



**Organização:** Pró-Reitoria de Pesquisa - USP



# Workshop de Capacitação em Escrita Científica

## *Módulo 7*

Prof. Dr. Valtencir Zucolotto  
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Instituto de Física de São Carlos, USP*

*USP, 2012*



# Workshop Outline

**Módulo 1:** O Gênero Literário

Seções de Um Artigo Científico

**Módulo 2:** Estrutura 1: *Abstract*

**Módulo 3:** Estrutura 2: *Introduction*

**Módulo 4:** Estrutura 3: *Results and Discussion, Conclusion*

**Módulo 5:** Estilo

Linguagem 1: Especificidade, Complexidade e Ambiguidade

**Módulo 6:** Linguagem 2: Redundâncias, Ação no Verbo, Fluidez de Texto, Ritmo de Escrita

**Módulo 7:** Linguagem 3: *Plain English*, Escrever em Inglês, Preposições

**Módulo 8:** Linguagem 4: *Topic Sentences, Cover Letters, Final Remarks*

# Módulo 7

## Linguagem 3:

*Plain English*, Escrever em Inglês, Preposições



# *Language III*

## Writing Nothing

~~It is significant to note the fact that...~~

~~It is relevant to mention here that the results...~~

~~The findings reported here demonstrated that...~~

## Needlessly Complex words:

Avoid	Use
Utilization	Use
Facilitate	Cause*
Finalize	End
Utilize	Use
Firstly, Secondly	First, Second
Commencement	Beginning

## The word “Fact”

Replace “This fact” by:

This effect,  
This hypothesis,  
This observation,  
This value,  
This phenomenon,  
This finding, etc.

The same applies to “Case”



## Oooops: The word “work”

### M7P1 Lang

“In this paper, detailed characteristics of the hydrated (LPEI/PAA)OEGDA composite are investigated and the reason for its relatively high ionic conductivity is discussed. Morphological effects due to the presence of OEGDA oligomer on the phase transition will also be described.”

Lowman et al., *Langmuir* **2004**, *20*, 9791-9795

### M7P2 Lang

“**In the work reported here**, a polyelectrolyte multilayer platform capped by a polyanionic surface was created through layer-by-layer assembly [21] and stamped with a polycationic pattern using POPS, to form docking sites for the negatively charged magnetic beads.”

Lyles et al., *Langmuir* **2004**, *20*, 3028-3031



~~Preliminary  
Careful  
Obtained  
Novel  
Successfully~~

Are these words relevant in SW??



## Brazilian's problems with articles

*The determination of the mechanical properties of alloys containing manganese was carried out using the stress-strain tests*

Better ??

*Mechanical properties of alloys containing manganese were evaluated using the stress-strain tests*

In Scientific Writing:

**Mechanical properties of Mn-containing alloys  
were evaluated via stress-strain analyses**

## Lack of a subject

Acid rain is now a worldwide concern. Observed initially in Europe as a form of an acidic rain, also is now observed in the Americas.

Acid rain is now a worldwide concern. Observed initially in Europe as a form of acidic rain, **it** is now also observed in the Americas.

Remember:

**It** rained a lot yesterday....

**One** may observe that....

Thus,  
In this context,  
So,

**Go to:**

**<http://corpus.byu.edu/coca/>**

**And check about the use of prepositions in  
the following cases:**



## VERBS FOLLOWED BY PREPOSITIONS

account	decide	estimate
agree	decrease	exceed
allow	determine	fit
answer	develop	hinder
balance	differ	identify
change	disagree	originate
compare	discern	prepare
connect	discriminate	qualify
convert	distinguish	range
correlate	divide	
correspond	elaborate	

## WORDS FOLLOWED BY PREPOSITIONS

abundance	control	enthusiasm	necessary
abundant	convenient	equality	necessity
affinity	correct	equivalent	need
akin	decrease	evidence	opportunity
applicable	deficient	familiar	parallel
appropriate	demand	focus	proficiency
available	dependent	fundamental	proficient
basis	difference	identical	search
capability	different	improvement	sufficient
capacity	disagreement	independent	suitable
cause	discussion	influence	suited
close	disparity	inherent	superiority
common	distinct	intended	test
concern	distinction	level	valuable
consistent	enhanced	method	variation

# *Commonly Misused Words*

## To Administer or to administrate?

To administrate: to manage.

A drug is administered.

Ulcers were induced by *administrating* 20% acetic acid.

Ulcers were induced by *administering* 20% acetic acid.

<http://www.inter-biotec.com/biowc/style.html>

## Common or popular?

Common: widespread

Popular: especially liked or preferred.

**Cancer is the most *common* cause of death in....**

**Cancer is the most *popular* cause of death in....**

**Soccer is a *popular* sport in Brazil**

**Soccer is a *common* sport in Brazil**

## To Describe or to report?

Cases are reported  
Patients are described

**We describe/report a patient with malaria.**

**We report/describe a case of malaria.**

## Analysis or Analyses?

Analysis = Singular

Analyses = Plural

**Thermal analyses were carried out using DSC ....**

**The infrared spectroscopic analysis was performed....**

## Reproductive or reproducible?

Reproductive: related to reproduction

Reproducible: can be repeated, reproduced.

**Results were *reproducible* or *reproductive* in all three experiments.**



## Eminent, Immanent or Imminent ?

Eminent: Famous

Immanent: Inherent or intrinsic

Imminent: Ready to take place

**An *eminent* peak....**

**A combination of *immanent* properties....**

**An *Imminent* event will happen soon....**

## Through, Thorough or Though?

Through: by means of;  
Thorough: careful, complete  
Though: however; nevertheless

- Calculations were made *through* computational simulations
- The substrates were *thoroughly* washed with pure water
- Results agreed with previous papers, *though* few discrepancies appeared

## Hard or Hardly?

Hard: Performed with energy:

*A project that required years of hard work.*

Hardly: Barely; almost not:

*I could hardly hear the speaker.*

Work hard or work hardly??

## Compose or Comprise?

*Water is composed of hydrogen and oxygen*

*Training comprised theoretical and practical classes*

## Ability and capacity

Ability: Skill

Ex: Hemoglobin has the ability to combine with oxygen.

Capacity: Total amount that something can hold, contain or receive

Ex: The beaker used in distillation had a capacity of 50 mL.

## Increase, Enhance and Improve

Increase: To become greater or larger in size, number, degree...

Enhance: To add value or worthy to something already attractive

Improve: To raise to a better quality or condition.

The number of transgenic species increased in the last years.

Computer software enhanced with the advent of Internet.

The treatment improved patient's condition.

**Data:** A plural, like *phenomena* and *strata*.

William Strunk and E. B. White, *The Elements of Style*

**Data:** In its current use, *data* occurs in two constructions: as a plural noun (like *earnings*) taking a plural verb...and as an abstract mass noun (like *information*) taking a singular verb...

*Merriam-Webster Dictionary of English Usage*



# Sources



Essentials of Writing Biomedical Research Papers by Mimi Zeiger,  
Mcgraw-Hill Professional, 2<sup>nd</sup> Ed, 2000.

<http://www.infoplease.com/ipa/A0200807.html>





# Muito Obrigado

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# ***Módulo 8***

## Linguagem 4:

*Topic Sentences, Cover Letters, Final Remarks*



# *Language IV*

A topic sentence is the most important sentence in the paragraph.

T. Sentences are strongly correlated with:

- Topic (keyword) and
- Message of the paragraph (verb/subject structure).



# Topic Sentences

**To assess the distribution, size, and shape of ganglion cell bodies in the tracheal neural plexus, we examined individual cell bodies in their entirety at 100-400 x with a compound microscope. For the assessment of distribution, first ganglion....**

**There are three different theories put forward for the very slow relaxation of catch muscles in molluscs. One theory holds that....**

**Pulmonary nerve endings were relatively insensitive to diguanides, as seen in table 1). Of 25 pulmonary nerve ending tested, only 10 were stimulated....**

Essentials of Writing Biomedical Research Papers by  
Mimi Zeiger, McGraw-Hill Professional, 2<sup>nd</sup> Ed, 2000.



# Topic Sentences

Garlic (*Allium sativum* L.) has been used for centuries for medicinal purposes.

[...]. Its use for healing purposes can be traced back as far as 1550BC when documentations of its therapeutic use first appear in Egypt (Hassan, 2003; Rivlin, 2001). In modern times belief in the beneficial effects of garlic on health has led to it being used for a number of conditions. Garlic has been shown to reduce the risk of cardiovascular disease (Aboul-Enein and Aboul-Enein, 2005), and possess anti-microbial (Sivam, 2001) and antioxidant properties (Imai et al., 1994). This essay will explore research into garlic's potential roles in reducing cancer risk and in treating cancer.

<http://www.monash.edu.au/lls/llonline/writing/science/paragraphs/1.2.xml>





# Topic Sentences

Student success at university is the result of a number of inter-related factors.

[....]. The most important factor is a student's past experience of study. If a student has already developed good study habits, study at university should not be difficult. Good study habits need to be complemented by interest and motivation, factors which are important when competition gets tough. We should however not underestimate the distracting effects of financial and personal difficulties. All students have to grapple with these at some stage of their university life. Beyond the personal factors it has to be said that there is also a certain element of luck involved in success: this includes finding excellent teachers and the subject matter that inspires one to give one's best.

<http://www.victoria.ac.nz/lc/academic-writing/index.html>

# Topic Sentences

Find the appropriate Topic sentence:

\_\_\_\_\_ (topic sentence).  
Arriving in the land below the Rio Grande River, the Spanish conquistador Hernando Cortez was surprised to see the local inhabitants raising crops that included avocados, corn, garlic and nuts. Onions, tomatoes, chilli peppers and pumpkins were also grown in the rich soil. Irrigation systems were employed in some of the drier regions. The Aztec farmers also were skilful in creating terraced gardens to make the most of the rainfall and to minimise soil erosion. Evidence shows that they employed crop rotation as well as natural fertilisers to enhance the production of their farm products.

## Options:

1. The Aztecs of Mexico were a nation of accomplished farmers.
2. Hernando Cortez discovered farming in Mexico.
3. Mexico is blessed with rich farmland and an abundance of food products.

<http://www.victoria.ac.nz/llc/academic-writing/index.html>



## M8P1 Nature Mat

When the materials from which the spheres were made charged at different rates, structures of different morphologies could form during **the course** of charging. Figure 3 illustrates the assembly of 40 Teflon and 80 PP spheres agitated at  $\omega \sim 9$  Hz and  $A \sim 10$  mm. *The Teflon spheres charged more rapidly than the PP ones (Fig. 3a). When, after approximately 30 seconds from the start of agitation, the ratio of charges  $Q_{Tef}/Q_{PP}$  was close to  $-2$ , the spheres organized into a hexagonal structure (Fig. 3b, left). PTMC simulations predicted this structure to be a global energy minimum of the system. As the agitation continued, the magnitudes of charges on the Teflon and PP spheres equalized. The hexagonal arrangement became energetically unstable. After  $\sim 15$  minutes, approximately half of the PP spheres were expelled towards the walls of the container, and the morphology of the aggregate changed to square (Fig. 3b, right).....*

Grzybowski et al., *Nature Materials* 2, 241–245 (2003)



M8P2 IEEE Sig Proc

Other articles in this issue also discuss statistical models for location measurements. Compared to Gustafsson and Gunnarsson [87], who present models for RSS, TOA, and AOA measurements useful for cellular mobile system (MS) location and tracking, our focus is on the shorter-range, low-antenna, sensor network environment. Gezici et al. investigate UWB measurement models for both RSS and TOA in much greater detail than in this article, in which UWB is just one of multiple measurement modalities [89].

Patwari N. et al, IEEE Signal Processing Magazine, 2005, p 54



# Topic Sentences



Cystic fibrosis (CF) is one of the most common genetic disorders.

[....] CF is inherited as an autosomal recessive trait and a defective gene causes the body to produce an abnormal amount of very thick, sticky mucus which clogs the lungs and pancreas, interfering with breathing and digestion. This mucus builds up in the breathing passages in the lungs and the pancreas and respiratory complications develop from the blockage of the bronchial passages. Eventually, the cilia which are responsible for clearing the mucus are destroyed. In addition, the mucus traps bacteria which cause infections and permanent damage to the lungs, and may also block the ducts of the pancreas which contains enzymes necessary for the digestion of food.

<http://www.monash.edu.au/lls/llonline/writing/science/paragraphs/1.2.xml>



# *Final Remarks*



## Transform the text into a Scientific Abstract

In this work we describe the experimental development of special sensors for diagnosis of diseases. Experimentally, the sensors comprise antibodies that recognize specific kinds of human proteins produced by a persons immunological system fighting against mammalian cancer cells in a very short period of time. In this context, a new methodology for protein detection was developed and the efficiency improvement is presented. Protein isolation techniques are discussed. The amount of protein detected by the sensors was evaluated. The preliminary results were analyzed using appropriate statistical methods. To optimize the systems, the sensor were experimentally produced using different immobilization strategies and all the collected data obtained from preliminary results show that different types of cancer cells lines can be detected at very low limits of detection. The obtained results corroborated previous results found in published papers. The systems will be evaluated in clinical trials in a period of few months. Since highly sensitivity and specificity were achieved by the sensors, clinical areas may benefit from our new technologies.

*The Paper is ready.*

*What happens now??*



The cover letter is the document that introduces the manuscript to the editor.

A good cover letter makes clear the importance of the paper and the reasons it deserves to be published.



# *The cover Letter*

Remember:

Editors must reject 70 – 90% of submitted manuscripts



## Example 2:

Dear Editor:

Please find attached the manuscript entitled: **A new strategy to investigate the toxicity of nanomaterials using Langmuir monolayers as membrane models**, which we submit for publication in Nanotoxicology. The reasons why we believe it deserves to be published stem from the following features:

- i) To our knowledge, this manuscript is the first report of a novel strategy to investigate the types of interaction that may occur between a nanomaterial, *viz.*, carbon nanotubes and phospholipid membranes, in a way that experimental parameters can be controlled at the molecular level.
- ii) The methodology is reported here for a specific carbon nanotube/dendrimer complex, which had been applied as drug-delivery systems. However, this new methodology may be of interest to a wider audience investigating the toxicity of nanomaterials, either *in vitro* or *in vivo*, since the same strategy can be applied to different nanocomplexes, nanoparticles, etc.

Sincerely

Prof. Dr. Valtencir Zucolotto



# *The Manuscript*



JPCC Manuscript

JPCC manuscript corrected version

JPCC response letter

BB response letter

JPCC Proofs

JPCC Editorial revision



# *How to skim a paper?????*



# Skimming a paper

1. Read the Title
2. Check the Authors and Date
3. Read the Abstract
4. Read the 1st Paragraph
5. Read the First Sentence of each Paragraph
6. Look quickly at each Figure/Table and Captions
7. Read the Conclusion

Adapted from: Science Research Writing for Non-Native Speakers of English, Hilary Glasman-Deal, Imperial College Press, 2009





# Sources



**Scientific Writing, Easy When ou Know How, Peat, J., Elliot, E., Baur, L., Keena, V., BMJ Books, 2009**

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