

Section 1. Research Writing Basics

Unit 1. Academic/research
writing principles

Hello everyone! Welcome to our course on IMRD format: structural, stylistic and grammar features. Today we will talk about Academic Writing Principles.

You will learn about:

- Academic English
- Academic English Traditions
- Academic English Writing Principles
- Where to find credible sources

So, let's get started!

What is Academic English (AE)?

It is the English used in the world of research, study, teaching and universities. Reading an article in an academic journal or listening to someone giving a presentation or a talk about an academic subject presupposes the use of Academic English.

In the world of Science, Academic English is used to convey research. What is research then? Generally speaking, **research** is an argument that contains a position and evidence in support of that position and aims to prove that a position is the correct one. And the **argument** is all about rhetoric - the art of effective or persuasive writing. Here we need to go back to where it all started.

And it all started with Aristotle, an ancient Greek philosopher, who identified three key elements of persuasive communication. These elements formed **The Rhetorical Triangle of Effective Communication**, which included *pathos*, *logos*, and *ethos*.

Pathos appeals to the emotions and values of the audience. While academic writing is typically more objective and rational, it's important to recognize that emotions can play a role in how people perceive and respond to information.

Research writers may need to consider the emotional impact of their arguments and how they might resonate with their readers.

Logos focuses on logical reasoning and evidence. Academic writing should be grounded in solid evidence, such as data, research findings, or scholarly sources. The claims must be supported with relevant and reliable information, using logical arguments that connect these ideas and guide the reader.

Ethos refers to the credibility and authority of the writer. In academic writing, it's crucial to establish expertise on the topic by providing evidence of qualifications or citing reputable sources. This helps the writer build trust with their readers and enhances the persuasiveness of arguments. These elements do not exist separately, but serve to add to the persuasiveness of the text.

Academic texts are – in this respect – arguments that have a tight chain of reasoning. The classical **Aristotelean argument** is made up of five components, which are most commonly composed in the following order:

1. Opening
2. Context
3. Claim
4. Positive and negative proof
5. Conclusion

English Academic or Research writing principles have been adopted from Aristotle. The main principles are:

- Purpose and audience that come from Aristotelean pathos
- Formality and vocabulary
- Organization based on Aristotelean logos and implying a 3-part structure
- Clear paragraphing and information flow
- Clarity
- Linearity
- Citing, as well as referencing that come from Aristotelean ethos

Let's consider these principles in more detail.

Purpose. Academic English texts are typically written to convey research findings, present arguments, analyze data, or contribute to the existing body of knowledge in a particular field. General English texts may have a broader range of purposes, such as providing information, entertaining readers, or expressing personal opinions.

Audience. Academic English texts are written for a specific audience, usually scholars, researchers, or students in a particular field of study. General English texts, on the other hand, are intended for a wider audience with varying levels of knowledge and expertise. The audience plays a crucial role in academic writing as it determines the tone, style, and content of the writing.

Formality. Academic English texts are typically more formal in tone and style compared to general English texts. They avoid colloquial expressions, slang, and informal language.

Instead, they use a more objective and impersonal tone and often employ technical terms and precise terminology specific to the field of study. For instance, instead of saying “I believe” a researcher would write “It is hypothesized” or “Evidence suggests.” Additionally, contractions such as “don’t” or “can’t” are avoided, and the writing maintains a professional and objective tone throughout. This formality helps to convey the seriousness and credibility of the research being presented.

Vocabulary. In general, academic vocabulary can be considered to consist of three types of vocabulary:

- general words which are acceptable for academic use
- non-general academic words
- technical words specific to an individual subject area

General words which are academic, are general English words. Many of these words can be used in academic contexts. Consider these examples, all of which contain only words from the GSL, but all of which are acceptable in academic speech or writing: “... the aim of this report is to... what I want to talk about today is...There are several possible reasons for this, for example...In comparison, the control group...”

Academic words and word lists. Researchers have long been interested in creating a list of words which are not common in studies, but which are frequent in all or most academic disciplines. This type of vocabulary has various names, e.g. sub-technical vocabulary or specialised non-technical vocabulary. Perhaps the most well-known example of such a list is The Academic Word List (AWL). This can be a useful resource for building general academic vocabulary, though it should be remembered that this list is derived from written academic texts, so is most useful for written contexts.

The final type of words you need to study to improve your academic vocabulary is **technical words**, or words which are particular to your field of study. Examples are photosynthesis (for biology), inertia (for physics), externalities (for economics).

Let's consider these examples. Sentence one here, although with some general "academic" words, represents a typical General English sentence with contractions (its), simple expressions of opinion (I think), etc. While sentence two employs more sophisticated words (represent instead of is, acceleration instead of just rising), more complex structure (it is even longer) and has no contractions.

The same differences between General and Academic levels of formality and Vocabulary are seen in these two sentences. In general, academic writing tends to use more precise and specialized vocabulary, avoids personal opinions or first-person pronouns, maintains a formal tone, and provides evidence or references to support claims. It aims to present information objectively and professionally, adhering to the conventions and standards of the specific academic discipline.

Let's now move on to the **Organization of a text in Academic Writing**.

A well-structured academic paper should guide readers smoothly from one point to another, ensuring that the information is presented in a logical and coherent manner. To achieve this, Aristotelean Argument structure was transformed into a 3-part structure that includes Introduction, Main Body and Conclusion. This is true for all types of academic texts. «The purpose of paragraphing it to give the reader a rest.» Sai Fowler and he meant that paragraphs guide readers and are easy to comprehend. This easiness comes from their structure, which creates a cohesive flow.

A basic paragraph consists of four elements. A *Topic sentence*. This is the very first sentence of a paragraph. Sometimes a transition sentence might precede it. The topic sentence establishes an idea around which the rest of the paragraph will revolve.

Evidence can come in many forms. It can be paraphrased or directly quoted textual evidence, summary, hypothetical examples, anecdotes, and more. A *commentary* involves the writer's interpretation, analysis, or explanation. Usually, the commentary addresses evidence in the same paragraph. *Transitions* can come in the form of phrases, sentences, and paragraphs. They prepare the reader both for the sentence-level and paragraph-level ideas that follow them.

Now, pause the video. Read and try to identify these 4 elements of this paragraph. Ready to check? Have a look. Do you have the same or different ideas?

In addition to understanding Aristotelean rhetoric, it's crucial to consider the flow of information in your writing. A well-structured academic paper should guide readers smoothly from one point to another, ensuring that the information is presented in a logical and coherent manner. This is sometimes called **Parallel Progression**: AB BC CD.

Information flow means that the information is presented from an Old-to-New order. I mean that a sentence starts with the information known to the reader and finishes with something new. This way ideas are linked in a kind of chain, or in a parallel progression ABBCD, where each subsequent sentence starts with the information preceding it.

Have a look at this paragraph: "A nuclear power plant (OLD) contains a nuclear reactor that uses controlled nuclear fission to produce electricity (NEW)."

The reactor (OLD) consists of fuel rods alternating with control rods inside a large container called a reactor core (NEW). The fuel rods (OLD) contain radioactive fuel (NEW) and the control rods (OLD) contain neutron-absorbing substances (NEW)... You can see that each sentence refers back to the previous sentence. To be precise, to the information at the end of the previous sentence.”

Pause the video again and try to find old and new components of the flow. Are you ready to check? Have a look. Do you have the same or different?

One of the most important principles is *Clarity*. Academic writing should be clear, concise, and easy to understand. Avoid using jargon or overly complex language. Instead, strive for simplicity and clarity. Let’s take a look at an example: “The results were not satisfactory.”

This sentence lacks clarity. What does “not satisfactory” mean? Instead, be precise by stating exactly what you mean: “The results fell short of the expected outcome.” By being clear and precise, writers give their readers a better understanding of their message.

English is basically a language that is linear in structure in that sentences usually follow the **Subject–Verb–Object order** and English is also an uninflected language, which makes playing around with the internal structure of a sentence more difficult... In fact, everything in English (sentence, paragraph, argument, context, structure and even the language itself) is **linear**.

The last Principle of Academic and Research Writing is **Citing and Referencing sources**. This comes from Aristotelean ethos, which means building trust. Proper citation and referencing always give credit to the original authors of the ideas, theories, or data they used in their work.

This not only shows acknowledgement of the intellectual property and contribution of others and respect for their work but also strengthens writers' own arguments by supporting them with credible sources. The question may arise as to where we can find these credible sources?

There are various sources of information and digital databases that research writers can utilize to gather relevant and reliable information for their academic writing. Let's focus on the top most **popular databases**.

Number one among online databases is **Scopus**. It is one of the two big commercial, bibliographic databases that cover scholarly literature from almost any discipline. It has 90.6 million core records and covers over 7 million scholarly articles.

Number two is **Web of Science** also known as Web of Knowledge. Usually, academic institutions provide either access to Web of Science or Scopus on their campus network for free. It covers over 100 million scholarly articles.

Number three is **IEEE Xplore** - the leading academic database in the field of engineering and computer science. It's not only journal articles, but also conference papers, standards and books that can be searched for.

Number four is **ScienceDirect**. It is the gateway to the millions of academic articles published by *Elsevier*, 1.4 million of which are open access. Journals and books can be searched via a single interface.

Our Number five is the **Directory of Open Access Journals** (DOAJ). It is an open-access academic database that can be accessed and searched for free. Isn't it great?

Among online libraries, **Google Scholar** is by far the best. It is a free academic search engine, which searches repositories of: publishers, universities and scholarly websites.

The first line of each result provides the title of the document (e.g. of an article, book, chapter, or report). The second line provides the bibliographic information about the document, in order: the author(s), the journal or book it appears in, the year of publication, and the publisher. To the far right of the entry are more direct options for obtaining the full text of the document. In this example, Google has also located a publicly available PDF of the document hosted at *Washington.edu*.

To sum up, today we have covered the following: we firstly found the origins of Academic English in the Aristotelean Triangle of Rhetoric which includes logos, ethos and pathos. We discussed Academic writing principles and saw the connection between them and Aristotelian rhetoric. We also had a look at various online sources for credible sources. That's all for today. In the next unit we will discuss the role of standards in academic writing, IMRD format, their components and functions.