ENGLISH LANGUAGE

SEMESTER 1: 2023-2024

CHAPTER 2

INSTRUCTOR

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READING

New Prototype of Photovoltaic Solar Tracker Based on Arduino

Abstract: The global increase in energy demand and exponential exhaustion of fossil recourses has favored the development of new systems of electricity production. Photovoltaic solar energy is undoubtedly one that has the highest application in housings, due to its simplicity and easy implementation. In this work, a new prototype of photovoltaic solar tracker with Arduino platform was developed. Feedback control system that allows carrying out solar tracking with two axes using a stepper motor and linear actuator was established through an electronic circuit based on photodiodes. Moreover, real construction of the prototype was carried out, where the effectiveness of the design and its capacity to draw a maximum benefit of an incident radiation can be observed, placing the panel perpendicularly to the received energy and improving its performance for its application in future installations in housings. Results obtained from the comparison between the developed prototype and a static panel oriented according to the latitude of the area, show about 18% energy gain.

W. Zhou, Z.M. Xu / Journal of Materials Processing Technology 63 (1997) 358-363

Skimming and Scanning

- ✓ What is the background of the topic?
- ✓ What is the novelty of the article?
- ✓ What are the studied devices, methods, materials, parameters, and\or ranges?
- ✓ What are the obtained results?

Casting of SiC Reinforced Metal Matrix Composites

Abstract

Composites based on two aluminium alloys (A536 and 6061) reinforced with 10% or 20% volume fraction of SiC particles were produced by gravity casting and a novel two-step mixing method was applied successfully to improve the wettability and distribution of the particles. The SiC particles were observed to be located predominantly in the interdendritic regions, and a thermal lag model is proposed to explain the concentration of particles. It was found that the SiC particles acted as substrates for heterogeneous nucleation of Si crystals in one of the cast composites. This observation can also be explained by the thermal lag model proposed.

Skimming and Scanning

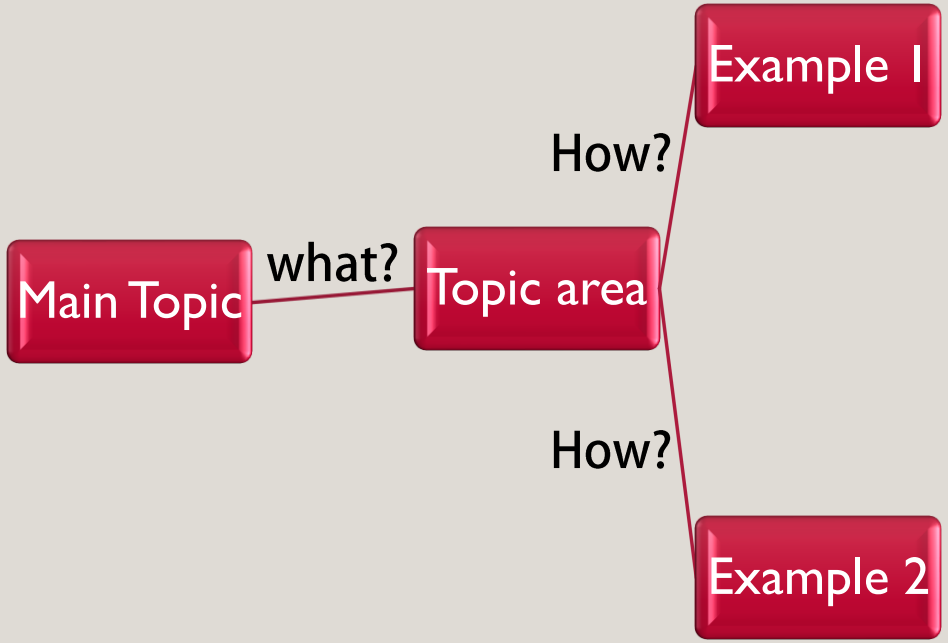
- ✓ What is the background of the topic?
- ✓ What is the novelty of the article?
- ✓ What are the studied devices, methods, materials, parameters, and\or ranges?
- ✓ What are the obtained results?

WRITING

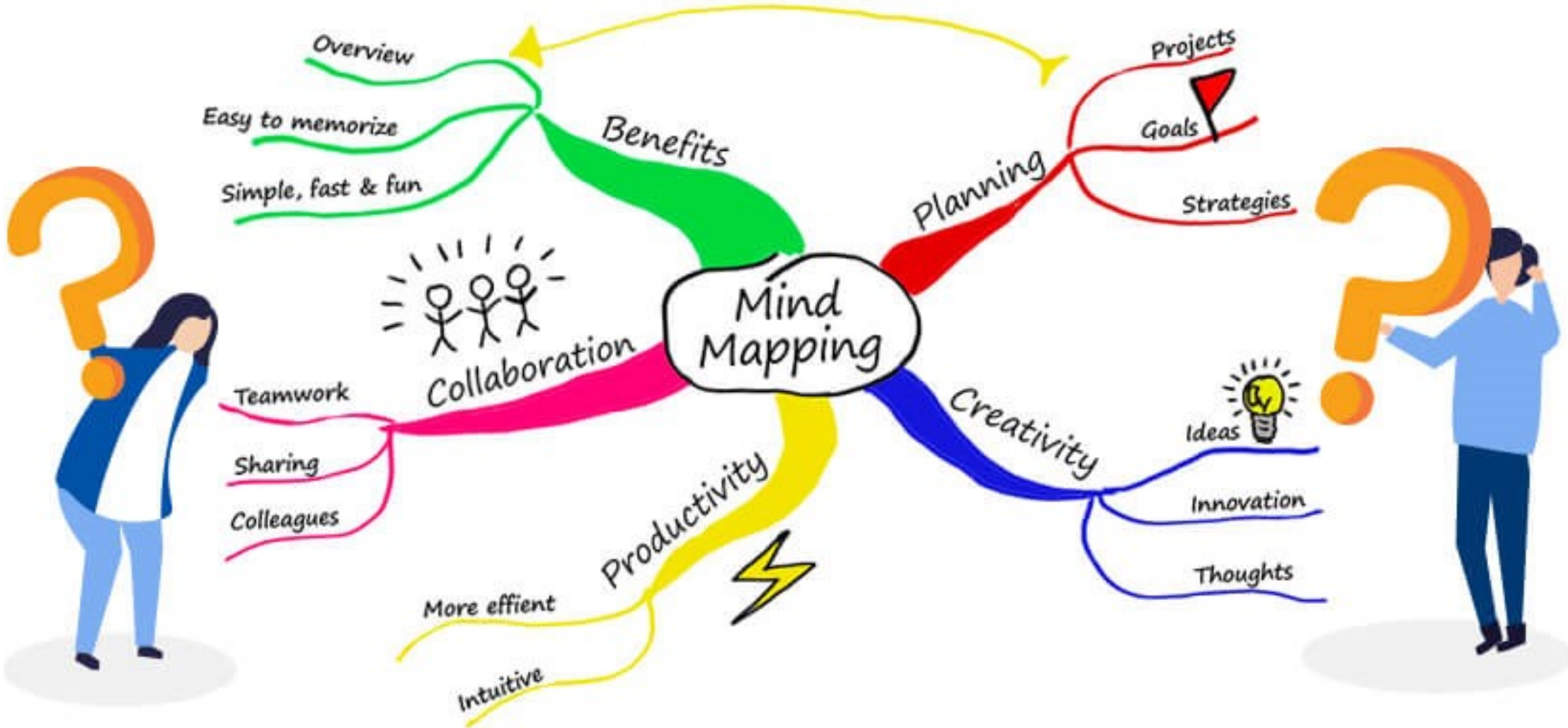
STUDY SKILL: BRAINSTORMING IDEAS

- ✓ Before you write, think about the topic.
- ✓ Use a diagram to help you organize your thoughts.
- ✓ Decide on topic areas, and think of examples.
- ✓ Write notes and single words on the diagram.
- ✓ Don't discard any ideas or thoughts at this stage.
- ✓ Don't worry about what is more or less important at this stage.

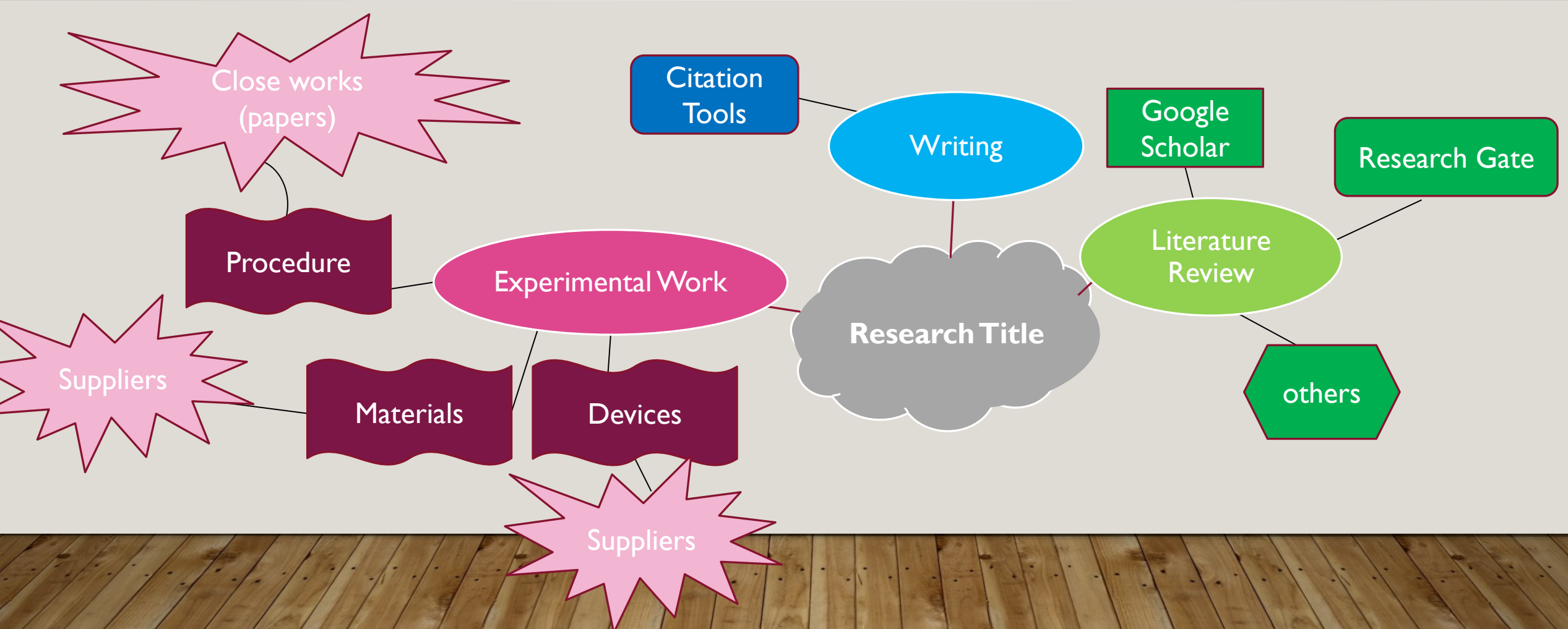
When you finish brainstorming ideas, choose which ideas you want to use in your writing, and decide on a logical order for them.



Mind map


Mind Mapping
Benefits
Overview
Easy to memorize
Simple, fast & fun
Planning
Projects
Goals
Strategies
Collaboration
Teamwork
Sharing
Colleagues
Productivity
More effient
Intuitive
Creativity
Ideas
Innovation
Thoughts

MIND MAP


Close works (papers)
Citation Tools
Writing
Google Scholar
Research Gate
Procedure
Experimental Work
Research Title
Literature Review
Suppliers
Materials
Devices
others
Suppliers

ASSIGNMENT

Draw a mind map for a thesis/ paper plan

VOCABULARY DEVELOPMENT

STUDY SKILL: SYNONYM AND ANTONYM

A **synonym** is a word or phrase that has the same meaning as another word or phrase.

Example: show ≈ reveal ≈ indicate

Figure 1 shows/ reveals/ indicates the influence of heat on the upper layer.

An **antonym** is a word or a phrase that means the opposite to another word or phrase.

Example: dry × wet

The soil was not dry when the experiment was conducted. ✗

The soil was wet when the experiment was conducted. ✓

SUGGEST FOR ME

Each department, please suggest two synonyms and two antonyms.

THANK
YOU!