GDA Sidi Amor المجمع البيئي للتنمية المستديمة سيدي عمر

Université de Tunis El Manar

Université Laval — Faculté des sciences de l'administration

WRITING DAYS | **SUMMER SCHOOL**

Social, economic, ecological, and technological benefits and issues related to green buildings and raw earth materials

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I. Objective and content of the writing session

Goals

- Discover the **practices involved in writing of a scientific document**;
- Apply the **knowledge learned during the theoretical sessions** offered during the workshop.

"*Your mission, should you choose to accept it*" consists of four main tasks:

1. **Explore a specific topic** related to **green building** or the use of **raw earth** materials;
2. Define and **formulate a tangible issue as a scientific research problem**;
3. Propose a project or solution that represents both a **scientifically innovative contribution** and **concrete progress** on the issue;
4. Design **a plan for implementing, testing, and evaluating** your solution.

Oral presentation

If time allows, you will give **a brief oral presentation (or *pitch*)** of your project

→ You will also be asked to **defend your ideas**, which will be **challenged by questions from the audience**!

II. Define an issue and formulate it as a research problem

→ It would be better to choose an issue relevant to the Tunisian context!

Socioeconomic topics

(i) **social acceptability** and **public opinion** of green buildings (*more or less expensive? better or worse quality of life? longer durability?*), (ii) **ecological need to make them the "*new norm*"**, (iii) **socio-economic benefits** (*job creation, price, material availability, etc.*), (iv) traditional versus modern **aesthetics** of raw earth, sand, and stone-made buildings, etc.

Purely scientific issues

(i) **chemical composition** of the materials used and impact on the **quality**, **resistance** (*to water or pressure*), and **durability of the bricks**, (ii) **measurable ecological impact** and **environmental effects** of **producing**, **using**, and **disposing** the buildings, (iii) **thermal** and **acoustic insulation**, etc.

Resources

Online GDA Sidi Amor Library
https://sidiamor.org/developpement-durable-ressources-tunisie/?filter=true&type_ressource=fichier&ressource_filter=ecoconstruction

Google Scholar
https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=green+building&btnG=

Google Drive folder
https://drive.google.com/drive/folders/1NFzXj5Tj7BlN2PMOX1x_FtqBsTbhXhQX?usp=drive_link

III. Propose a scientific and practical contribution

Good practices

- To **position your solution** and **demonstrate its innovative characteristics**, you should draw on **ideas** and **inspirational insights**, but also on **gaps** or **shortcomings**, of past works;

- Depict your ideas with the help of an **illustration** or **diagram** to facilitate its communication.
  → Promote the **use of standards** (*plans*);

- Be **as specific as possible!** Detail your solution using **metrics**, **KPIs**, and **data** such as quantities, colors, materials, prices, sizes, etc.

- Think about the **potential gains**, but also (*external factors, inherent weaknesses, infeasibility, etc.*) **risks and limits**, of your solution!

IV. Design a experimental protocol to validate the solution

An idea must be **verifiable**, **measurable**, or **quantifiable** to be **considered a scientific contribution!**

Experimental protocol

- Explain **how you plan to execute your solution**;
- Describe **how you intend to measure your results and evaluate if you reached your target**: *metrics used, scales of values (bounds, ranges, categories, etc.), expected objectives, elements of comparison, etc.*

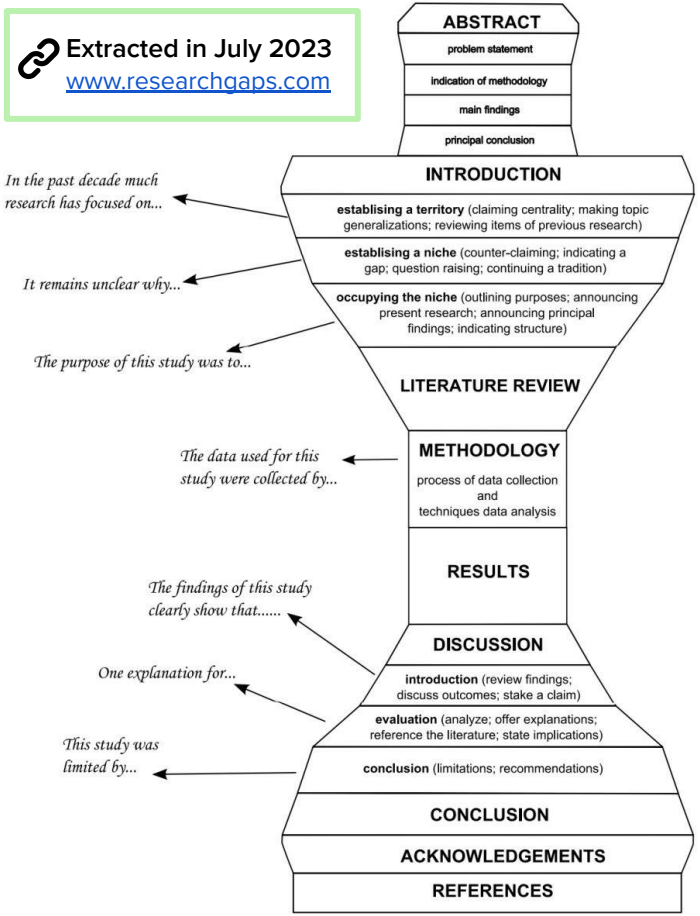
The validation strongly depends on the nature of your contribution!

- **A socio-economic contribution is often linked to a qualitative protocol**: *human and expert opinions, observation and interpretation, strong methodological aspects, etc.*
- **A scientific contribution relies on a quantitative protocol**: *numerical metrics measured based on formulas or models, data estimated using devices or sampling, or before-after comparison.* The methodology is left aside for a more **empirical**, **statistical**, or **absolute demonstration**.

blog.optimalworkshop.com

V. Generic structure of a scientific paper

Extracted in July 2023
www.researchgaps.com



So, what is an abstract?

An abstract is a very small version of a full scientific paper.

It **follows the same structure** but **focuses only on the most important information**: *the issue studied, the proposed solution, the experiments carried out, and the main results and conclusions.*

The actual paper provides **more detail on the existing literature**, on the **methodology,** and often **contains a more in-depth discussion** of the results.

Writing style

It is advisable **as objective and scientific as possible** when writing the paper.

However, it is possible to **choose a more personal, poetic, or even philosophical style** in the **description of the problem studied** and in the **final conclusion!**