Guide to Writing Scientific Texts (Articles, Abstracts, and Reports)

Introduction

Young researchers often find it challenging to begin writing scientific papers. However, scientific writing skills are essential for a successful research career: publications are required for scholarships, thesis defenses, and advancement in academia. This guide will help students, graduate students, and early-career researchers master the main stages and principles of preparing scientific texts – from a journal article to conference abstracts and presentations. We will discuss how to structure a scientific work, what requirements apply to the writing style, and provide practical advice: typical template phrases, useful verbs, and logical connectors. The recommendations focus on clarity and logical flow so that your scientific work is understandable to readers and reviewers.

A scientific text must convey the essence of your research as clearly and convincingly as possible. This is achieved through a clear structure (introduction, methods, results, discussion, etc.), a formal writing style, and attention to detail. By following this guide step by step – from planning to final proofreading – you can produce a coherent and well-written text that meets the requirements of scientific journals and conferences. Remember that a good scientific article or presentation does not emerge fully formed in an instant; it is **the result of a thoughtful writing process and multiple revisions**. In the sections below, we will examine this process in detail.

Main Stages of Writing a Scientific Text

Outlined below are the main stages of writing a scientific text, which you are advised to follow in sequence:

Planning and Preparation. Determine your topic and formulate your scientific problem. Verify the relevance and novelty of the topic by reviewing the current literature. Define the **research aim** and main objectives. Identify your target audience and the venue for publication (journal or conference), and familiarize yourself with their guidelines. At this stage, it's also helpful to create a preliminary **outline of the paper** – list the key sections and points that need to be covered. For example, an article typically requires *Introduction, Methods, Results, Discussion, Conclusion* sections, while conference abstracts compress those elements into a shorter form. Good planning will help you write the text in a logical and comprehensive way.

Drafting the Manuscript. Begin filling in the content according to your work's structure. It is often recommended to start by writing the methods and results sections, based on the research you have done, and then write the introduction and discussion once the overall story is clear. Don't aim for perfect wording on the first try – the priority is to get the main content down. Follow your outline, elaborating point by point: in the *Introduction*, justify the importance of the topic and state your aim; in *Methods*, describe *how* the study was conducted; in *Results*, detail what you found; and in the *Discussion*, explain the meaning of those findings.

If you get stuck on a section, you can skip it and return later. Also, keep in mind any format requirements: for instance, word count limits for the abstract or article – your draft should eventually meet those limits.

Revising and Polishing. After completing a draft, set the text aside for a day or two, then review it with fresh eyes. During revision, ensure that the content is fully and clearly presented, the text flows logically, and there are no inconsistencies. **Check the structure**: make sure all key parts are included and that the order of presentation follows the accepted norms. **Refine the style** – a scientific text should be precise and unambiguous, without colloquial expressions. Correct grammatical errors, eliminate repetition, and break up overly long sentences. At this stage, it is useful to involve a colleague or your advisor for feedback: ask them to read and point out any unclear areas. Also verify that you meet the formal requirements of your chosen journal or conference (formatting of references, tables, figures, etc.). The outcome of this stage is a final version of the text, ready for submission.

Scientific Style and Language

Scientific texts are written in a special style characterized by formality and clarity. **Logical flow, generality, and objectivity are key features of the scientific style**. Present your ideas in a structured manner, avoiding emotional expressions or subjective judgments. It is important to use correct terminology: employ established scientific terms and definitions. Colloquial words, slang, and overly figurative metaphors are not appropriate – the tone should remain formal. Also, do not introduce a new concept using different words interchangeably: use one term consistently for the same concept throughout the text. For example, if you initially write “catalyst,” do not later replace it with a synonym like “reaction accelerator.” Consistency in terminology makes the exposition clear and unambiguous.

Pay close attention to grammar and syntax. Ideally, dedicate each sentence to a single idea, avoiding convoluted constructions with multiple nested clauses. Steer clear of double negatives. Maintain consistency in tense and phrasing: strive for conciseness without losing meaning. For example, instead of “the conducting of the analysis demonstrated,” just say “the analysis showed.” Provide quantitative specifics in place of vague phrases whenever possible (“increased significantly” is better expressed as “increased by a factor of 2,” etc.). A formal and precise language will enhance the credibility of your writing in the eyes of the reader.

Below are some useful template phrases in English, typical for the scientific style, which can be used in various parts of the text:

Justifying relevance: One of the pressing issues at present is…; Increasingly important are issues concerning…

Literature context: It is known that…; This problem has been addressed by the following researchers:…

Stating the goal: The aim of the present study is to…; This work is aimed at investigating…

Noting advantages: An advantage of this method is…; The proposed approach has the advantage that…

Noting shortcomings: However, this approach does not allow…; The obvious drawback of the method is…

Logical connectors: however; moreover; on the one hand… on the other hand…; consequently; thus.

These stock phrases can lend your text a scientific tone and cohesion. However, use them judiciously and in the proper context, making sure the writing does not turn into a string of clichés. When used appropriately, such phrases make the material easier to follow and demonstrate your familiarity with academic writing conventions.

Structure of a Scientific Article

A standard scientific article has a clear structure that helps the reader quickly grasp what was done and found in the research. **A typical structure includes the following elements**:

Title – a concise name of the paper that reflects its content. The title should be informative and draw attention to the essence of the research.

Authors and Affiliations – the names of the article's authors and their institutions. (In this guide we won't delve into this element, but when preparing a real paper, be sure to format author information according to the journal's requirements.)

Abstract (Summary) – a brief summary of the work, usually 150–250 words. The abstract outlines the purpose, methods, key results, and conclusions of the study in very condensed form. Readers and editors use the abstract to decide whether to read the full article.

Keywords – a few terms (typically 3–6) reflecting the main topics of the work. These help index the article in search engines and databases.

Introduction – the beginning of the main text, where the relevance of the topic is justified, context is described, and the aim (and hypothesis, if any) of the research is stated. In the introduction, the author demonstrates familiarity with previous work and highlights the unsolved problem that the study will address.

Methods (Materials and Methods) – a description of *how* the study was conducted: the materials, equipment, experimental or data collection procedures, and analytical methods used. This section should provide enough detail for another researcher to replicate your study.

Results – a presentation of the factual findings and observations. Here you report the main *research results*: numbers, tables, figures, and identified patterns. It is important to **state the facts without interpretation** – *explaining the meaning of the results is reserved for the next section*. The results should be presented in a logical sequence and an objective manner, avoiding excessive detail that could overwhelm the reader.

Discussion – the interpretation of results and their significance. In this part, the author compares their findings with those of other studies, explains whether the initial hypothesis is supported, and discusses what new insights the results contribute to science. The discussion

also addresses the study's limitations (potential sources of error, scope of applicability) and may suggest directions for future research.

Conclusion – the final section, which briefly summarizes the main findings of the work. Sometimes the conclusion is combined with the discussion into a single "Discussion and Conclusions" section. Here it's important to highlight the main take-home message for the reader – what the study achieved and why it matters. No new evidence should be introduced; the conclusion is based only on results presented earlier.

References – a list of all sources cited in the article's text. This is formatted according to specific standards (GOST, APA, MLA, etc., depending on the journal). Proper citation supports the credibility and scholarly foundation of your work.

This structure can vary slightly between journals (for example, some require a separate literature review section, or combine Results and Discussion). However, in most cases the above elements are present and in the order given. By following this structure, you ensure the article is understandable and cohesive.

Writing the Title

The title of a scientific work is the first thing a reader sees, and the fate of your paper often depends on it. A well-crafted title attracts your target audience and makes it easier for others to find your work in bibliographic databases. The title should succinctly reflect the content of the paper and include key terms related to the research topic. At the same time, it must remain concise – about 10–12 words at most is recommended. **A declarative title is preferred** rather than a question: phrasing the title as a question often puts readers off, whereas a declarative title immediately conveys the essence of the finding. Avoid overly sensational claims or exaggerations – the title should accurately reflect your results, otherwise readers will be disappointed by a mismatch between the title and content.

To craft a good title, **include the important elements of your study**: the subject or problem, the key variables or conditions, and (if relevant) the study design or method. For example, a template "Effect of *X* on *Y* under *Z* conditions" might become a title: "Effect of temperature on polymer conductivity at varying humidity." If the work is a systematic review or meta-analysis, indicate that in the title (e.g., "…: a systematic review and meta-analysis"). Be mindful of **keywords**: think about what words or phrases a potential reader would search for – those terms should appear in your title.

A few **additional tips for titles**: - Use sentence case – capitalize only the first word and proper nouns (e.g., *"New approach to data analysis in spectroscopy"* rather than Capitalizing Every Word). - Avoid abbreviations or technical jargon unless they are widely known (for instance, DNA is fine, but an obscure method acronym should be spelled out). - When possible, create the title **after** writing the main body of the paper. Once your results and conclusions are clear, it's easier to pinpoint the main message to highlight in the title.

A strong title is crucial for ensuring that your work is noticed, read, and cited. Take the time to refine it: brainstorm multiple options, get feedback from colleagues, and choose the phrasing that best conveys the essence of your scientific contribution.

Writing the Abstract

The **abstract** is a brief summary of your paper or presentation, and it will be read by virtually everyone who picks up your work. In fact, the title and abstract are the most frequently viewed parts of a scientific publication. A well-written abstract can expedite peer review and increase the visibility of your work, as it gets indexed in search systems (e.g., PubMed, Google Scholar). The purpose of the abstract is to *concisely inform* the reader about what research was done and what main conclusions were reached.

What should be included in an abstract? It's usually recommended to cover five key areas: 1. **Background/Introduction** – *What is currently known?* Begin with 1–3 sentences introducing the research area and stating the context or importance of the topic.

2. **Objective(s)** – *What exactly did you study, and why?* Clearly state the primary research question or hypothesis.

3. **Methods** – *How did you do it?* Briefly describe how the study was conducted and note the type of experiment or analysis. Avoid low-level details but mention key methodologies (in some fields, specific guidelines apply: e.g., for clinical trials use CONSORT, for systematic reviews use PRISMA).

4. **Results** – *What did you find?* State the main quantitative or qualitative results. Include the most important data (for example, effect sizes, confidence intervals, p-values) to characterize your findings.

5. **Conclusions** – *What is the overall outcome and significance of the findings?* Indicate what your results mean and why they matter for the field.

If the journal requires a *structured abstract* with subheadings (e.g., Background, Methods, Results, Conclusions), follow those guidelines. If subheadings are not required, present the text as a single paragraph but still cover the information in that logical order. The abstract should be **self-contained**: it should make sense without reading the full paper or any additional references. Therefore, do not include citations or undefined abbreviations (unless an abbreviation like DNA is universally known).

Helpful tips when writing an abstract: - Adhere to the word limit. Every journal or conference has a maximum length (often ~150–250 words); stick to it so you don't have to cut down your text later. - Write the abstract with your primary audience in mind. Consider whether readers will be specialists or a broader scientific community. If your work might interest non-specialists or an international audience, use clear and accessible language (this is especially important in English, which many readers will read as a second language). - Focus on the main findings and novelty. The abstract is not the place for details; it's a showcase for the most important results and the "highlight" of your work. - **Write the full paper first, and the abstract last**. This way you'll know exactly what to emphasize in the summary. - After drafting, revise the abstract multiple times. Fix any typos and check grammar. *Errors in an abstract stand out to reviewers and readers* and create a poor first impression. Ensure that nothing in the abstract contradicts the content of the main text.

The abstract is the face of your research. Invest effort to make it clear, informative, and concise. Often, decisions on whether to send your paper for review or whether to read it in full are made based on the abstract, so a quality summary improves your chances of success.

Introduction: How to Write the Opening Section

The **Introduction** sets the stage for the entire paper or presentation. In this section, you move from general to specific: first, you draw attention to a broad problem area, then narrow the focus to the particular question your research addresses. A good introduction should answer three main questions: *What are we studying? Why is it important? What is already known and what gap remains?*

Begin by stating the scientific **problem and its relevance**. The first sentences can describe the general field and mention a key issue or trend. For example: "In recent years, *[broad field]* has attracted increased attention because *[why it's important]*." Make sure to indicate **what has been done by previous research**, and identify the *gap* that remains. It's often useful to provide a brief overview of major prior studies (mentioning authors or findings) to show your knowledge of the field and to justify the novelty of your work. Do not delve into excessive detail about other studies – just summarize their main findings, highlighting what is *unsolved* or *insufficiently studied*.

Next, clearly state the **aim and objectives of your research**. This is a key sentence (or short paragraph), often placed at the end of the introduction. For example: *"The aim of this study is to determine…"* or *"We aimed to test the hypothesis that…"*. If your study has a hypothesis, articulate it. You may also briefly indicate *how* you approach the problem (e.g., *"To achieve this aim, we employed… methods and conducted an experiment…"*). In the introduction, it's important to show how your work differs from previous efforts and what new contribution it makes.

The length of the introduction is typically about 10–15% of the entire article. Strive to write the introduction **clearly and logically**: each successive paragraph narrows the context further. Avoid unnecessary details that belong in the Methods or Results – those will come later. Nevertheless, after reading the introduction, the reader should understand what scientific question you addressed and why it matters.

Below are examples of typical phrases for starting an introduction and stating the goal: - "One of the pressing issues in modern [field] is…" – a useful phrase to open with context and importance.

- "Despite significant progress in…, … is still poorly understood." – indicates a gap in knowledge.

- "It is known that… However, the question of… remains open." – contrasts what is known with what is unknown.

- "The aim of the present study is…" – a classic formula to announce the objective.

- “In this work, the following objectives are addressed: …” – use this if you need to list specific tasks.

By following this structure in your introduction – from the general problem statement to the specific aim – you prepare the reader for your methods and results. An introduction that is clear and to the point immediately demonstrates the author’s professionalism and sets the right expectations for the rest of the work.

Methods Section

In the **Materials and Methods** section, you provide a detailed account of how the study was conducted. This section should allow the reader to assess the reliability of your results and, if needed, reproduce your experiments. **The key principle is to provide sufficient detail and clarity**: include everything that substantially affected the course of the work. At the same time, avoid overloading the text with trivial details that are not relevant to understanding the results.

Describe the following in order: - **Study subjects or materials**: what or who you studied (e.g., bacterial strains, groups of patients, material samples).

- **Equipment and materials**: list any special instruments, software, or reagents – including models and manufacturers if they are relevant to reproducibility.

- **Design and procedures**: explain how exactly the experiment or data collection was carried out. For example, “we conducted a double-blind controlled trial…” or “synthesis was performed according to X method with the following modifications…”. Describe the experimental protocol: sequence of steps, conditions (temperature, duration, etc.). If a method is lengthy, you can place details in a supplementary appendix and give an overview in the main text.

- **Data analysis**: state which statistical tests or data processing methods were used. Mention any software and versions. For instance: “Statistical analysis was performed in R v4.0; we used a t-test (α=0.05) to compare the groups…”.

Try to write in a **neutral and precise** manner. The Methods section is usually written in past tense and often in either passive voice or first-person plural, depending on the journal’s style. For example: *“Spectra were measured…”* or *“We measured spectra…”*. The important thing is to avoid ambiguity: any reader should understand exactly what was done.

Adjust the level of detail to the needs of your audience. If your readers are specialists in a narrow field, they will expect specifics (e.g., reagent concentrations). If the article is interdisciplinary, excessive technical detail might hinder comprehension – focus on key points and put technical minutiae elsewhere if necessary.

Don’t forget to mention **ethical considerations** if your work involves humans or animals (e.g., institutional review board approval number, informed consent from participants). Also, note the sources of any special materials or funding if relevant.

A well-structured Methods section increases trust in your results. Reviewers often pay particular attention to this section to evaluate reproducibility. Therefore, ensure that you have

laid out all the *steps of your study* in a clear, sequential manner, leaving no doubt about how the data were obtained.

Results Section

The **Results** section presents the main findings of the study **without interpretation**. Here you answer the question: *What was found?* Maintain objectivity and a formal tone: results should be reported as facts, with no evaluative commentary. **Do not mix results with discussion** – save any explanations or comparisons for the next section.

When writing the results, it's useful to follow a logical order, usually mirroring the stated objectives or the sequence of experiments. You can break this section into subsections with subheadings if the study encompasses multiple aspects. Each key statement should ideally be supported by data: numerical values, statistics, or references to tables and figures. For example: *"In Group A, the mean value of X was 5.2 ± 0.3, which is 20% higher than in Group B ($p<0.01$; see Fig. 1)."*

Make use of **visual aids – graphs, tables – to present data clearly**. In the text, be sure to refer to them: *(Figure 1 shows...)* or *(see Table 2)*, and briefly describe the main trends visible in those figures. There's no need to repeat every number from a table in the text; instead, emphasize what's important: for example, an increase, a difference between groups, or a correlation.

Ensure that you **avoid excessive results**. Include only data relevant to your stated objectives. An overly long list of findings can overwhelm the reader – focus on the primary outcomes. If there are secondary results that do not impact the conclusions, you can mention them briefly or place them in an appendix.

It's important that the content in the Results section **aligns with the Methods**: if you said you would measure three parameters, you should present results for all three. Avoid a scenario where a procedure is described but no corresponding results are reported (or vice versa). Such inconsistency raises red flags for reviewers.

Example phrases for the Results section: - *"As expected, an increase in temperature was accompanied by a rise in reaction rate: at 20°C the rate was..., whereas at 30°C it reached... (Table 1)."* - *"No statistically significant difference was found between ... ($p = 0.15$)."* - *"The analysis revealed a strong positive correlation between X and Y ($r = 0.85$)."*

Finally, **double-check the accuracy of units and notation**. If you introduced abbreviations or symbols for parameters, the reader should already be aware of them by the time they reach the results (they should be defined either in the Introduction or Methods). The Results are the core of your scientific work, and they must be presented clearly, honestly, and comprehensibly.

Discussion and Conclusion

The **Discussion** section interprets your results: here you address *what they mean* and *why they matter*. In the **Conclusion** (if it's separate), you briefly wrap up the work. Since these parts are closely connected, we will consider them together.

At the start of the discussion, it's common to **summarize the main findings** of the study in one or two sentences. This reminds the reader what you found. Then explain *why those results were obtained*. Relate your data to what was expected from the literature or your hypothesis: do the results support your hypothesis or not? If **the hypothesis was not confirmed**, discuss possible reasons. For example: *"Our results did not support the hypothesis that ..., which may be due to ..."*.

Compare your findings with previous studies: show how your conclusions fit into the context of existing knowledge. If they agree with other researchers' results, point that out (*"Our data are consistent with the findings of Ivanov et al. (2019), who also observed that..."*). If they contradict, highlight the differences and suggest why (*different methods, conditions, etc.*).

Discuss the **significance and implications** of your results. Why are they important for science or practice? Perhaps your findings solve a longstanding question, open a new line of inquiry, or have practical relevance. **Don't overstate** the importance, but do highlight the novelty: *"Thus, our study demonstrates for the first time that..."*. It's also good to mention the study's *limitations*: candidly note what factors could have influenced the results (e.g., small sample size, certain assumptions). There's no need to apologize or undermine your work, but defining the limits of your conclusions is important.

Towards the end of the discussion, authors often present **future directions**: what new questions arose, what should be studied next. This shows that you think critically about the problem and understand where to go from here. For example: *"Further research should investigate...", "The question of ... remains to be explored."*

The Conclusion is the final paragraph where you succinctly state the overall takeaways. It is usually structured as an answer to the aim stated in the introduction. For example: the primary insight to remember.

Do not introduce fundamentally new information in the conclusion. Avoid simply saying *"in this study, we did X"* – the reader knows that. Instead, focus on the inference. If relevant, one sentence can note potential applications or future work.

In summary: - *"Thus, ... (final overarching conclusion)."* - *"Our results confirm/refute ... and extend the understanding of ..."*. - *"This study demonstrates ..., which contributes to ..."*.

With a well-crafted discussion, you show depth of understanding of the problem, and with a clear conclusion, you show the ability to draw meaningful insights. Together, these sections convince the reader of the value of your work and provide a sense of closure to the study.

Conference Abstracts (Theses)

Conference theses (abstracts) are a brief summary of your research intended for conference proceedings or for participants to preview your presentation. Typically, an abstract for a conference is 1–2 pages or a limited number of characters, so it must be *concise yet informative*. In style and structure, conference abstracts are much like an expanded version of a paper's abstract, but they can be slightly more detailed.

In an abstract for a conference, you need to **convey the essence of your work** as succinctly as possible. The reader should understand the goal of the study, the methods used, the results obtained, and the conclusions drawn. A suggested structure for conference theses is similar to a mini-paper: - **Introduction** (1–2 sentences on relevance and problem statement). - **Aim and objectives** (what you investigated). - **Brief methodology overview** (literally a couple of sentences to mention the basics – e.g., the subject and method of experiment). - **Results** (the key quantitative or qualitative findings; not too detailed, but highlighting the main trends). - **Conclusion** (a final statement on the significance of the results and whether the aim was achieved).

It's crucial to maintain **logical flow and cohesion** – abstracts are read quickly, and the information should be easy to digest. **Avoid unnecessary content**: you don't need quotes, a lengthy literature review, or long introductions. Equations and technical jargon should be included only if absolutely necessary. Often, conference abstracts are written as a single fused paragraph without explicit sections; still, it should implicitly contain all the parts mentioned above.

A few tips for writing conference abstracts: - **Be to the point and persuasive**. Every sentence should carry information. For example, instead of generic phrases like "This research is very relevant nowadays…", immediately get specific about the topic. - **Emphasize results and conclusions** – in an abstract, those should stand out clearly. Conference attendees often scan abstracts looking for conclusions to decide whether to attend a talk. - **Avoid common mistakes**: don't turn the abstract into a promise of future work. An abstract is *not a proposal for planned research*, but a presentation of results you have already obtained. So write about what was done, not what will be done. - **Style**: scientific, but slightly less formal than a full paper. It's acceptable to use simpler sentences to stay within length limits. However, grammar and terminology must be correct – errors are unacceptable. - **Formatting**: follow the specific conference guidelines (font, margins, word count, whether keywords or references are required). Usually, references are minimal or omitted in abstracts unless explicitly requested.

Remember that the abstract is your face to the conference's scientific community. People will form a first impression of your work from it. A good abstract can pique interest among attendees and judges, and make your presentation stand out. Therefore, proofread it multiple times, have a colleague review it, and ensure that the text clearly reflects the main idea of your research.

Conference Presentation (Scientific Talk)

Preparing a **scientific conference presentation** (an oral talk) also requires careful preparation of the text (or at least an outline). Although the talk is delivered verbally, its

success is built on a well-structured written foundation: speaking notes, slides with key text points, handouts, etc. In this section, we briefly discuss how to prepare the content for your talk and the written report if a full paper is required.

The **structure of an oral presentation** generally mirrors that of an article, but in a more condensed form. Typically, you are given 10–15 minutes, so: - **Introduction** (about 1 minute): introduce yourself, state your topic, and very briefly sketch the problem and the aim of your research. Provide context, but do not go too deep – the audience has limited time. - **Main part**: discuss your methodology and key results. In an oral talk, you can omit minor methodological details, focusing instead on the concept of the experiment and the reliability of your results. Present 2–3 of the most important figures or tables (that's usually all the audience can process in a short time). Explain what each slide shows and highlight the trends. - **Discussion/Conclusion**: articulate the main takeaways and their significance. You might merge the discussion with conclusions by providing interpretation together with the final statement. End by stating why your results are valuable and perhaps mention future perspectives (in 1–2 sentences).

When preparing the content of your talk, **keep the audience in mind**. A conversational tone and clear phrasing are key to being understood. It's better to use simpler constructions than you would in a paper and avoid very long complex sentences. If you write out the speech fully, break it into short paragraphs and mark where to show a slide or pause.

Time and timing: be aware of your time limit and practice your talk to fit it. In your written notes, mark how many minutes each section should take to ensure you stay on track. Cut out anything non-essential – the oral format doesn't tolerate overload with details.

If the conference requires **submission of a full conference paper** (e.g., a 4–6 page paper in proceedings), then you essentially need to prepare a short article. The structure in that case is standard, but the length is less than a journal article. In such a written conference paper: - Follow the same logical flow as described for an article above, but write more concisely. - Often, a detailed literature review is omitted, citing only key references where results are compared. - Methods and results are presented briefly; sometimes the Discussion may be merged with Results to save space. - Format tables, figures, and references according to the conference guidelines (usually templates are provided).

Tips for the presentation: - At the beginning, be sure to greet the audience, introduce yourself, and state your topic – this establishes rapport. - Aim to speak clearly and not too quickly. In your written outline, highlight key words you want to emphasize. - If you forget to mention something, don't panic – the audience might not notice. The main thing is to convey the overall idea. - After your conclusion, thank the audience for their attention and be prepared to answer questions.

A well-prepared text and structure will help you deliver your talk confidently. Even though the presentation is oral, relying on well-written material and practicing will make your scientific message clear and convincing to your colleagues.

Editing and Proofreading

After finishing all the sections, devote special attention to **editing and proofreading**. This step is essential for enhancing the quality of your scientific text. When reviewing your work, focus on both the **content** and the **language**.

Here is a checklist of important points during the editing stage:

Clarity and logic: Ensure that your ideas are expressed clearly and that the structure of sections is coherent. Make sure the reader won't be asking "Why is this here?" If you find a sentence that is long or confusing, break it up or rephrase it more simply. Recall the guideline: *one sentence – one idea*. This is especially important when you are editing in a language that is not your native tongue – avoid literally translating complex idioms; it's often better to simplify the construction.

Transitions between parts: Check that transitions between paragraphs and sections are smooth. Add linking phrases if needed ("on the other hand," "in addition," "therefore," etc.) so that the logical thread is clear.

Precision of wording: Scientific writing demands unambiguity. Eliminate any ambiguous phrasing. Ensure that all terms are used consistently (as mentioned earlier, no sudden synonyms for the same concept). Verify units of measure, indices, and symbols – they should follow standard conventions. If you used acronyms, make sure each is spelled out at first use.

Spelling and grammar: Proofread carefully for typos and grammatical mistakes. An automatic spell checker is helpful, but it might not catch technical terms or proper nouns, so manually verify those. Grammatical errors and sloppiness in the text give an impression of carelessness. It's better to invest time to fix them now than to receive negative comments from reviewers later.

Style and consistency: Ensure that the writing style is consistent throughout the text. For example, decide on a narrative voice ("we found" vs. "it was found that…") and stick to it. Check that formatting is uniform and according to guidelines: font type and size, line spacing, citation style, figure captions, etc., all according to the journal or conference rules.

Factual accuracy: Cross-verify your data one more time. Is there a typo in any numbers? Do all in-text citations match the correct sources in the reference list? Does every figure label match what is described in the text? Pay special attention to figure and table captions: they should be self-explanatory and accurate.

Read aloud and get a colleague's input: A useful technique is to read the text aloud. This helps catch language roughness that might be missed when reading silently. If a sentence is hard to speak in one breath, it's probably too long or complex. It's also highly recommended to have a colleague or advisor read the draft. *A fresh set of eyes* can spot areas where the message is unclear. A colleague may catch errors you overlooked and can judge the clarity of your explanations.

Alignment with objectives: Check back against what you initially intended to convey. Have you covered all the points you planned? Is there any drift from the topic? It's good to ensure

that after all the revisions, the text still clearly addresses the question posed at the beginning and meets the research objective.

Finally, once you're confident in the text, **double-check the publisher's or organizer's requirements**: is your document formatted correctly? Do you have all required components (e.g., cover letter, abstract in the second language, etc.) ready to submit?

A well-edited text is characterized by high readability: editors and reviewers will be able to understand your work easily without being distracted by language issues. This will accelerate the review process and increase the chances of a positive outcome. In this way, the final mile – editing – is just as important as all the preceding stages of creating a scientific text.