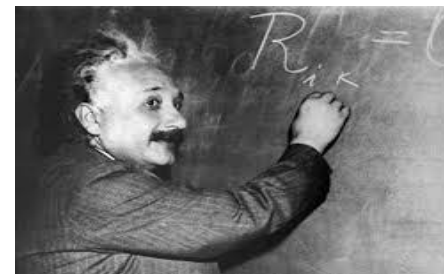




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Pubblicazioni scientifiche e impatto: open access, citazioni e bibliometrie

ESERCITAZIONI

Patrizia Gradito

IZSLT M. Aleandri, 26 novembre 2021





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CORE CONCEPTS

<https://esajournals.onlinelibrary.wiley.com/doi/full/10.1002/bes2.1258>

Scientific Writing Made Easy: A Step-by-Step Guide to Undergraduate Writing in the Biological Sciences

[Sheela P. Turbek](#), [Taylor M. Chock](#), [Kyle Donahue](#), [Caroline A. Havrilla](#), [Angela M. Oliverio](#),
[Stephanie K. Polutchko](#), [Lauren G. Shoemaker](#), [Lara Vimercati](#)

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The before steps

1. How your work fits into existing literature
2. Crafting a compelling story
3. Tailoring your story to a targeted audience



Bibliographic research

- *What do we know about the topic?*
perform a thorough sweep of literature
- *What open questions and knowledge do we not **yet** know?*
- *Why is **this** information **important**?*



what you want *your audience* to understand

Start by asking:

- *Who* is my audience?
- What are their *goals* in reading my writing?
- What *message* do I want them to take away from my writing?



INTRODUCTION

- Start wide to put your research into a **broad context** that someone outside of the field would understand, and **then narrow the scope** until you reach the specific question that you are trying to answer
- do not parrot everything you find
- Include **in-text citations in the format of (Author, year published)** for each paper that you cite, and avoid using the author's name as the subject of the sentence

~~"Kilner et al. ([2004](#)) found that cowbird nestlings use host offspring to procure more food."~~

use an in-text citation:

"Cowbird nestlings use host offspring to procure more food." (Kilner et al. [2004](#))



- narrowing the background information arrive at **the specific focus of your research**, clearly state the problem that your paper addresses. The problem is also known as **the knowledge gap**
- explicitly state **how your work** will contribute to filling that knowledge gap. This is a crucial section of your manuscript
- Define your **hypotheses** which logically derives from the knowledge gap
- provide a **1–2 sentence overview of your experimental design**, leaving the specific details for the methods section
- a **brief outline of your project** will allow your INTRODUCTION to segue smoothly into your 4th section





hypotheses relate directly to **research questions**, are written in the **present tense**, and can be tested through **observation** or **experimentation**.

Although the terms “hypothesis” and “prediction” are often incorrectly used interchangeably, they refer to different but complementary concepts.

A **hypothesis** attempts to explain the *mechanism* underlying a pattern, while a prediction states an expectation regarding the results





Materials and Methods

- arguably the most **straightforward section to write**
- **organize** this section into **subsections** with **headers** for each procedure you describe (e.g., field collection vs. laboratory analysis) to be reused in your **RESULTS AND DISCUSSION** as well
- describe you used scientifically valid methods, provide the reader with enough information to recreate your experiment.
- in chronological order, clearly **state the procedural steps you took**, include the model numbers the statistical analyses, and **specific settings of all equipment** used
- if you followed a procedure developed from another paper, cite the source: no need to write every detail
- **Use the past tense**



- **Site characterization:**

Study organism used, its origin, any pre-experiment handling or care

Description of field site or site where experiment was performed

- **Experimental design:**

Step-by-step procedures in paragraph form

Sample preparation

Experimental controls

Equipment used, including model numbers and year

Important equipment settings (e.g., temperature of incubation, speed of centrifuge)

Amount of reagents used

Specific measurements taken (e.g., wing length, weight of organism)

- **Statistical analyses** conducted (e.g., ANOVA, linear regression)



RESULTS

- The RESULTS section provides **a space to present your key findings** in a purely **objective** manner and lay the foundation for the DISCUSSION section, where those data are **subjectively** interpreted
- **identify which** graphs, tables, and data are absolutely necessary
- describing a complicated study: divide your results into **multiple sections with clear headers**
- While **statistical tests** give your data **credibility** by allowing you to attribute observed differences to nonrandom variation, they fail to address **the actual meaning of the data**





DISCUSSION

- form a **self-contained story** tying together your INTRODUCTION and RESULTS sections, here you **interpret your results**
- **refer to data to be consistent**
- presenting and evaluating **alternative explanations** of your findings will provide clear opportunities for **future research**
- intermingle interpretations with **reference preexisting literature** and report how your results **relate** to previous findings
- *How do my results compare to those of similar studies? Are they consistent or inconsistent with what **other researchers** have found? Are you asking a similar question in a different system, organism, or site? Was there a difference in the **methods or experimental design**?*
- **Any caveats of the study** (e.g., small sample size, procedural mistakes, or known biases in the methods) should be transparent and briefly discussed



CONCLUSION

- the final opportunity to state the **significance** of your research
- summarize the **outcome of your study** to incorporate new **insights** or frame interesting questions
- acknowledge **the shortcomings or caveats** of your research project
- use **take-home sentences** to focus on what you have accomplished and the broader implications of your study





a paper needs to flow

- to bolster the flow, **overarching** your story: always **connect** new questions with resolutions and **tie** new concepts to previously presented ideas
- **words/ ideas placed toward the end of a sentence convey the most importance**
- **Avoid overusing the passive voice**
- **Avoid peppering your work with overly complicated words**





Your editing

- write down **your key points**
- Print, **re-read your paper loud** and incorporate constructive feedback from others
- verify:

where are the gaps in your story structure? What has not been explained clearly? Where is the writing awkward, making it difficult to understand your point?





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- Anti
- Antibiotico
- antimicrobico

