pay any fees.

The publication of articles in databases is linked to their evaluation. It is worth mentioning the San Francisco Declaration on Research Assessment (DORA), which has signatories in many countries, including Latvia. Two notable signatories in Latvia are the University of Latvia and the Latvia University of Life Sciences and Technologies. DORA highlights the risks of using quantitative data in assessment, noting that journal impact factors may be:

- 1) limited, as citations may be disproportionate;
- 2) specific to a particular scientific field;
- 3) subject to manipulation determined by editorial policy;
- 4) based on data that are not transparent and not publicly available (DORA, 2025).

The signatories of the declaration offer several recommendations for improving research assessment:

- 1) eliminate journal-based indicators, such as impact factors, from criteria for funding, appointments, and promotions;
- 2) assess research based on its content, not on the journal in which it is published;
- 3) use the opportunities provided by online publication, such as removing unnecessary restrictions on word count, images, and references, and develop new significance and impact indicators (ibid.).

One way to assess the true value of research is through open access. A publication is defined as “open access”

[...] if it is free from financial, legal, or technical barriers – [...] anyone can read, download, copy, distribute, print, search, and analyse the information or use it for educational or other purposes in accordance with legal regulations (Open Access NL, 2025).

There are several levels of open access:

- 1) green access – the author publishes or archives a preprint or another version of the article;
- 2) gold access – the article is published in an open-access journal or collection, which may entail costs for the author;
- 3) diamond access – there are no fees for either the author or the reader (ibid.).

Positively, an increasing number of scholars publish full texts online (preprints, copies of long out-of-print books or articles) on their personal websites or platforms such as ResearchGate or Academia. This trend should be particularly encouraged as it significantly increases a scholar’s

visibility and genuine citations. Gold and diamond open access journals also make a substantial contribution to scientific progress.

However, open access often entails article processing charges (APC), which journals apply to offset potential losses from the absence of reading fees or journal subscription fees. These costs can vary greatly.⁸ Publication costs are usually included in project budgets or institutional funding. Some informants⁹ have indicated that institutions are willing to pay several thousand euros if an article is accepted in a Q1 or Q2 quartile journal. Q1 typically means a journal ranked among the world's top 25 %, while Q2 denotes the 25–50 % range (IFERP, 2025). Publications in such journals are crucial for institutional reputation, and management is aware of the costs. However, this creates a risk that high-quality research may not be published if the researcher lacks project funding or institutional support, e.g., if the researcher is temporarily unaffiliated.

Another factor influencing academic writing is the h-index.

The index is determined by considering the number of publications and how many times these publications have been cited by other authors. While widely used in academia, many authors find its calculation complex (Mondal et al., 2023).

The number of citations depends largely on the scientific field and the specific research topic. Some topics attract a broad audience, e.g., in the natural sciences, where experiments and calculations can be repeated by many researchers. In other fields, such as linguistics, where a study may focus on a specific aspect of a minor language, the number of citations may be considerably lower – not because the research is of lesser value, but because the audience is smaller.

The creator of the h-index, J. E. Hirsch, emphasises:

“If a scientist publishes many articles, but they are not cited, it means these articles do not significantly impact scientific progress and therefore do not merit high recognition.” (Hirsch & Buela-Casal, 2014, 162)

This approach to evaluating science is highly restrictive, as it attributes value only to numerical indicators. The true value of research is determined by its content. Every peer-reviewed article contributes to scientific advancement – some may have a direct, revolutionary impact, while others document cultural aspects not previously described. Research yields both tangible and intangible benefits, which should not be reduced merely to citation counts.

⁸ According to the experience of this Thesis' author, these may be around €200 for non-indexed journals and from €500 to several thousand euros for indexed journals.

⁹ Researchers who wished to remain anonymous. Results obtained from conversations during the preparation of the Doctoral Thesis.

Hirsch and Bucla-Casal (ibid., p.163) also note that “*English is the universal scientific language*”, which receives more citations than other languages, and therefore, researchers who publish in other languages have lower h-indexes.

***Lingua franca* in science**

Main publications:

Lele-Rozentāle, Dzintra; Egle, Baiba (2021a). Globalizācija, reģionālā specifika un valodu lietojums zinātniskajos rakstos. Gunta Smiltnece, Linda Lauze (eds.). *Vārds un tā pētīšanas aspekti*. 25. Liepāja: LiePA, 292–301.

Lele-Rozentāle, Dzintra; Egle, Baiba (2021b). Zinātnes valodas izpētes aspekti Eiropas kontekstā. Agnese Dubova (ed.). *Zinātnes valoda: stils, teksts, konteksts*. Rīga: Zinātne, 44–60.

This subchapter is grounded in the recognition that multilingualism within the functional styles of language, including scientific style, should be regarded as a cultural value that ensures the development of language and serves as a significant source of innovation, or at least its driving force. This notion, of course, is not new – the development of national languages has demonstrated the potential and advantages of European languages in science, compared to the *lingua franca* of their time – Latin. Bilingualism and multilingualism in science are longstanding phenomena associated with the coexistence of cultures, mutual interactions, and the intermediary function of translation. Language, its use and choice in the early stages of Latvian scientific language, its development up to the restoration of state independence, during the Soviet period, and in the post-restoration phase up to the present, remains insufficiently studied.

The consolidation of English as the *lingua franca* in science during the twentieth century has been widely analysed and criticised from various perspectives. It is often compared with Latin in this role, highlighting the insufficient language proficiency that does not reach the level of a native language. Monolingualism (English) is neither a prerequisite for internationalisation nor its synonym, as is often assumed. Such a view oversimplifies the process of globalisation and the general tendency to perceive science as a component of the economy. It is frequently overlooked that this situation gives rise to a new form of provincialism. Scientific monolingualism often relies on a simplified use of English, which prevents the full exploitation of the language's potential, as this is only possible at the level of native language proficiency (Mittelstraß, Trabant & Fröhlicher, 2016).

The issues discussed are analysed from the *lingua franca* perspective, noting that English functions effectively for practical tasks – sales, tourism, hospitality – where a limited set of signs may suffice. However, such an approach is not permissible in science, as scientific language must be precise and possess finely differentiated expression, reflecting a high level of language proficiency. The use of English as a global communication tool often leads to its reduction to a

lingua franca, which no longer meets the needs of quality research (Mittelstraß, Trabant & Fröhlicher, 2016, 32–33).

Here, it is necessary to briefly address the term “linguistic imperialism”. Since the 1990s, Robert Phillipson has developed this concept most actively, noting that “*its study does not advocate for or against any particular language, but rather analyses how linguistic imperialism operates in specific contexts to identify injustice or discrimination and create a basis for their elimination*” (Phillipson, 2013). Phillipson emphasises that English-based education in a postcolonial context prompts neglect of native languages and cultural contexts, and is inappropriate and ineffective (Phillipson, 2012). Linguistic hegemony of English is reinforced both structurally (through material investments) and ideologically. In practice, English is taught in ways that marginalise other languages and hinder or prevent their acquisition “through linguistic policies”, which constitute linguistic imperialism (Phillipson, 2015).

It should be emphasised that scientific discourse takes various forms – scientific communication among specialists and science communication to the public, involving dialogue between scientists, the public, and science policy makers. As most research is funded by taxpayers, scientists, as active participants in the process, have a responsibility to ensure broad and high-quality discourse among involved institutions and stakeholders in society.¹⁰

Articles published in Latvian, in which scientific results are expressed in Latvian, attest to the historical diversity of language use. The need for multilingualism in science has also attracted the attention of researchers. Here, the Helsinki Initiative on Multilingualism in Scholarly Communication (Helsinki Initiative, 2019) should be mentioned, addressed to “policy makers, institutional leaders, universities, research institutions, funders, libraries, and researchers”, calling for the support of multilingualism in science. The central emphasis of the initiative is the importance of multilingual scientific communication – to ensure high-quality scientific publishing in any language, as well as the equal weighting of research results regardless of language, and the public's right to access scientific findings by reading studies in various languages.

The dominance of English is often discussed as a by-product of academic life – a phenomenon that is understandable and seemingly inevitable, to which one must adapt to succeed. Nevertheless, there remains an ongoing need for publications in local languages across all disciplines and countries.

Very often, the influence of English as a *lingua franca* in research is ignored, with the main focus placed on it as a second language (L2). The need to write in better English is

¹⁰ In an informal conversation with the editor of a Latvian scientific journal, the author learned that, in order for the journal to begin the process of indexing in international databases, a requirement was to ensure at least 30 % of publications in English. As the journal traditionally focuses on the study of specific language combinations, it has historically been oriented towards non-English languages and their research aspects. Nevertheless, the institution overseeing the journal expects its indexing, thus the journal must change its original focus to become “more international”.

emphasised to achieve better results, especially for those for whom it is not their mother tongue. This creates a “hidden” tradition – less discussion about multilingualism in science and academic writing, simplifying the global situation to the principle “just learn English”. While this approach may be somewhat useful, it does not broaden understanding of the needs of the global non-English-speaking scientific community. As mentioned previously, indexing is a crucial factor in scientific work, and currently, the most significant indexed journals are published in English.

Attitudes towards language and scientific research remain under-researched topics. Konrad Ehlich highlighted this as early as 2000, noting that this multidimensional research direction should form the foundations of the comparative study of scientific languages (German: *Wissenschaftssprach-Komparatistik*) (Ehlich, 2000, p. 53).

Studies published in Latvia are no exception, as they reflect the same tendencies that characterised many other scientific cultures at the end of the twentieth century – namely, the language of scientific publications was often monolingual. This trend in the Latvian scientific environment is not new: the previously dominant Russian language has been replaced by English.

This tendency in Latvian science has been reinforced by several factors that have acquired legal status and, to varying degrees, directly or indirectly determine the language of publications. This is evidenced by regulatory acts concerning academic career regulations (see Section 2.1), as well as the qualification requirements for experts of the Latvian Science Council and the conditions for the highest stages of the academic career, which stipulate certain criteria for indexing and impact (Lele-Rozentāle & Egle, 2021a, pp. 52–57).

Editorial boards of scientific journals and collections observe the traditions of their scientific fields and the recommendations of science policy, and therefore often determine not only the language of publication but also language use at the macrostructural level. As a result, asymmetric multilingualism emerges. If the main text of a publication is in Latvian, then the title and summary are usually provided in a foreign language (most often English, but other languages are also possible). In some fields, such as engineering, the summary may be presented in three languages – Latvian, English, and Russian. The author's contact information is also often provided in a foreign language.

Language use is asymmetric, and depending on the scientific field, multilingualism is maintained, or there is a transition to monolingualism. Such a transition may pose risks to higher education and, subsequently, to the quality of school education, as it impedes the development of new terminology and the overall advancement of scientific language. This issue is also significant for the broader society.

Language use and the related problems allow the discourse of Latvian scientific language to be included in the international discourse. A significant part of this research is based on the results of German scientific discourse, as many aspects have been extensively analysed in German linguistics that could be important for the development of Latvian scientific language, especially regarding the use of *lingua franca* in the context of national language development. The experience of German-speaking researchers could be useful in the study of Latvian scientific discourse, for

example, in matters of monolingualism and multilingualism in science, the increasing influence of English, the threat to national scientific culture, support for the national scientific language, interdisciplinary differences in publication practices, and the role of language in various scientific disciplines. These topics, which have long been studied in German-speaking countries, are also relevant to the Latvian scientific language.

This is also important for Latvian linguistics, as the tendency towards monolingualism and its consequences for the development of the national language pose risks at all levels of education. Therefore, popular science publications intended for a broad audience should emphasise the significance of cognitive linguistic functions in knowledge creation – namely, the formation of new knowledge based on research results. At the same time, the concept of *lingua franca* should be highlighted in scientific discourse to balance the interests of society, Latvia, and international research.

The history of Latvian academic communication has always been influenced by other cultures. Historically, German influence predominated; later, especially during the Soviet period, the influence of Russian was significant and remains detectable.

Nowadays, scientific communication, as previously mentioned, is conducted in English. There are many ways to acquire sufficient proficiency in English to write scientific papers, described, for example, by Frydriehova & Klimova (2015), Šulovská (2022) and others, but language courses rarely include advanced academic writing skills, especially for specific genre styles. This means learning text structure, general scientific language, and terminology.

2.2. Style and Text

The style of scientific language: Universal and language-specific features

Academic writing entails mastering the scientific style appropriate to the chosen textual genre. In 1959, the functional stylistics specialist Elise Riesel formulated the features of the scientific style, which are universal and remain relevant in the study of scientific language today. These include objectivity and logic, clarity, the integration of external elements such as tables, diagrams, etc., as well as the incorporation of quotations (Riesel, 1963, p. 446).

In terms of vocabulary, the style is characterised by a reliance on neutral literary language, the use of terminology and clichéd expressions (*ibid.*, pp. 446–447). In the latter case, reference is made to commonly used scientific vocabulary (German: *alltägliche Wissenschaftssprache*) in the understanding of Ehlich (1999), including word groups that are compiled in databases for the purpose of acquiring academic language.¹¹

These are features that may be considered universals of scientific language, applicable to any scientific language and its disciplines.

¹¹ See, for example, the Manchester Academic Phrasebank: <https://www.phrasebank.manchester.ac.uk>; the Latvian scientific language electronic resource: <https://zinatnesvaloda.lv/frazes>.

The further stylistic features discussed by Riesel pertain to the scientific style of the German language, which also partly characterises Latvian and, possibly, what is sometimes referred to as the Eastern European scientific style. Therefore, a brief enumeration of these features follows.

1. On the lexical level – native or borrowed (unambiguous) terms, designations of realia, a large number of abstract terms, limited use of emotionally marked words and expressions, and figurative language devices in specific functions and, generally, within certain disciplines.
2. On the syntactic level – the passive voice, which ensures objective and logical representation, declarative sentences in the indicative mood, rhetorical questions regarded as “disguised declarative sentences” (German: *getarnte Aussagesätze*) or, in scientific polemics, a question followed by an answer. Among sentence constructions, hypotaxis (subordination of clauses) plays a particularly significant role (Riesel, 1963, p. 449).
3. Stylistic/rhetorical elements – parallelism, antithesis, enumeration, and repetition, which may serve objectivity, logic, and facilitate easier comprehension of the text (*ibid.*, p. 450).
4. Elements shaping the structure of the text, which ensure objectivity, logic, clarity and ease of comprehension – linguistic formulations marking paragraph and section transitions, special “structure words” (German: *Gliederungswörter*), e.g., firstly, secondly, etc., or phrases introducing a new idea (German: *Vorreiter*), e.g., It is worth mentioning that [...] etc. Phrases typical of general scientific language play an important role in ensuring text cohesion – references that link a part of the text to previous or subsequent content (German: *Mittel der Verzahnung*) (Riesel, 1963, pp. 451–452).

As a stylistic feature, Riesel also describes the presence of the author in the text, where, instead of the first-person singular pronoun “I” (German: *ich*), the noun “author” (German: *der Verfasser*) is used to ensure objectivity and modesty (German: *Objektivität und Bescheidenheit*). Exceptions are permissible if the author’s viewpoint is being distinguished from other perspectives represented in the literature. Another form, also observable in contemporary Russian scientific texts and sometimes in Latvian, is the plural form “we” (German: *wir*), the so-called “modesty plural” (German: *Plural der Bescheidenheit*), which is recommended to be avoided. The “we” form is considered permissible if it signals the involvement of the reader (German: *Plural der Gemeinschaftlichkeit*, i.e., “plural of collectiveness”) (Riesel, 1963, p. 451).

In summary, scientific style is characterised by objectivity, precision and unambiguity, abstractness, logicity and clarity, the use of unambiguous terms, impersonality, nominal style, complex syntactic structures, and a clear text structure. Many of these phenomena are also included

in the description of the Latvian scientific style by Rozenbergs, as well as, with different terminology, in the subsequent analysis of metadiscourse.

Rozenbergs, when characterising the Latvian scientific style, mentions adherence to the norms of literary language, its monologic nature, precision, clarity, facts, analysis, conclusions, formulations and definitions, logical text structure, the use of specialised terminology and internationalisms, the use of explanatory and parenthetical words and constructions, as well as quotations, and, syntactically, the frequent use of compound sentences (Rozenbergs, 1995, pp. 83–84).

This characterisation of the Latvian scientific style, albeit in a less detailed form, coincides with Riesel's general and language-specific (German) description of scientific style. At the same time, in research into academic communication, especially from a comparative perspective, the analysis of culture-specific stylistic differences is also popular. These differences, which stem from the influence of the authors' scientific socialisation environment, affect texts at both the macrostructural and microstructural levels. The first to describe these differences was Robert Kaplan in 1966, in connection with observations on the acquisition of English as a foreign language (Kaplan, 1966), thus laying the foundation for the later field of contrastive rhetoric.

Concerning scientific/academic style (in a broader context – intellectual style), one of the earliest and still frequently cited works is Galtung's essay "Structure, culture, and intellectual style: An essay comparing Saxonic, Teutonic, Gallic and Nipponic approaches" (1981), which was followed by many detailed publications devoted to the study of culture-specific academic styles, e.g., Clyne (1987), Vassileva (2000), Kotthoff (2002), and others. It should be noted that alongside the rather extensive characterisations of Anglo-Saxon, Teutonic, Gallic, and Nipponic styles, which Galtung (1981, p 820) himself describes as "a first approximation", Eastern Europe, including the Soviet Union, is also mentioned, and the style used there is marked as being under the influence of the Teutonic style: "[...] Eastern Europe, including the Soviet Union, may be considered as an area influenced by the Teutonic intellectual style, partly due to general cultural influence over the centuries, partly due to the influence of a significant Teutonic thinker – Karl Marx" (ibid.).

Clyne, continuing Galtung's insights based on German and English linguistic and sociological texts, focused on the contrast between linearity/digressiveness, symmetry/asymmetry, hierarchy and sequence, as well as the inclusion of extra-textual elements (e.g., tables, diagrams, etc.) in the texts analysed. The results show that the differences between the two scientific cultures arise from differences in intellectual styles, educational traditions, and attitudes towards knowledge and content (Clyne, 1987). From this conclusion arises the view that stylistic differences should be included in academic language acquisition courses, thus fostering mutual understanding in international scientific communication (ibid., p. 239).

At the beginning of the 21st century, publications appeared focusing on research into the so-called Eastern European style. Here, mention should be made of Breikopf's Doctoral Thesis (Breikopf, 2006), devoted to a single discipline – sociology – and the comparison of Russian and

German languages, with a broader consideration of manifestations of subjectivity. In subsequent publications, the following features are listed as characteristic of the Eastern European (Russian) scientific style: lack of clear structure (continuous text without division into sections), inclusion of side topics (a feature of digressive style), lack of textual coherence (assuming background knowledge on the part of the reader), impersonal and categorical formulations (Breitkopf & Vassileva, 2007, p. 224).

The specificity of the Latvian scientific style has been addressed in several publications. Its formation is regarded primarily as a result of cultural contact and as a dynamic, externally determined, changing process (Veisbergs, 2003; Dubova, Leitāne, & Lele-Rozentāle, 2009; Niedre, 2015; Dubova, 2023). It should be noted that previous observations and conclusions have been made based on differing methodologies (evaluation of the role of external factors, analysis of individual (comparative) phenomena), so it is premature to speak of the inclusion of the Latvian scientific style within a specific internationally recognisable intellectual/academic style.

Therefore, the following questions are currently relevant:

1. What are the culture-specific features of the Latvian scientific style?
2. What challenges may Latvian researchers face when integrating into various scientific communication environments?

In order to answer these questions, it is necessary to address the research criteria and the choice of methodology that would allow for the analysis of the style of scientific texts in one language and in comparison, thus providing an understanding of the most significant differences, for example, from the *lingua franca*, and, based on these differences, to organise, for instance, the teaching process in the acquisition of academic writing techniques.

Paper structure as an element of scientific style

Primary publications:

Egle, Baiba; Tomase, Kristīne (2020) Zinātniskā raksta specifika sociālajās zinātnēs. Vārds un tā pētīšanas aspekti : rakstu krājums, 24 (1/2). Gunta Smiltņiece, Linda Lauze (eds.). Liepāja: LiePA, 2020, 280–288.

Dubova, Agnese; Egle, Baiba; Proveja, Egita (2020). IMRAD usage in Latvian language research papers. *Proceedings of CBU in Social Sciences*, 1, 33–39.

Egle, Baiba; Kopankina, Iveta; Tomase, Kristīne (2021). Zinātniskais raksts un tā makrostruktūra. 5. Sociālās zinātnes. Agnese Dubova (ed.) *Zinātnes valoda: stils, teksts, konteksts*. Rīga: Zinātne, 145–151.

In Latvian academic culture, the structure of a scholarly article is often taken for granted, and perhaps for this reason, the issue has not been explored in depth to date. There are relatively few studies on the types and structure of scientific texts in the Latvian scientific language, including the specifics of scientific articles. Baltiņš (2003) provides a brief overview of the types of scientific articles and describes the IMRAD structure within them. Meanwhile, Mārtinsone, Pipere, Dambrova et al. (2018) analyse the types and structure of scientific articles, drawing on secondary literature concerning medical and psychological papers.

When discussing the structure of scientific articles, it is important to distinguish between a continuous text and a text based on the IMRAD format. One of the main prerequisites for a scientific article to meet publishers' requirements is adherence to a specific structure, which is often IMRAD. Sollaci and Perreira (2004) found that this structure was initially used in journals such as the *British Medical Journal*, *JAMA*, *The Lancet*, and the *New England Journal of Medicine* as early as the 1940s. Its usage increased, reaching 80 % of all article structures in the 1970s, thereby becoming the dominant format in the medical sciences. It should be noted that the aforementioned journals are published in English-speaking countries, and the prevalence of the IMRAD structure in other cultures may differ. Nevertheless, due to the influence of globalisation, many scientists write in English to achieve success, and therefore must be familiar with the requirements of various publishers. This structure offers several advantages, such as clarity, logical flow, and sequential order, which form the basis of scientific style.

However, despite differences (continuous text or IMRAD structure), articles generally contain the following structural elements:

- 1) an introduction, in which the research problem, novelty, and aim of the study are described;
- 2) materials and methods used;
- 3) research results and their evaluation;
- 4) conclusions and recommendations;
- 5) list of references;
- 6) summary in a foreign language (or languages).

In the social sciences, humanities, and arts, the structure of texts is determined by the topic and methodological approach, and their format is not as standardised as in the natural sciences. Consequently, the broad range of fields and topics suggests that texts in the social sciences will be structurally diverse. In the more closely examined subfields of the social sciences (psychology, education, sociology, and political science), the content and structure of articles differ.

In psychology, article topics can be very broad – ranging from historical overviews of the field's development to descriptions of issues affecting specific groups of people. As in medical subfields, strict anonymity and privacy of subjects are maintained, providing only general data characterising respondents (e.g., age groups or the statement “17 years old”, etc.). Articles

frequently mention the instruments and surveys used, and often include an extensive literature review with references to both Latvian and international studies.

In educational sciences, articles are characterised by an impressive list of references, often citing works by the same author published over different periods. This is done in part to enhance the author's credibility, demonstrating extensive prior knowledge.

Sociology articles are structurally similar to those mentioned above; however, in this field, large volumes of data are often presented in tables but not described in detail in the text.

In political science, articles typically contain long lists of references in various languages, as well as large amounts of statistical data, which are often presented in tabular form. As a result, statistical terminology is frequently encountered in political science articles.

To determine the specific use of the IMRAD structure in different scientific fields, a pilot study was conducted based on the guidelines of the Frascati Manual (2015). Scientific articles were selected from the natural sciences, engineering and technology, social sciences, humanities, and arts. The selection of texts for the study was made from the websites of Latvian universities and research institutes – mainly from open-access scientific journals and collections of articles published online between 2008 and 2018. The study corpus included scientific articles in Latvian from all the aforementioned fields: 114 from the natural sciences, 182 from engineering and technology, 211 from the social sciences, and 251 from the humanities and arts (see Fig. 2.4). The number of different texts is determined by their public availability.

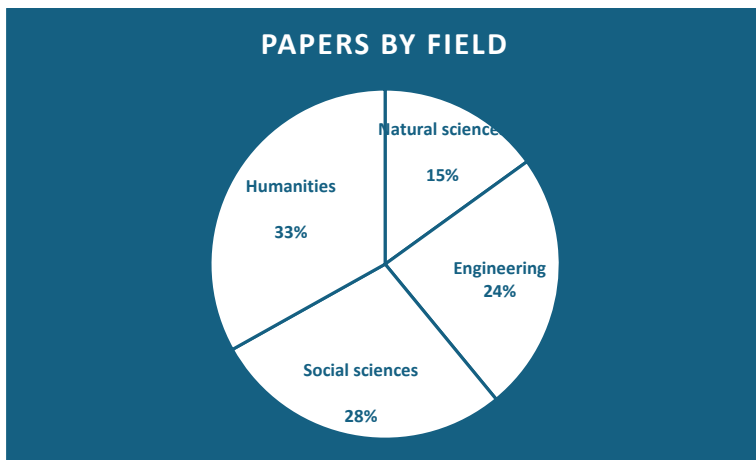


Fig. 2.4. Distribution of papers by field in percentages (2008–2018). Visualised by B. Egle based on data in Dubova, Egle, and Proveja (2020).

A qualitative analysis of scientific articles indicates that the use of the IMRAD structure in Latvian varies considerably across different scientific fields. Overall, the IMRAD structure

prevails in the natural sciences. This is generally attributed to internationally established conventions for scientific writing in English and their influence on how authors approach writing in Latvian. Authors often merge individual main sections or subdivide them further, choosing the macrostructure that best suits the presentation of their research. This is also reflected in the titles of respective sections, for example, “Methods Used” and “Research Results”, among others.

In the social sciences as well as the humanities, significant differences between disciplines can be observed. Corpus material shows that, for example, in articles on literary studies, it is often difficult to determine the structure due to the continuous nature of the text, as the organisation of the article is determined by the specificity and tradition of the research.

The results of the analysis suggest that Latvian authors construct the macrostructure of scientific articles primarily based on the nature of the research and the most suitable form for its presentation. Frequently, the article’s structure depends on the requirements set by publishers, which, in turn, may be influenced by the discipline and scientific culture. Thus, the structure is not always solely the author’s choice, but also depends on the place of publication. In the context of the Latvian language, this issue has not yet been widely studied, but it is topical and should be explored further to determine current trends and how Latvian researchers use it in their work in both Latvian and English, as well as how it should be taught during the study process.

Argumentation as part of the structure

Primary publication:

Lele-Rozentāle, Dzintra; Laiveniece, Diāna; Dubova, Agnese; Egle, Baiba (2021). *Possibility of Determining Argumentation in Social Science Articles: The Case of Latvian. Proceedings of CBU in Social Sciences*, 2, 223–229. <https://doi.org/10.12955/pss.v2.225>

The argumentation presented within such article structures is closely linked to their composition. Argumentation serves as a means for generating new knowledge and, as an integral component of scholarly writing, is one of the cornerstones of academic discourse. However, at least in Latvian-language academic writing, the types of argumentation still largely belong to researchers' tacit knowledge. These implicit forms of knowledge are difficult to investigate, as disciplinary differences, individual authorial style, and journal traditions create a complex, interrelated network of information.

To address this issue, the argumentative zoning (AZ) method can be employed, which enables the annotation of texts to reveal their interrelated aspects, thereby uncovering text structures that are not as explicit as the IMRAD format. Argumentative zoning thus constitutes an analysis of the argumentative and rhetorical structure of a scientific article. Research demonstrates that this method can be successfully applied by trained annotators and is useful for various information access tasks (Teufel, Siddharta, & Batchelor, 2009, p. 1493).

The following describes results obtained by trained annotators performing argumentative zoning on social science texts in Latvian.

It should be noted that zoning makes the content of a text more transparent. The developed theory (Teufel, 1999; Teufel et al., 1999) with seven zones does not encompass all possible aspects of a scientific text; for example, it does not address the description of the research, organisational elements of the text, or illustrative material, but rather focuses on arguments. These seven zones are: (1) background, (2) intertextual references (other), (3) author's own contribution (own), e.g., method, results, further perspectives, (4) aim of the research (aim), (5) textual structure (textual), (6) contrast, comparison, shortcomings of other studies (contrast), and (7) reliance on the work of other authors (basis) (Teufel, 1999, p. 109). By marking each of these analytical criteria with a different colour, it is possible to obtain a visually clear, argumentation-based structure of the text.

The aim of the pilot study employing argumentative zoning was to test the initial hypothesis that the proportion of argumentation is directly related to the choice of IMRAD structure in scholarly articles, particularly with regard to the discussion section.

To test this hypothesis, 20 social science articles in Latvian published in a university's annual proceedings between 2015 and 2018 were selected. The prerequisite was the use of different structures in the selected texts.

The selection of articles for the study was as follows.

- Eight articles that strictly adhere to the IMRAD format: they contain an introduction, a separate section for research aims, a description of materials and methods, presentation of results, discussion, and conclusions.
- Six articles that partially conform to the IMRAD structure: for the most part, these lack a discussion section, which is a crucial part of the article where argumentation would typically be developed.
- Six articles that do not follow the IMRAD format: these are texts based on thematic exposition, and their content is not structured according to IMRAD principles.

One of the types of argumentation in scholarly works is closely related to comparison and the inclusion of critical remarks. The study shows that half of the analysed articles contain comparisons with other research and clearly indicate the shortcomings of previous studies. Signal words such as “similarly”, “resonates with”, and “identical” are used to express comparison; to indicate differences, phrases like “differs from” and “differs in” are used. To emphasise the shortcomings of previous research, conjunctions such as “although”, “even though”, and “however” are employed. Critique often includes naming problems (“the main problem”, “the fundamental issue”), as well as substantiated refutation or suggestions regarding the circumstances

under which the research would be applicable. Recommendations are often formulated as necessities or wishes.

The conclusions of the study indicate that there is no direct correlation between the IMRAD structure and the actual proportion of argumentation; thus, the initial hypothesis was not confirmed. The results of the analysis show that the use and proportion of arguments depend on the article's purpose (the author's understanding of the necessity for argumentation), the chosen method, and the author's experience. Argumentation is widely represented in the discussion section (IMRAD), but is also present in the thematic development of uninterrupted texts. However, in descriptively oriented studies, even if the IMRAD structure is formally chosen, argumentation remains limited. This leads to the conclusion that there is a need to highlight the fundamentals of academic writing in school and university programmes, including text structure, methods of analysis, and the development of argumentation skills.

Wording in contemporary Latvian academic writing

Main publication:

Lele-Rozentāle, Dzintra; Egle, Baiba (2018). Vārdkopas mūsdienu latviešu zinātnes valodā. Starpdisciplināri orientētas korpuslingvistiskas analīzes rezultāti. *Vārds un tā pētīšanas aspekti* 22(1), 92–100.

When writing a summary of a doctoral thesis, it is essential that one version is in Latvian and another in a foreign language. This foreign language is often English, but the summary may be written in any other foreign language, provided the choice of language is coordinated with the relevant academic institution. The pilot study conducted focused only on texts written in Latvian.

As with primary scientific texts (e.g., published articles), it is also important for the summary of a doctoral thesis to explain its aim. A doctoral thesis is more extensive in scope and depth of discussion than the information presented in a single article; therefore, it is important to observe how early-career researchers formulate their research aims. Obtaining a doctoral degree is a significant step in the development of an academic career, and the doctoral thesis, along with its associated texts, demonstrates the writing skills of the emerging scholar.

In the pilot study of doctoral thesis summaries, 456 texts produced between 2007 and 2017 were analysed. The texts were examined using the software *AntConc*, which provides broad opportunities for quantitative text analysis. The study focused on words and word combinations of general usage, not tied to any specific scientific field, in accordance with Ehlich's (1999) concept of general scientific language. This general scientific language is applicable both in intra-disciplinary scientific communication and in interdisciplinary interactions.

The linguistic material analysed in the study reveals that a doctoral thesis may have one or several aims, typically formulated as *Aim of the Thesis* or *Aim of the Doctoral Thesis*.

Sometimes, early-career researchers distinguish between the *theoretical* and practical aims of their work.

The aim may also be formulated using:

- 1) a superordinate and subordinate concept;
- 2) a structural enumeration, e.g., firstly, secondly, etc.;
- 3) a thematic delimitation in a negative form, e.g., *The aim of the thesis is not to refute...* etc.

In terms of tense usage, the aim of the study may be expressed using *is* or *was*. Verbal phrases are predominant, for example, *to develop* + (*what?*). In the text, authors usually focus on completeness and achieving results – *to investigate, to analyse how, to explore...* etc.

A linguistic analysis of doctoral thesis aim statements reveals a multifaceted phenomenon. Firstly, the conceptual framework of the aim differs, which is seen in its macrostructure and description. Secondly, significant differences are evident in the formulation itself – specifically, how the noun is integrated into the text, for example, as a heading followed by a verb in the infinitive, or as a nominal construction. Thirdly, the type and tense of the verb used are also significant in the aim's formulation.

The sources analysed in this section – Doctoral Thesis Summaries – allow for the identification of stylistic choices at the microstructural level, regardless of the traditions of the relevant scientific field. This study may be useful for determining more detailed textual and phraseological features of secondary texts – doctoral thesis summaries – both in examining general phenomena and in exploring texts within specific disciplines.

A comparison of the empirical material, when examining texts without differentiating between scientific fields, confirms that there is considerable variety in the formulation of aims, including synonymy.

The results of this pilot study indicate the need to develop a support tool for writing doctoral thesis summaries, so that early career researchers can effectively describe the aims and processes of their research. Such a tool could be a continuation of the digital tool and phrase collection described in Section 2.3.

Metadiscourse as a bridge in the process of scientific writing

Main publications:

Dubova, Agnese; Laiveniece, Diāna; Egle, Baiba; Lele-Rozentāle, Dzintra (2023). Metadiskursa analīzes teorija latviešu zinātnisko tekstu *Linguistica Lettica* 32, (2023), 170–196.
Djuddah A. J. Leijen; Hint, Helen; Lemendik, Helena; Egle, Baiba; Ruskan, Anna; Johansson, Christer (2024). Cross-linguistic patterns of meta-discourse: disciplinary Similarities and Section-

based differences. *Eesti rakenduslingvistika ühingu aastaraamat*/Estonian papers in applied linguistics, 20, 115–132.

Hint, Helen; Ruskan, Anna; Lemendik, Helena; Egle Baiba (2024) “At the end of this study, see the following discussion”. Endophoric markers in Estonian, Latvian, and Lithuanian research articles. *Eesti rakenduslingvistika ühingu aastaraamat*/Estonian papers in applied linguistics, 2024, 20, 45–62.

Egle, Baiba; Viļums, Atūrs (2021). *Autorība un bezpersoniskums* [Authorship and impersonality]. *Zinātnes valoda: stils, teksts, konteksts*. Rīga: Zinātne, 186–190.

When a researcher seeks to become part of the global scientific community, it is assumed that they are familiar with the writing style and traditions characteristic of their field, as well as the linguistic features of the language in which the scientific work is written. As mentioned previously, one way to “integrate” into the international scientific environment, which primarily communicates in English, is to know and adhere to the conventions of scientific writing typical of this environment. The structures examined in previous sections can be very useful on their own; however, if the author additionally employs metadiscourse elements in their text, regardless of whether the article is written in English or Latvian, their arguments and research findings are perceived by readers more clearly and effectively. The first challenge in this process is the reviewers during the publication’s evaluation stage, but after the article is accepted, it is the journal’s readers.

Readers are accustomed to encountering certain linguistic elements in the text – connectors, examples, quotations, references, words and phrases expressing various modalities, etc. – which help them navigate, guide the reading process, and maintain engagement with the reader. These elements can be both interactive and interactional. The interactive and interactional metadiscourse model used here was developed by Hyland and published in his work “Metadiscourse: Exploring Interaction in Writing” (2005). It can be used as a kind of “bridge” to master the scientific writing styles accepted in the global academic environment, especially today, when the dominance of English as a *lingua franca* is undeniable. The ability to write according to academic English standards often requires a lengthy learning process, including working with authentic scientific texts written in English.

Since each researcher's writing style differs to some extent individually, as well as depending on the scientific field or even the traditions of a single discipline, metadiscourse and its markers can serve as a unifying tool that helps ensure the written text meets the expectations of readers and reviewers.

The model proposed by Hyland (2005, p. 49) (see Fig. 2.5) in its original English version reflects the categories of metadiscourse markers, their functions, and includes examples that are widely used in English scientific texts.

Category	Function	Example
Interactive resources	Help to guide the reader through the text	
Transitions	Express relations between main clauses	In addition, but, thus, and
Frame markers	Refer to discourse acts, sequences or stages	finally, to conclude, my purpose is
Endophoric markers	Refer to information in other parts of the text	Noted above, see Fig, in section 2
Evidentials	Refer to information from other texts	According to X, Z states
Code glosses	Elaborate propositional meanings	Namely, e.g., such as, in other words
Interactional resources	Involve the reader in the text	
Hedges	Withhold commitment and open dialogue	Might, perhaps, possible, about
Boosters	Emphasize certainty and close dialogue	in fact, definitely, it is clear that
Attitude markers	Express writer's attitude to proposition	Unfortunately, I agree, surprisingly
Engagement markers	Explicitly build relationship with reader	Consider, note, you can see that
Self-mentions	Explicit reference to author (s)	I, we, my, me, our

Fig. 2.5. Metadiscourse model by Hyland (2005, p. 49).

Differences in the selection and frequency of metadiscourse markers may exist across various scientific disciplines and cultural styles. Depending on the author's field, discipline, and adherence to a particular scholarly style, a more intensive use of certain metadiscourse markers may be expected, whereas in other cases, some elements of metadiscourse are either not used at all or are employed only to a very limited extent. For example, Latvian linguistics texts rarely utilise engagement markers, the presence of which has been identified in texts published in English (see Hyland's examples in Fig. 2.5).

An understanding of metadiscourse and the most commonly used markers can provide significant advantages for academic authors. For instance, boosters help to reinforce the arguments put forward, while evidentials provide factual support for claims and increase the credibility of the text.

In the initial studies of Latvian academic writing, metadiscourse was not analysed in depth, either qualitatively or quantitatively. The situation began to change at the beginning of the 21st century, when the study of scientific language established itself as a distinct branch of linguistic research. Before this, attention was mainly focused on lexis, especially terminology, which remains a relevant field.

Metadiscourse – linguistic and rhetorical devices that an author may deliberately use during the process of text construction – holds particular significance in academic language. On the one hand, these devices shape the language style characteristic of scholarly texts, while on the other hand, they serve as instruments for achieving the author's aims, allowing the author to position themselves within the text and to engage with the reader. Knowledge of metadiscourse devices, their usage, and their role in text formation influences the relationship between author and reader, as well as attitudes towards the text – it is no longer perceived solely as a source of information and ideas, but also as a social act involving interaction between the addresser (speaker or writer) and the addressee (listener or reader).

The study of metadiscourse and its individual markers has grown considerably over the past twenty years, particularly in the analysis of scholarly texts (see, for example, Dahl (2004), and Ruskan et al. (2023), among others). These studies confirm that, in the process of text production, understanding and interpreting both reading and writing skills are essential, as is the mutual interaction between author and reader, in order to achieve a shared level of understanding or consensus of thought.

Metadiscourse is important both in informal, spontaneous conversations and in carefully constructed texts of a particular genre, where deliberately chosen lexis and structure serve to clarify and connect ideas, justify arguments, express attitudes, facilitate thematic transitions, and so on.

A pilot study was conducted for its investigation, with the following aims:

- 1) to demonstrate the usefulness of metadiscourse in the analysis of Latvian academic texts, and
- 2) to identify potential issues in the identification of metadiscourse markers.

Thirty scholarly articles were selected for the study, according to the following criteria:

- the articles are written in Latvian;
- the field of research is linguistics;
- each article has a single author;
- no author is represented by more than one article in the dataset;
- the articles were published between 2020 and 2022;
- the articles were selected from various peer-reviewed linguistics journals.

The study employed metadiscourse analysis as its method, examining 7 022 linguistic units in accordance with the previously mentioned metadiscourse analysis model by Hyland.

The main results obtained from the analysis were as follows.

Interactive markers:

- *transitions* – 1 393, or 19.84 % of all markers;
- *frame markers* – 260, or 3.70 %;
- *endophoric markers* – 97, or 2.80 %;
- *evidentials* – 548, or 7.80 %;
- *code glosses* – 3 035, or 43.14 %.

(see percentage distribution in Fig. 2.6)

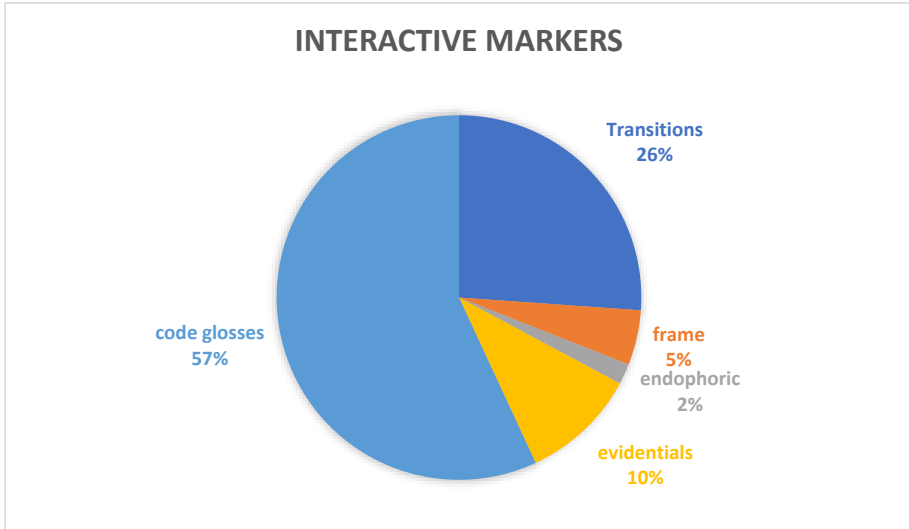


Fig. 2.6. Percentage proportions of interactive markers. Visualisation by Baiba Egle based on the data of Dubova et al. (2023).

Interactional markers:

- *hedges* – 313, or 4.46 %;
- *attitude markers* – 357, or 5.3 %;
- *engagement markers* – 77, or 1.10 %;
- *self-mentions* – 121, or 1.72 %.

(see percentage distribution in Fig. 2.7)

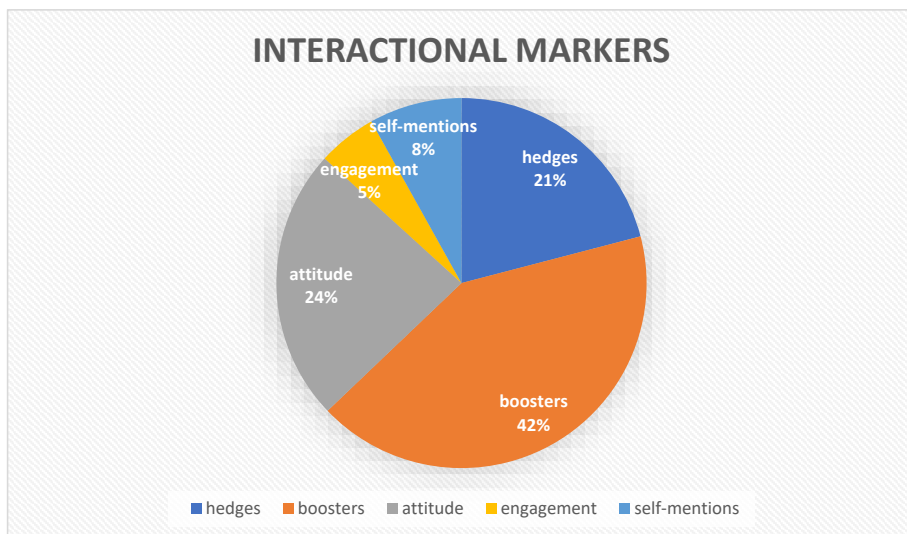


Fig. 2.7. Percentage of interactional markers. Visualisation by B. Egle based on the data by Dubova et al. (2023).

Metadiscourse markers are significant elements in the representation of linguistic and cultural signs, and therefore, they play an essential role both in scientific writing and in the acquisition of academic writing skills.

The articles analysed in this way show that all types of metadiscourse markers identified by Hyland are present in Latvian academic writing practice, although their usage intensity varies. Interactive markers are used most frequently, as authors in the field of linguistics widely employ code explanations and transitions. Among interactional markers, boosters are the most commonly encountered.

The results of the study also highlight the specificity of writing culture – statistics on the use of metadiscourse in Latvian may differ significantly from practices in other languages, opening up opportunities for further comparative research.

A broader overview follows regarding the use of two types of markers – endophoric markers (interactive markers) and author presence markers (interactional markers) – in social science texts in Latvian.

As previously indicated, metadiscourse markers can differ across languages. Below is the first detailed insight into the use of endophoric markers in the languages of the Baltic States. The pilot study emphasised the importance of smaller academic languages and less studied writing traditions. For this purpose, attention was paid to three Baltic languages that are geographically

and historically closely related but typologically and culturally distinct: Estonian, Latvian, and Lithuanian.

The focus was on one category of interactive metadiscourse markers – endophoric markers. The aim of the study was to determine how the use of endophoric markers in scientific articles provides insight into writing traditions in the three Baltic States by analysing the prevalence and application of these markers in the field of linguistics. The question was posed whether the selection of endophoric markers is more influenced by language and/or writing tradition factors, or by disciplinary conventions. Since endophoric markers have received less attention in metadiscourse studies to date, this research also contributed new insights to the analysis of the metadiscourse model by explaining in detail the structure of endophoric markers and their usage resources in scientific articles.

The study used a self-compiled corpus consisting of scientific articles in Estonian, Latvian, and Lithuanian. The articles cover ten years, from 2011 to 2021, and represent the field of linguistics. Three linguistics journals were selected for each language, except for Latvian, where four journals were used due to the small number of suitable articles. The corpus included only articles written by a single author in their native language, ensuring that no more than one article per author was included. All texts were analysed in full, but parts of the text not relevant to metadiscourse analysis – such as abstracts, tables, figures, lists of references, longer quotations, short quotations, etc. – were excluded.

The prevalence of endophoric markers in the Latvian language data is the lowest among all three languages – they constitute only 4.8 % of all metadiscourse markers ($n = 7017$) in the corpus. The most frequently used endophoric markers are visual elements (66.7 %). Preview and retrospective markers are evenly distributed – 12.1 % each. The use of endophoric markers for indicating examples is significantly lower than in Estonian and Lithuanian – only 3.5% of all endophoric markers. Endophoric markers referring to the entire text are relatively rare – 5.6 %.

In Latvian linguistics articles, authors enjoy relatively great freedom in structuring their texts – an introduction, main body, and conclusion are expected, but journals do not prescribe other mandatory sections. Most guidelines concern technical aspects, such as fonts and reference formats, and often only remind authors of the necessity of an introduction and summary. As a result, most endophoric markers appear in sections that can be described as “other” – even if authors use subheadings, they do not conform to the IMRAD structure, and, depending on the article topic, methods or discussion sections may not be clearly separated. Exceptions include 12 preview endophoric markers in introductions, two retrospective markers in conclusions, and one retrospective marker in an introduction. This structural freedom is likely a key factor influencing the use of endophoric markers in Latvian. If journals prescribed a strict article structure, the frequency of their usage might change.

Academic integrity requires that every published article has an identifiable author or group of authors who express and defend the presented viewpoint. Scientific articles and other scholarly works typically indicate the author, authorship group, or institutional affiliation.

However, one of the generally accepted norms of good scientific practice is an impersonal manner of expression. Discussions about this issue have been ongoing since the early 20th century. One of the first linguists to express his position was Norman Campbell, who already in 1928 wrote in “Nature” that the use of the third person in scientific writing is a temporary trend and that replacing the first person with the third is not a positive development, but rather leads to unnecessary and disruptive repetition (Campbell, 1928).

Campbell's prediction that impersonal expression in science would be short-lived has not come true, as readers of both Latvian and English expect author neutrality and detachment. Christopher Gledhill emphasises that “scientific articles are not impersonal and neutral, and although traditional idioms may not be encountered, they use forms of expression that are just as 'idiomatic' as any other discourse” (Gledhill, 2000, p. 2). The form of expression in a scientific article is created through the interaction of the author's choices and the structural and formal requirements set by the publisher.

In Latvia, this aspect of scientific language has been studied relatively little. As Laiveniece concludes, some authors in the humanities, when describing their research, adhere to impersonal or generalised expression, though in certain cases direct or indirect use of the first-person form *es* (I) also occurs. She emphasises that it is important to understand forms of objective expression in science, and for this purpose, broader studies are needed not only in the humanities but also in the social and natural sciences (Laiveniece, 2010).

When analysing texts that address research problems or results, indirect first-person presence is often observed, manifested in verb forms in various tenses (e.g., *secinu*, *apskatīšu*, English: *I conclude*, *I will examine*, etc.). Very rarely are direct introductions used, such as *manuprāt* (in my opinion) or *mūsaprāt* (in our opinion).

In scientific texts, impersonality is most often achieved using passive constructions, where author neutrality is not expressed with the noun *autors/autore* (*author*), but rather with the passive form of the verb, e.g., *pētīts* (studied), as well as with other similar verbs in the same voice.

Here, only a brief overview is provided of the issues surrounding impersonal expression style and author presence in Latvian scientific language. Although most authors strive to follow the requirements of scientific style and minimise their presence in the text, in certain cases, first-person forms *es* (I) and *mēs* (we) are used, especially when the article is authored by a group. In this regard, in-depth and multifaceted studies are needed, both concerning usage in specific structural parts of the text and across different time periods and disciplines.

Cross-linguistic and cross-journal comparisons confirm the significance of metadiscourse markers. Within a single discipline, e.g., linguistics, variation in metadiscourse models between journals is generally small, and differences most often appear only in certain sections of article structure. However, expanding the analysis to other disciplines, e.g., social or medical sciences, it is possible to discover significantly different patterns of metadiscourse usage or confirm existing trends.

When comparing different languages, disciplinary differences are not always significant. Much more important can be cultural and rhetorical norms, which influence, for example, the use of author presence signals (*es, mēs*). Although similarities may exist within disciplines across languages, more detailed comparisons between journals of similar profiles in different languages may reveal considerable differences both in article structure sections and in interactional metadiscourse categories.

A comparison of Lithuanian and Estonian journals shows that certain strategies for guiding the reader through the text can be particularly important in specific types of articles that dominate in the respective journals.

To fully verify these conclusions, it would be necessary to expand the study corpus to include more languages and a broader range of disciplines. This would allow for quantitative and qualitative characterisation of metadiscourse activity in various linguistic cultures and academic contexts.

2.3. Applied Aspects of Academic Writing

Phrasebank tool for academic writing support in Latvian

Main publication:

(www.zinatnesvaloda.lv [The language of science. Digital resource]. Agnese Dubova (ed.), Diāna Laiveniece, Dzintra Lele-Rozentāle, Dzintra Šulce, Egita Proveja, Raita Rollande, Baiba Egle, Iveta Kopankina, Līva Vecvagare, Artūrs Viļums, Raitis Ralfs Vecmanis, Sindija Ansberga, Veronika Mahmudova, Ance Putniņa, Dana Tihomirova, Kristīne Tomase (2021). <https://repository.clarin.lv/repository/xmlui/handle/20.500.12574/30>

One of the most popular practical guides for pupils and students in the field of academic writing is Laiveniece's publication on practical academic writing (Laiveniece, 2014). Although printed books remain important sources of information, their accessibility is limited – if the required literature is not available in the local library, the user must travel to another library, which requires additional time and resources. In contrast, a freely accessible, easy-to-use website that operates on both computers and mobile devices provides swift access to academic writing support.

The website “*Zinātnes valoda*” was developed as a clear and user-friendly digital tool, useful for the planning and preparation of scientific texts at various educational and research levels. It is intended for a broad audience of Latvian scientific language users – pupils, students, lecturers, and researchers.

The website includes descriptions of types of written scientific texts at the school, university, and research levels (e.g., student scientific research papers, bachelor's theses, scientific articles, etc.). For each text type, there is a translation of the title in English, Russian, and German, a brief explanation, and a detailed structural description. These descriptions are supplemented by

references to literature where further information can be found. To deepen the understanding of scientific language, the website also contains a glossary of terms, explaining concepts such as research object, bibliographic reference, hypothesis, and others.

Model phrases, organised according to the introduction, main body, and conclusion of a scientific text, as well as by textual cohesion and citation formation, assist in composing scientific texts and formulating insights. The word groups were selected by analysing a text corpus comprising 3 344 265 word forms, which includes Latvian scientific articles from various fields (2008–2018). The corpus was created within the framework of the fundamental and applied research project “*Latvian Scientific Language in an Intralingual Aspect*”, implemented by Ventspils University and Liepāja University with funding from the Latvian Council of Science.

The word groups are based on a broad corpus analysis and modelled after the Manchester academic database, adapted to the needs of Latvian academic writing. Each word group has been verified using corpus linguistic methods with *AntConc* concordance tools, thereby ensuring its alignment with authentic scientific language.

This online tool is currently maintained by Ventspils University (see Fig. 2.8).

	Views	Active users	Views per active user	Average engagement time per active user	Event count	Key
Total	28,043 100% of total	8,289 100% of total	3.38 Avg 0%	42s Avg 0%	63,497 100% of total	
<input checked="" type="checkbox"/> 1 Zinātnes valoda	10,887 (38.82%)	7,298 (88.04%)	1.49	0s	34,480 (54.3%)	
<input checked="" type="checkbox"/> 2 Sākums - Zinātnes valoda	4,639 (16.54%)	1,779 (21.46%)	2.61	24s	6,525 (10.28%)	
<input checked="" type="checkbox"/> 3 Frāzes - Zinātnes valoda	2,594 (9.25%)	1,411 (17.02%)	1.84	50s	4,837 (7.62%)	
<input checked="" type="checkbox"/> 4 Glosārijs - Zinātnes valoda	2,446 (8.72%)	948 (11.44%)	2.58	37s	3,161 (4.98%)	
<input checked="" type="checkbox"/> 5 Tekstu veidi - Zinātnes valoda	1,095 (3.9%)	307 (3.7%)	3.57	21s	1,230 (1.94%)	
<input type="checkbox"/> 6 Argumentētā eseja - Pētniecība skolā - Zinātnes valoda	639 (2.28%)	637 (7.68%)	1.00	37s	1,502 (2.37%)	
<input type="checkbox"/> 7 Skolēna zinātniski pētnieciskais darbs - Pētniecība skolā - Zinātnes valoda	585 (2.09%)	326 (3.93%)	1.79	40s	845 (1.33%)	
<input type="checkbox"/> 8 Bakalaura darbs - Pētniecība augstskolā - Zinātnes valoda	484 (1.73%)	236 (2.85%)	2.05	27s	650 (1.02%)	
<input type="checkbox"/> 9 Izmantotā literatūra - Zinātnes valoda	371 (1.32%)	213 (2.57%)	1.74	17s	586 (0.92%)	
<input type="checkbox"/> 10 Referāts - Pētniecība skolā - Zinātnes valoda	350 (1.25%)	351 (4.23%)	1.00	36s	817 (1.29%)	

Fig. 2.8. Website visitor data (from 1 January to 8 October 2025) for www.zinatnesvaloda.lv from Ventspils Augstskola webmaster. Source: Private correspondence with the website webmaster.

The webmaster also shared this data: *This year (up to 8 October 2025), the website has had 8.3 thousand visitors. Most of the visitors (3.5 thousand) come via Google searches, while many others (around 1.4 thousand) access the site directly, which may indicate that the website has become a familiar and frequently used tool* (Private correspondence with VA webmaster, 2-025).

The real-time visitor numbers are not visible to regular users, but this update on the website visitor numbers shows that this type of modern resource, which is available free of charge, usable on any device a person has, is a research result that is not only scientifically valuable, but also practical for a large number of people, especially considering that it deals with academic writing in Latvian only.

Translation as part of academic writing

Primary publications:

Egle, Baiba; Lele-Rozentāle, Dzintra; Dubova, Agnese; Jēkabsons, Gints (2025). Bakalaura darbu anotāciju korpusa izveide un anotēšana: pirmie secinājumi par Latvijas studentu anotācijām. *Kalbotyra* (78), 89–110.

Egle, Baiba (2025). The Quality of English-Language Abstracts in RTU Bachelor's Papers: A Qualitative Analysis of Common Mistakes. Linda Lauze (ed.). *Vārds un tā pētīšanas aspekti: valodniecības žurnāls* [The Word: aspects of research: Journal of Linguistics], 29, 72–81.

In today's academic environment, translation is becoming an integral part of the writing process, as researchers often need to adapt their texts to various institutional, editorial and communicative requirements. If authors choose to write in the language in which the publication is to be submitted, and this is not their first language of academic socialisation, there are several circumstances in which translation becomes necessary. For example, an author may prepare an article in their native language and later translate it themselves or entrust it to a professional translator. It is also a common situation that a journal requires an abstract in a language different from the main text. In the Latvian academic context, the requirement to translate a summary or abstract into English is particularly widespread, thus ensuring wider international accessibility. As a result, this text genre gains particular relevance.

Despite the practical importance of translation, this aspect is surprisingly rarely addressed in academic writing research (see, for example, Pezzini (2003)). Most research literature focuses on structural elements of articles, genre specifics, or issues related to writing in English as a foreign language. While these issues are important, the translation process as an institutionally or editorially mandated requirement is also a relevant research question, as the translator's competence and chosen methods can significantly affect text quality, clarity of argumentation, and even the correct use of metadiscourse.

Research examining students' writing competence points to the challenges students face when required to write in English.¹² The skill of writing abstracts, especially when English is a foreign language and not the main subject of study, has been widely investigated. Such situations can also be challenging for academic staff who supervise student work, as translation skills are not always included in traditional academic writing courses. However, given the impact of translation on text quality and compliance with institutional requirements, it is vital to understand the expected skills and how students can be supported more effectively.

Supervisors of bachelor's theses expect students to follow the guidelines set by their university when developing their thesis. Requirements regarding formatting, length, reference style and other aspects may differ depending on the faculty and programme, but an abstract in two languages is a mandatory component for all bachelor's theses.

In the RTU project "Towards an AI-based study thesis abstract writing assistant: Preparation, analysis and modelling of a bilingual text corpus", a pilot study was conducted focusing on the issues visible when analysing the abstracts attached to RTU bachelor's theses, while also considering research results on bachelor's abstracts in other countries and languages.

The study corpus comprises more than 1000 RTU student abstracts produced in 2023 and 2024. This period was chosen to reflect the latest trends in abstract writing at RTU.

Although the abstract is a standardised text type, its creation is not straightforward, as the bachelor's thesis abstract is usually the first time students have to write such a text during their studies. The aim of the study was to compile the problematic cases identified and to show the perspective of linguistic analysis of the emerging corpus, based on specialised literature on abstract types, methodology for analysing bachelor's thesis abstracts, and issues in text construction, as well as the results of the pilot study.

The abstract in Latvian and English¹³ has become a mandatory requirement for all final theses, including bachelor's and master's theses. This aspect of academic writing has not been systematically studied in Latvia until now, and as one of the largest universities in Latvia, RTU offers a sufficiently broad range of final theses to provide a representative picture of academic writing practices.

From the annotated corpus (2023–2024), 50 abstracts were randomly selected (25 in Latvian and 25 translations into English) with the following tasks.

1. To determine the word count in the abstracts in Latvian and English.

¹² The most extensive study on English in Latvian students' bachelor's theses is Indra Karapetjana's Doctoral Thesis (Karapetjana, 2007). It analyses the work of students in the English philology programme. The focus is on texts written in English.

¹³ This language pair is dominant at RTU and the only one in the compiled corpus.

2. To determine the realisation of “moves” and “steps” based on the models of Swales and Feak (2009) and Hyland (2005, 2015, 2017) and the modified model developed by the study authors.

3. To analyse and explain the formation models of moves and steps.

4. To compare the English translations of the abstracts with the Latvian texts and analyse translation quality.

5. To draw conclusions on the prospects for further research.

Metadata were excluded from the analysis, including keywords, information on thesis length, number of pages, number of chapters, number of appendices, number of references, number of figures and tables, etc., which in the corpus are marked as [[len]]. Also excluded was information about the author, supervisor, thesis title, thesis type, language, etc., which in the abstract was marked as [[meta]].

The following steps were implemented in the analysis.

1. Anonymisation and annotation of selected texts, which in the pilot study was performed manually by a group of three annotators, allowing immediate discussion of identified problems and agreement on solutions.

2. Tabular compilation of identified moves and steps.

3. Preparation of texts for qualitative and quantitative analysis using the *Sketch Engine* software.

4. Linguistic (genre) analysis of texts aiming to analyse the implementation of cohesion and coherence.

5. Verification of equivalence of translated abstracts.

So far, no research has been conducted in Latvia on the quality of Latvian students' abstracts, nor are there international studies on student abstract texts translated into English. This study covers the practice of one institution to provide an initial insight into the real quality of translated student abstracts.

Previous research results obtained in universities in different countries show that students whose native language is not English and who do not study it professionally, e.g. in English philology programmes, should write abstracts using the five-move model developed by Hyland in order to comply with “conventional English rhetorical moves” (Suryani & Rismiyanto, 2019, p. 197).

High language quality is generally expected in academic writing, regardless of whether the author is an experienced researcher or a student writing a bachelor's thesis. The abstract as a text type is one of the most common academic texts in the world and is written by students and researchers at all levels and in all fields. In Latvia, the abstract is a mandatory requirement for all students, regardless of faculty or university, and it must be submitted in both Latvian and English.

RTU's general guidelines describe the abstract very briefly, indicating three main components:

- 1) 3–5 keywords characterising the research area;
- 2) a brief description of the thesis, an introduction to the research area, the research aim and results;
- 3) data on the thesis – number of pages, number of tables, figures and bibliographical sources (Naumeca-Anohina, 2023).

It is also specified that the abstract should not exceed one page in length.

All RTU students are required to submit an abstract in English, so students need to find a way to create this text. Usually, students focus on the abstract in Latvian and use it as a basis for the English version. Since the abstract in English is a mandatory requirement but not a main writing priority, students are likely to choose various machine translation tools, the use of which is not prohibited in the guidelines. Some of the analysed abstracts' English translations were of fairly good quality, despite some awkward formulations. The texts could generally be assessed as meeting the expected quality in terms of lexis and grammar. It was initially assumed that the main problem in the English texts would be grammatical and punctuation errors, but in practice, this turned out to be a less significant factor. This can be explained by the fact that the original texts are likely machine-translated, and grammatical rendering is one of the strengths of machine translation (for aspects of machine translation and grammar, see Ramos et al. (2025) and Solyman et al. (2021)).

It should be noted that Latvian students are more oriented towards the requirements set out in their university's guidelines, which are rather concise, than towards the English academic tradition's understanding of the abstract genre. Therefore, texts may meet institutional requirements but not fully correspond to the concept of the abstract genre as accepted in English. Research suggests that students whose native language is not English and who do not study English at a professional level should not avoid translation or the creation of summaries.

This highlights the need to analyse English versions of abstracts in a broader corpus. Although abstracts in Latvian and English are largely equivalent, with matching moves and steps, language quality and the importance of editing could be significant factors in developing future AI tools to support students, especially considering their limited experience in abstract writing and post-editing of machine translation.

Annotation and more detailed analysis of the pilot corpus allow for several conclusions, which can be divided into two groups. Firstly, there are possible solutions for improving students' academic writing: more detailed methodological guidelines, including an introduction to types of abstracts, as well as increasing the number of specialised academic writing courses or classes at bachelor's level, including translation and post-editing tasks. Since the bachelor's thesis abstract is students' first encounter with this text type, and it is written in a limited time frame, diversity in

move models, especially in the use of signal words such as *aim*, *results*, and *conclusions*, is inevitable. Secondly, by drawing students' attention to the genre, it is also necessary to acquire genre-specific vocabulary, for which the preparation of bilingual and multilingual teaching materials is recommended.

The question of producing informative and indicative abstracts according to uniform criteria is debatable. In informative abstracts, all moves and steps can be assessed, while in indicative abstracts, indications of thesis structure may dominate instead of methods, results and conclusions. To identify broader trends in student writing skills and the use of machine translation tools, further and deeper studies are needed.

Since writing an abstract in one language (in this case Latvian) and translating it into another language (English and other languages) has not been widely addressed in the literature, this is a research area to be developed in various language combinations. Although the study results initially seem relevant only to the Latvian language and students of one institution, they can serve as inspiration for researchers in other countries where students write their theses in their mother tongue or the national language and translate abstracts according to institutional requirements. Results may differ depending on the country, education system and guidelines, especially in cases where machine translation is prohibited, or there are detailed requirements for the English abstract. Although students have many recommendations for writing abstracts in English as a foreign language, there are very few guidelines for post-editing machine-translated academic texts (on including post-editing in the study process, see Harto et al. (2022) and Niño (2008)).

The current methodological guidelines need updating to include recommendations on post-editing machine translations suitable for a broad target audience. In future, other aspects such as the use of tenses, typical expressions, and the implementation of coherence techniques in text types, which may be language-specific, should also be comparatively analysed. These conclusions can also serve as a starting point for studies on translations in student academic writing and on how translation, in this case possibly also machine translation and AI tools, affects text production.

The research experience reflected here can serve as a basis for an in-depth discussion on the role of translation in academic writing, as well as an inspiration for further research. Such research could make a significant contribution to both the theoretical understanding of multilingualism in academic text creation and to practical support for students and researchers who deal with translation tasks in their daily work. By broadening the perspective on translation as an integral part of academic communication, it is possible to develop new pedagogical approaches and methodological solutions that support high-quality and consistent multilingual academic writing, which forms the foundation of a successful academic career.

3. CONCLUSIONS

The studies compiled and expanded during the development of this Doctoral Thesis confirm the multidisciplinary and heterogeneous nature of academic writing. Academic writing operates as a network of scientific communication, intertwining disciplinary conventions, the author's professional competence, institutional requirements, and the regulatory framework of global science policy. The interaction of these factors determines both the writing process itself and the quality and accessibility of scientific communication.

Regulatory frameworks at the national and institutional levels function as the dominant extralinguistic factor influencing scientific writing in the Latvian academic context. At the same time, Latvian scientific communication, including academic writing, is integrated into the global science communication system, wherein bibliometric indicators – such as impact factor, citation index, and h-index – play a significant role. These indicators determine publication strategies, career development criteria, and the competitiveness of scientific institutions. Compliance with international indexing requirements (*SCOPUS*, *Web of Science*) is enshrined in legislation, university regulations, and science policy priorities. The role of legislators and policymakers in this process is decisive, as they define indexing criteria, bibliometric indicators, and, consequently, opportunities for academic career progression.

These requirements reveal academic writing as a component of the globalisation process, which, in the Latvian context, is often insufficiently analysed. For example, the goal of Latvian universities to be included in the world's top 500 universities is directly linked to the quality, impact, and citation of research outputs. The performance of universities is shaped by the publications of all associated researchers, thus making writing practices an element of institutional competitiveness.

The system of requirements for the qualification of full and associate professors is not only a legal regulation but also an instrument of science policy, reflecting the institutionalisation of academic writing. Academic staff are expected to understand the significance of extralinguistic factors. For instance, the requirement for three indexed publications in the humanities also implies the need to be proficient in bibliometric analysis, to master article structuring models (including IMRAD), and to apply metadiscourse strategies. In the process of internationalisation, translation competence also becomes essential as an integral part of scientific communication.

Research into academic writing within the context of science policy and regulatory requirements enables a more precise understanding of its status. An isolated approach that ignores the influence of science policy and the education system cannot provide a comprehensive picture of the writing process. At the same time, the goal of science policy is to ensure that research funded by public means is accessible to society, thereby strengthening knowledge transfer, the social responsibility of science, and the open access paradigm.

Achieving a global audience determines linguistic hegemony, with English functioning as the *lingua franca* of scientific communication. Although publications exist in other languages,

indexing requirements and bibliometric criteria often limit the possibilities of publishing in local languages. This highlights the need for discussion about the current paradigm of scientific evaluation, dominated by the indexing systems of commercial publishers, as well as the necessity to develop alternative assessment models, such as alternative metrics (altmetrics).

The study of academic writing in the Latvian language remains relevant, particularly regarding the features of scientific style. While there is a need to make research results internationally accessible, academic writing in numerically small languages still retains its significance, and it is important to document language-specific stylistic features. The publications included in this Doctoral Thesis provide insight into various aspects of academic writing in Latvian – choices of article structure and argumentation, use of metadiscourse markers, application of electronic support tools, and the role of translation in scientific communication. At the same time, it should be noted that the number of scientific texts published in Latvian is decreasing, and there is a risk that the textual features analysed in this work may become less common in the future or be replaced by a homogenised “international” style.

The methods used in this Doctoral Thesis – content analysis, qualitative text analysis, quantitative methods (including the *AntConc* concordance software), argumentative zoning, K. Hyland’s metadiscourse analysis model, and contrastive analysis – have proved effective, given the complexity of the research object and the interplay of linguistic and extralinguistic factors.

The Latvian academic writing system should encompass both the development of students’ writing competence and the quality of publications by experienced researchers, shifting from implicit (intuitive) knowledge (tacit knowledge) to an explicit process of writing instruction. In this process, mastering the IMRAD structure, metadiscourse strategies, and translation potential is essential. Establishing writing centres at universities could provide the pedagogical infrastructure necessary to offer editorial support, develop writing skills, and inform about publication strategies. Such practice is widespread in foreign higher education institutions.

Translation in academic writing is inevitable, shaped both by institutional requirements and global publishing practices. The dominance of English means that researchers whose first language is not English often need to use translation or artificial intelligence tools to improve text quality. This underscores the need for post-editing of machine translations and opens up opportunities for new research into the acceptability of machine translation quality (or translation acceptability for readers) in the Latvian–English combination. Further applied research potential is also linked to the analysis of students’ use of translation tools, which can serve as an empirical basis for studies on language choice strategies, the integration of translation practice into academic writing courses, and methodologies for translating scientific texts.

The task of expanding the electronic auxiliary tool for scientific language remains relevant, supplementing it with equivalent phrases in other languages and usage notes according to disciplinary traditions and various academic text genres. Previous usage statistics confirm the necessity of such a tool.

This Doctoral Thesis is a compilation of pilot studies in scientific communication, providing valuable insights into the issues of academic writing. The results obtained may be useful for the academic community, which needs to understand the peculiarities of scientific style, language and disciplinary differences, and opportunities for their acquisition. They may also serve science policymakers, whose focus is on the strategic development of science and scientific communication, enabling the balancing of global standards with the responsibility of Latvian scientists and academic staff towards society, as well as the career development of academic personnel.

4. THESES SUBMITTED FOR DEFENSE

1. The practice of academic writing and the related scientific career in Latvia are closely linked to global science and scientific communication processes, in which English dominates as the *lingua franca* of science. This monolingual environment affects the use of Latvian in science and creates the need to strengthen multilingualism in academic communication through regulatory frameworks.
2. Academic writing is a complex process determined by the interaction of linguistic and extralinguistic factors; therefore, its study requires a multimethod approach that covers both text structure and metadiscourse analysis, as well as scientific policy and institutional regulation. The analysis of academic texts confirms that, in addition to universal features of scientific style, there are also culture-specific peculiarities of the Latvian scientific language, shaped by the influence of disciplinary cultures and intellectual traditions, thereby confirming the suitability of Welsh's interpretation of transculturalism for the study of scientific writing. An understanding of academic writing increases the likelihood that research results will be published in appropriate publications corresponding to the normative requirements for career advancement.
3. Translation and the use of machine translation tools have become an integral part of academic writing practice. The translation of secondary texts (e.g., annotations) and post-editing of texts produced by AI-supported machine translation tools remain insufficiently problematised; their analysis is essential for improving the writing competence and practice of both students and academic staff. Meanwhile, online aids such as "Language of Science" are an important tool for learning academic language and supporting writing, providing access to terminologically and stylistically consistent resources; their development and integration into the study process and research environment are prerequisites for improving the quality of academic writing.

BIBLIOGRAPHY

Abizadeh, Arash (2024). Academic journals are a lucrative scam – and we’re determined to change that. *The Guardian*, 16.07. Available: <https://www.theguardian.com/commentisfree/article/2024/jul/16/academic-journal-publishers-universities-price-subscriptions>

Aman, Valeria; Botte, Alexander (2017). A bibliometric view on the internationalization of European educational research. *European Educational Research Journal*, 16(6), 843–868. <https://doi.org/10.1177/1474904117729903>

AMWA 2025 – American Medical Writers Association. *IMRAD format explained: How to structure a scientific manuscript for impact and clarity*. Available: <https://blog.amwa.org/imrad-format-explained>

Bahji, Anees; Acion, Laura; Laslett, Anne Marie; Adinoff, Bryon (2023). *Exclusion of the non-English-speaking world from the scientific literature: Recommendations for change for addiction journals and publishers*. *Nordisk Alkohol Nark*, 40(1), 6–13. Available: <https://pmc.ncbi.nlm.nih.gov/articles/PMC9893128>

Baldwin, Melinda (2017). Origins of the journal impact factor. *Physics Today*. Available: <https://doi.org/10.1063/PT.5.9082>

Baltic Journal of English Language, Literature and Culture. Available: <https://www.lu.lv/zinatne/zinatnes-komunikacija/zurnali/baltic-journal-of-english-language-literature-and-culture/>

Breitkopf, Anna (2006). *Wissenschaftsstile im Vergleich: Subjektivität in deutschen und russischen Zeitschriftenartikeln der Soziologie*. (Vol. 11 of Freiburger Dissertationsreihe Freiburger Dissertationsreihe: Philologie). Freiburg im Breisgau: Rombach.

Breitkopf, Anna; Vassileva, Irena (2007). Osteuropäischer Wissenschaftsstil. Peter Auer, Harald Baßler (eds.). *Reden und Schreiben in der Wissenschaft*. Frankfurt, New York: Campus Verlag, 211–224.

Campbell, Norman (1928). Personal and Impersonal Styles in Scientific Communications. *Nature*, 121, 1021 (1928). <https://doi.org/10.1038/1211021a0>

Clyne, Michael (1987). Cultural differences in the organization of academic texts. *Journal of Pragmatics*, 11, 211–247.

Cook, Bryan. G.; McClain, Suzanne; Corr, Francis; Waterfield, Danielle A.; Welker, Nathan. P.; Fleming, Jesse. I.; Therrien, William. J. (2024). Pushing past the paywall: Accessing open peer-reviewed research. *Teaching Exceptional Children*. Available: <https://doi.org/10.1177/00400599241257436>

Curry, Mary Jane; Lillis, Theresa (2024). Multilingualism in academic writing for publication: Putting English in its place. *Language Teaching*, 57(1), 87–100.

Dahl, Trine (2004). Textual metadiscourse in research articles: a marker of national culture or of academic discipline? *Journal of Pragmatics*, 36(10), 1807–1825. Available: <https://doi.org/10.1016/j.pragma.2004.05.004>

DORA – Declaration on Research Assessment (2025). Available: <https://sfdora.org/read>

Dubova, Agnese (2023). Vācu valodas loma latviešu zinātnes valodas attīstībā (1918–1940). *Skriptus Manet: Journal of Humanities and Arts*, 15, 10–24.

Dubova et al. 2021 – Dubova, Agnese (ed.) (2021). *Zinātnes valoda: stils, teksts, konteksts*. Collective monograph. Authors: Agnese Dubova, Diāna Laiveniece, Dzintra Lele-Rozentāle, Dzintra Šulce, Egita Proveja, Raita Rollande, Baiba Egle, Iveta Kopankina, Līva Vecvagare, Artūrs Viļums, Raitis Ralfs Vecmanis, Sindija Ansberga, Veronika Mahmudova, Ance Putniņa, Dana Tihomirova, Kristīne Tomase. Rīga: Zinātne. ISBN 978-9934-599-11-8.

Dubova, Agnese; Leitāne, Māra; Lele-Rozentāle, Dzintra (2009). *Zinātniskā komunikācija starpkultūru kontekstā*. Ventspils: Venstpils Augstskola. Lietišķās valodniecības centrs.

EBSCO 2024 – EBSCO (2024) Bibliometrics. Available: <https://www.ebsco.com/research-starters/library-and-information-science/bibliometrics>

EC 2025 – European Council. *EU support for open access*. Available: https://research-and-innovation.ec.europa.eu/strategy/strategy-research-and-innovation/our-digital-future/open-science/open-access_en

Ehlich, Konrad. (2000). Deutsch als Wissenschaftssprache für das 21. Jahrhundert.

German as a foreign language, Nr. 1, 47–63.

Ehlich, Konrad (1999) Alltägliche Wissenschaftssprache. *InfoDaF*, 26(1), 3–24.

Elsevier (2021). *What is the Web of Science, and how does it work?* Available: <https://www.elsevier.support/publishing/answer/what-is-web-of-science-and-how-does-it-work>

Elsevier (2025). Scopus. Available: <https://www.elsevier.com/products/scopus>

Frydrychova Klimova, Blanka (2015). Teaching English Abstract Writing Effectively. 5th World Conference on Learning, Teaching and Educational Leadership, WCLTA 2014. *Procedia – Social and Behavioral Sciences*, 186, 908–912. Available: https://www.researchgate.net/publication/277964523_Teaching_English_Abstract_Writing_Effectively

OECD (2015), Frascati Manual 2015: Guidelines for Collecting and Reporting Data on Research and Experimental Development, The Measurement of Scientific, Technological and Innovation Activities, OECD publishing, Paris. DOI: <http://dx.doi.org/10.1787/9789264239012-en>

Galtung, Johan (1981). Structure, culture, and intellectual style: An essay comparing saxonic, teutonic, gallic and nipponic approaches. *Social Science Information*. SAGE, London and Beverly Hills, 20(6), 817–856.

Garfield, Eugene (1955). Citation Indexes for Science. *Science*, 122, 108–111. Available: <https://doi.org/10.1126/science.122.3159.108>

Gledhill, Christopher J. (2000) Collocations in science writing. Tübingen: Gunter Narr Verlag.

Godin, Benoit (2006). On the origins of bibliometrics. *Scientometrics* 68, 109–133. Available: <https://doi.org/10.1007/s11192-006-0086-0>

Graefen, Gabriele; Thielmann, Winfried (2007). Der wissenschaftliche Artikel. [The scientific article]. Peter Auer, Harald Baßler (Hrsg.). *Reden und Schreiben in der Wissenschaft*. Frankfurt, New York: Campus Verlag, 31–97.

Harto, Sri; Hamied, Fuad Abdul; Musthafa, Bachrudin; Setyarini, Sri (2022). Exploring undergraduate students' experiences in dealing with post-editing of machine translation. *Indonesian Journal of Applied Linguistics*, 11(3), 696–707.

Helsinki Initiative on Multilingualism in Scholarly Communication (2019). Helsinki: Federation of Finnish Learned Societies, Committee for Public Information, Finnish Association for Scholarly Publishing, Universities Norway & European Network for Research Evaluation in the Social Sciences and the Humanities. <https://doi.org/10.6084/m9.figshare.7887059>.

Hirsch, Jorge; Buela-Casal, Gualberto (2014). The meaning of the h-index. *International Journal of Clinical and Health Psychology*, 14(2), 161–164.

Hyland, Ken (2005). *Metadiscourse: Exploring interaction in writing*. London, New York: Continuum.

Hyland, Ken (2015). Genre and second language writing. John I. Liontas (ed.). *TESOL Encyclopedia of English Language Teaching*. Hoboken, New Jersey: Wiley Blackwell, 2359–2364.

Hyland, Ken (2017). Metadiscourse: what is it and where is it going? *Journal of Pragmatics*, 113, 16–29. Available: <https://doi.org/10.1016/j.pragma.2017.03.007>

IFERP 2025 – IFERP (2025). *What is the difference between a Q1, Q2, Q3, and Q4 journal?* Available: <https://www.iferp.in/blog/2025/11/13/what-is-the-difference-between-a-q1-q2-q3-and-q4-journal>

IZM 2025 – Izglītības un zinātnes ministrija. *Ievieš jaunu doktorantūras modeli; doktorantiem studiju laikā būs atalgojums*. Available: https://www.izm.gov.lv/lv/jaunums/ievies-jaunu-doktoranturas-modeli-doktorantiem-studiju-laika-bus-atalgojums?utm_source=https%3A%2F%2Fwww.google.com%2F

JYU 2025 – JYU (2025) The subscription to the Web of Science database will end on January 1, 2026. Available: <https://www.jyu.fi/en/news/the-subscription-to-the-web-of-science-database-will-end-on-january-1-2026>

Kaplan, Robert. (1966). Cultural thought patterns in intercultural education. *Language Learning*, 16(1), 1–20.

Karapetjana, Indra (2007). *Language in Bachelors Papers as a Result or the Development of Linguo-functional Research Competence* [Bakalaura darbu valoda kā lingvofunkcionālās kompetences attīstības rezultāts]. Promocijas darbs filoloģijas doktora grāda iegūšanai valodniecības zinātņu nozares lietišķās valodniecības apakšnozarē. Rīga. <https://dspace.lu.lv/server/api/core/bitstreams/3b3a1889-32c9-42ed-93a6-72ade656bbea/content>

Kotthoff, Helga (2002). Vortragsstile im Kulturvergleich. Zu einigen deutsch-russischen Unterschieden. Eva-Maria Jakobs, Annely Rothkegel (eds.). *Perspektiven auf Stil*. Festschrift für B. Sandig. Tübingen: Niemeyer, 321–350.

Labs of Latvia (2024) = Labs of Latvia (2024). Latvijas universitātes saglabā savas pozīcijas “Times Higher Education” reitingā. Available: <https://labsoflatvia.com/aktuali/latvijas-universitates-saglaba-savas-pozicijas-times-higher-education-reitinga>

Larivière, Vincent; Haustein, Stefanie; Mongeon, Phillippe (2015). The oligopoly of academic publishers in the digital era. *PloS one*, 10(6), 1–15. Available: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0127502>

Laiveniece, Diāna (2014). *Zinātniskās rakstīšanas skola*. Liepāja: LiePA.

Laiveniece, Diāna (2010). Subjektīvā un objektīvā izteiksmes veidi zinātnes valodā. Benita Laumane, Gunta Smiltneiece (red.). *Vārds un tā pētīšanas aspekti*, 14(1). Liepāja: LiePA, 128–138.

Laiveniece, Diāna; Dubova, Agnese (2021). Latviešu zinātnes valodas pētniecības virzieni 21. gadsimtā: literatūras apskats. *Baltu filoloģija*, 30(1/2), 72–92. Available: <https://doi.org/10.22364/bf.30.04>

Līgums par Eiropas Savienību (2016/C 202/01). Available: eur-lex.europa.eu/legal-content/LV/TXT/PDF/?uri=OJ:C:2016:202:FULL

LV Portals 2022 – LV portāls. *Zinātņu doktoru skaits Latvijā nepietiekams*. Available: <https://lvportals.lv/skaidrojumi/336598-zinatnu-doktoru-skaits-latvija-nepietiekams-2022>

Manchester Academic Ohrasebank. Available: <https://www.phrasebank.manchester.ac.uk>

Mārtinsons, Kristīne; Pipere, Anita (2019). *Zinātniskā rakstīšana un pētījumu rezultātu izplatīšana*. 2. izd. Rīga: RSU.

Mittelstraß, Jürgen; Trabant, Jürgen; Fröhlicher, Peter (2016). *Wissenschaftssprache. Ein Plädoyer für Mehrsprachigkeit in der Wissenschaft*. Stuttgart: J. B. Metzler.

Mondal, Himel; Deepak, Kishore; Gupta, Manisha; Kumar, Raman (2023). The h-Index: Understanding its predictors, significance, and criticism. *Journal of family medicine and primary care*, 12(11), 2531–2537. https://doi.org/10.4103/jfmpe.jfmpe_1613_23

Naumeca-Anohina, Alla (2023). Norādījumi studiju noslēguma darbu noformēšanai. RTU Izdevniecība. Available: https://ebooks.rtu.lv/wp-content/uploads/sites/32/2023/03/9789934226960-DITF_metodiskie_norad-2021-LV.pdf

Niedre, Laila (2015). Kultūras atšķirības zinātniskas literatūras tekstveidē. *Kultūras krustpunkti*, 7, 377–285.

Niño, Ana (2008). Evaluating the use of machine translation post-editing in the foreign language class. *Computer Assisted Language Learning*, 21(1), 29–49.

Open Access NL 2025 – What is open access? Available: <https://www.openaccess.nl/en/about-open-access/what-is-open-access>

OLH 2025 – Open Library of Humanities (2025). How we Work? Available: <https://www.openlibhums.org/site/olh-model/>

Pezzini, Ornella Inês (2003). Genre Analysis and Translation – an Investigation of Abstracts of Research Articles in Two Languages. *Cadernos de Tradução*, 2(12), 75–108.

Phillipson, Robert (2012). Linguistic imperialism alive and kicking. Available: <https://www.theguardian.com/education/2012/mar/13/linguistic-imperialism-english-language-teaching>

Phillipson, Robert (2013). Linguistic Imperialism. *The Encyclopedia of Applied Linguistics*, Edited by Carol A. Chapelle. Blackwell Publishing. Available: https://www.researchgate.net/publication/31837620_Linguistic_Imperialism_R_Phillipson

Phillipson, Robert (2015). Linguistic imperialism of and in the European Union. *Revisiting the European Union as empire*. Eds/ Hartmut Behr, Yannis Stivachtis Routledge, 134–163.

Pipere, Anita; Dambrova, Maija; Mārtinsone, Kristīne; Berķis, Uldis (2018). Zinātniskais raksts un tā veidi. Kristīne Mārtinsone, Anita Pipere (eds.). *Zinātniskā rakstīšana un pētījumu rezultātu izplatīšana*. Rīga: RSU, 78–90.

Ramos, Rita; Chimoto, Everlyn Asiko; Hoeve, Maartje Ter; Schluter, Natalie (2025). Grammar: Improving machine translation with grammar-informed in-context learning. *Proceedings of the 63rd Annual Meeting of the Association for Computational Linguistics*, Vol. 1: Long Papers, 29920–29940.

Rekomendācija (2012/417/EU) – *ES Rekomendācija piekļuvei zinātniskajai informācijai un tās saglabāšanai*. Recommendation on access and preservation of scientific information. Available: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32012H0417&rid=1>

Regula Nr. 1, ar ko nosaka Eiropas Kopienā lietotās valodas. Available: <https://eur-lex.europa.eu/legal-content/LV/AUTO/?uri=celex:31958R0001>

Riesel, Elise (1963). *Stilistik der deutschen Sprache*. 2. durchgesehene Aufl. Moskau: Hochschule.

Rozenbergs, Jānis (1995). *Latviešu valodas stilistika*. Rīga: Zvaigzne ABC.

Ruskan, Anna; Hint, Helen; Leijen, Djuddah A.; Šinkūnienė, Jolanta (2023). Lithuanian academic discourse revisited: Features and patterns of scientific communication. *Open Linguistics*, 9(1), 1–19. Available: <https://doi.org/10.1515/opli-2022-023>

Shapiro, Fred (1992). *Origins of bibliometrics, citation indexing, and citation analysis: The neglected legal literature*. Available: [https://doi.org/10.1002/\(SICI\)1097-4571\(199206\)43:5%3C337::AID-ASI2%3E3.0.CO;2-T](https://doi.org/10.1002/(SICI)1097-4571(199206)43:5%3C337::AID-ASI2%3E3.0.CO;2-T)

Sollaci, Luciana B.; Pereira, Mauricio G. (2004). The introduction, methods, results, and discussion (IMRAD) structure: a fifty-year survey. *Journal of the Medical Library Association: JMLA*, 92(3), 364–371.

Solyman, Aiman; Zhenyu, Wang; Qian, Tao; Elhagm Arafat Abdulgader Mohammed; Toseef, Muhammad; Aleibeid, Zeinab (2021). Synthetic data with neural machine translation for automatic correction in Arabic grammar. *Egyptian Informatics Journal*, 22(3), 303–315.

Sorbonne (2023). *Sorbonne University unsubscribes from the Web of Science*. Available:

<https://www.sorbonne-universite.fr/en/news/sorbonne-university-unsubscribes-web-science>

Suryani, Fitri Budi; Rismiyanto (2019). Move Analysis of the English Bachelor Thesis Abstracts Written by Indonesians. *Prominent Journal of English Studies*, 2(2), 192–199.

Swales, John M.; Christine B. Feak (2009). *Abstracts and the Writing of Abstracts*. Vol. 1 of the Revised and Expanded Edition of English in Today's Research World. Ann Arbor, MI: University of Michigan Press.

Šulovská, Denisa (2022). *Selected topics from academic writing*. Comenius University in Bratislava, Faculty of Arts, Bratislava: STIMUL. Available: https://dspace.uniba.sk/bitstream/handle/123456789/43/Sulovska_978-80-8127-341-4.pdf?sequence=1&isAllowed=y

Teufel, Simone (1999). *Argumentative Zoning: Information Extraction from Scientific Text*. PhD. University of Edinburgh.

Teufel, Simone; Carletta, Jean; Moens, Marc (1999). An annotation scheme for discourse-level argumentation in research articles. *Proceedings of the Ninth EACL*, 110–117. Stroudsburg: Association for Computational Linguistics.

Teufel, Simone; Siddharthan, Advaith; Batchelor, Colin (2009). Towards Discipline-Independent Argumentative Zoning: Evidence from Chemistry and Computational Linguistics. *Proceedings of the 2009 Conference on Empirical Methods in Natural Language Processing*, 1493–1502.

Valoda: nozīme un forma / Language: Meaning and Form. Available: <https://journal.lu.lv/vnf/about>

Vassileva, Irena (2000). *Who is the author? A contrastive analysis of authorial presence in English, German, French, Russian and Bulgarian academic discourse*. Sankt Augustin: Asgard-Verlag.

Veisbergs, Andrejs (2003). Zinātniskais stils dažādās kultūrās, to ietekme uz latviešu stilu. *Konferences "Zinātnes valoda" materiāli*. Rīga: Rasa, 22–27.

Welsch, Wolfgang (1995). Transkulturalität. Zur veränderten Verfasstheit heutiger Kulturen. Institut für Auslandsbeziehungen (Hrsg.). *Migration und kultureller Wandel*. Themenheft. *Zeitschrift für Kulturaustausch*, 45(1), 39–44.

Zinātnes valoda. <https://zinatnesvaloda.lv/sakums>

QSa 2025 – QS Top universities ranking 2026. Available: <https://www.topuniversities.com/world-university-rankings>

QSa 2025 = QS Top universities methodology. Available: <https://www.topuniversities.com/world-university-rankings/methodology>

Laws

Augstskolu likums – Augstskolu likums. [University law] 02.11.1995. Available: <https://likumi.lv/ta/id/37967-augstskolu-likums>

MK 129 – *Profesora vai asociētā profesora amata pretendenta un amatā esoša profesora vai asociētā profesora zinātniskās un pedagoģiskās kvalifikācijas vai mākslinieciskās jaunrades darba rezultātu novērtēšanas kārtība*. [Rules for the evaluation of professor and associate professor position candidate's scientific and teaching qualifications] 25.02.2021. Available: <https://likumi.lv/ta/id/321300-profesora-vai-asocieta-profesora-amata-pretendenta-un-amata-esosa-profesora-vai-asocieta-profesora-zinatniskas-un-pedagogiskas-kvalifikācijas-vai-makslinieckas-jaunrades-darba-rezultatu-novertesanas-kartiba>

Valsts valodas likums [State language law] 09.12.1999. Available: <https://likumi.lv/ta/id/14740-valsts-valodas-likums>

Zinātniskā doktora grāda piešķiršanas (promocijas) kārtība un kritēriji. [Criteria for achieving a doctoral degree] 27.12.2005. Available: <https://likumi.lv/doc.php?id=124787>

Zinātniskās darbības likums. [Scientific activity law] 14.04.2005. Available: <https://likumi.lv/ta/id/107337-zinatniskas-darbibas-likums>



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