

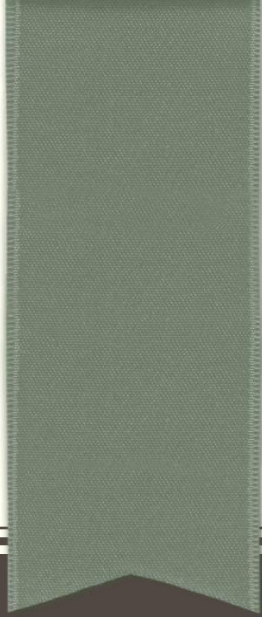


# MASTER THESIS GUIDANCE: ONLINE WORKSHOP III EDITION

January 25<sup>o</sup> 2023 - 2:30-5pm  
MHR tutors



*Please note: only the first part of the meeting - concerning «useful information» - will be recorded. The slides will be made available on the Infodesk and the mhr website.*



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# USEFUL INFORMATION

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# Useful information

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- MHR thesis template and information on graduating procedure: [Graduating](#)
- UNIMI SBA course “**Towards my thesis**”: check for upcoming sessions [here](#)
- **UNIMI e-learning course**: check [here](#)
- Infodesk meeting “**Step by step to graduation**”: **February 1<sup>st</sup>, 14:30-16:00**

## **Important deadlines for the upcoming winter graduation session (March 2023)**

- Online application for graduation: from 16 to 31 January 2023
- Graduands questionnaire completion deadline: within 31 January 2023
- Deadline for completing exams: **within 31 January 2023**
- Online thesis submission: from 13 to 28 February 2023
- The calendar will be published indicatively on: 17 March 2023
- Thesis presentation and announcement: on 23-24 March 2023

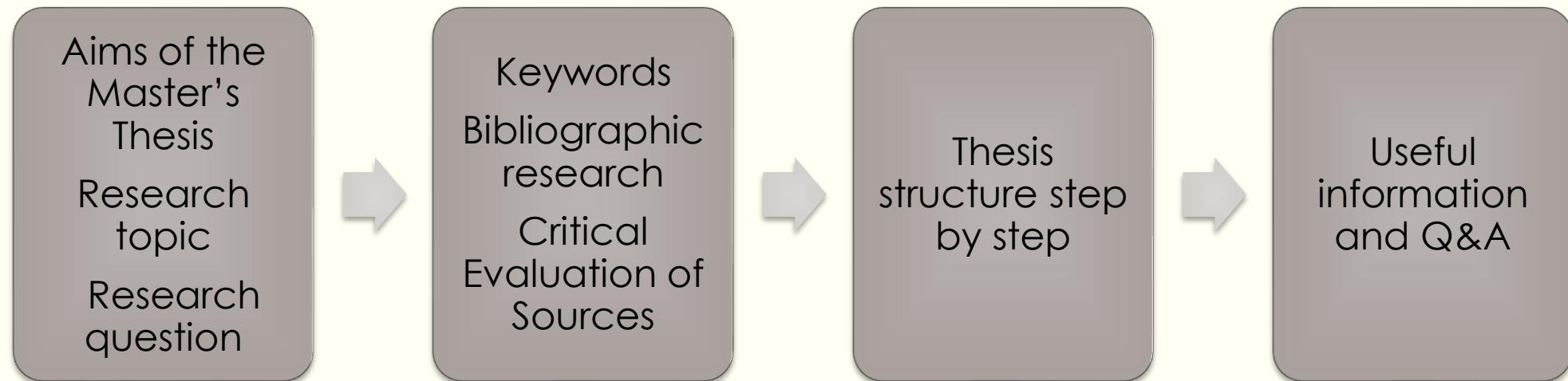
# Workshop objectives

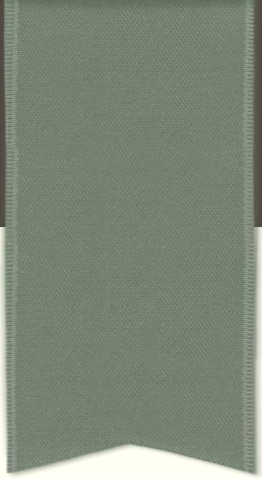
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- Provide basic information on the master's thesis
- Get acquainted with basic tools for developing your final thesis
- Answer your questions

# Workshop Agenda

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# INTRODUCTION

# What is the aim of a master's thesis?

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- It leads to the award of the master's degree.
- A total of **15 credits** are reserved for the design, preparation and writing up of the master's dissertation.
- The formal assignment of these credits can only take place at the moment when the dissertation is **completed and discussed**, and the final examination has been passed.
- **The final examination** consists in the submission and public discussion, in front of a committee, of a master's dissertation.
- The final thesis should be long approximately **100/120 pages**
- To be awarded a bachelor's or master's degree the student must score at least **66/110** on the final exam. The maximum mark is 110/110, with possible honours.
- **Avoid plagiarism:** Supervisors and/or tutors may check papers, reports and degree theses (both drafts and final versions) for plagiarism using the Compilatio.net software.

# Supervisor and co-supervisor

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The master's dissertation is an original piece of work, written by the candidate under the guidance of a supervisor (and a co-supervisor)

- Your supervisor is your guide and the most important source of help in the development of the thesis
- You will have to choose a co-supervisor in agreement with your supervisor
- More on this topic in the upcoming meeting “Step by step to graduation”

**Professors might be overwhelmed by other stuff to do**

**You won't have much time to spend with them...use it well!**

# Types of thesis\*

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## EMPIRICAL

An empirical thesis is an academic research in which certain information and data are collected from reality (e.g., organizations, communities, universities, schools) to answer certain research questions.

Different methods (qualitative vs quantitative) to collect data are possible.

The method you will choose depend on the questions you want to answer!

## LITERATURE REVIEW

A literature review is an academic research in which certain information and data are collected from scientific sources (e.g., journals) to answer specific research questions.

A literature review has to be **systematic** meaning that it has to adopt a rigorous method to retrieve the sources (e.g., PRISMA).

*Please note:*

*\* The type of thesis you will develop should be agreed with your supervisor. It is ok to have some initial ideas!*

# Types of thesis: the process

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## EMPIRICAL

- Choose a topic of interest
- Search for the relevant literature on the topic
- Develop research questions
- Define a method to answer your RQs (e.g. quantitative)
- Develop the instrument to collect data (e.g., survey)
- Collect data
- Analyse the data to answer your RQs

## LITERATURE REVIEW

- Choose a topic of interest
- Skim read relevant and recent (<5 year) literature on the topic
- Develop relevant research questions
- Systematically search for the relevant literature (with a clear method, such as PRISMA)
- Synthesize and analyse the retrieved literature to answer your research questions
- Example of literature review paper: [link](#)



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# FROM TOPIC DEFINITION TO RESEARCH QUESTIONS

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# Topic vs research question

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Your topic is the **general**, overarching area that you're interested in, while the research question is a **focused**, smaller sliver of information you're questioning within that topic.

*Example of topic: cyberloafing and productivity*

# Narrowing down process

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Process	Example
Choose a topic	Recruiting
Narrow your topic using «and» or «on»	Recruiting and social media
Narrow your topic by addressing time, place, a particular group or individuals, a school of thought, or a point of view	Recruiting and social media, use and perception of HR managers in the Italian context
Ask questions you will be interested in researching	Do HR managers rely on social media when it comes to recruiting new candidates in Italian companies?  What are HR managers' perceptions about the use of social media in the recruiting process of new candidates?

# Narrowing down process: example

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## ***Mobbing***

**What things would you need to find out in order to write about this topic?**

**What people** (general employees, blue collars, white collars, managers?), **places** (*in which context? Sector? Industry? Country?*) **and related concepts** (*consequences (e.g., turnover intention), policies, statistics, such as number of people who experienced it?*) **are connected to this idea?**

Some background readings: **find relevant recent literature (published within 5-year time span) about mobbing**

**Freeform brainstorm - look at aspects of the topic from above that appeal to you** - put into the form of questions: *Mobbing and turnover intention? Is there a connection between those who suffers from mobbing and those who engage in mobbing? What policies have been put in place in organizations (or a specific context) to combat mobbing? What is the relationship, if any, between gender and/or ethnic status and mobbing?*

# Techniques to come up with a research question

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## **Option 1**

Literature review- Discussion section - Look for Research Avenues

An example:

## **Option 2**

You can assess if the existing literature is relevant and suitable within another specific context, such as a certain country, or a certain industry, or a certain socio-demographic group.

## **Option 3**

Brainstorming and mind-mapping the area.

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Please take 5 minutes of time to think  
about a topic of your interest and try to  
define a set of three Research  
Questions



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# FROM RESEARCH QUESTIONS TO KEYWORDS

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Once you have defined the questions you want to answer with your work, you need to map the **relevant literature** to have a deeper understanding of what has been already said about the topic of your interest

**Tip:** start by searching for **the most recent literature review** on the topic (if present) it will help you to have an overview of the main findings and sources

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RQ: Does the use of social media by HR managers in the recruiting process impact their final choice?



How to search for relevant literature?

# Define keywords

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Once defined the question, you need to break it down into searchable keywords and phrases

- Start from the words that pop out right away, e.g., “*social media*”; “*recruiting*”
- Think about what synonyms, acronyms, abbreviation and related terms might also be useful as search terms. e.g., “*Multinational companies*” with “*MNCs*”; “*HRM*” or “*HR*” with human resources; “*organizational behaviour*” with “*OB*”
- Rule of thumb: from **2 up to 4 keywords** for search

# Boolean operators

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Operator	Example	Result
<b>AND</b>	business AND ethics cooking AND Spain	Retrieves records that contain ALL of the search terms.
<b>OR</b>	hotels OR motels CEO OR president theater OR theatre	Retrieves records that contain ANY of the search terms, but does not necessarily include all of them.
<b>NOT</b>	java NOT coffee Clinton NOT (William OR Bill)	Excludes records containing the second search term.

Use **AND** to:

narrow your results



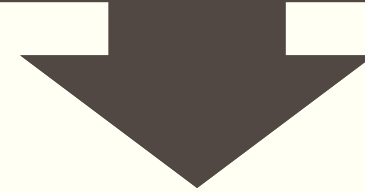
tell the database that **ALL** search terms must be present in the resulting records



Be aware: In many, but not all, databases, the **AND** is implied!

Use OR to:

connect two or more similar  
concepts (synonyms)



broaden your results, telling the  
database that **ANY** of your search  
terms can be present in the resulting  
records

# Use NOT to:



exclude words from  
your search



narrow your search, telling  
the database to ignore  
concepts that may be  
implied by your search  
terms



example: performance  
NOT assessment

# Modifiers

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Modifier	Example
<b>Asteriks</b> _____*	admin* will return: administrator, administration, administer, administered, etc.
<b>Quotation marks</b> “_____”	“Director of Tax” will only return “Director of Tax.” If you searched for Director of Tax without the quotation marks, on some search engines, it will split up the words Director and Tax and highlight them as relevant matches even when not mentioned as an exact phrase.
<b>Parentheses</b> (_____)	As a best practice, use parentheses to encapsulate OR statements for the search engines to execute them properly. e.g. (ethics OR moral OR value) AND (develop OR social OR change).

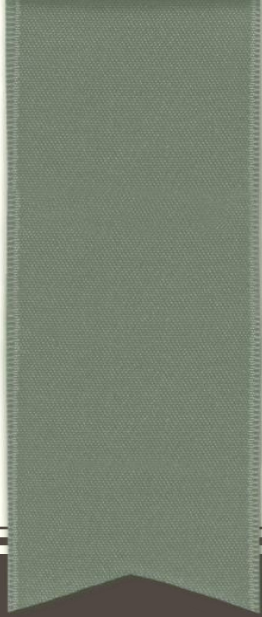
# What keywords can you think of?

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RQ 1: What is the impact of cyberloafing on employees' productivity?

RQ2: What is the impact of work from home during COVID-19 on employees' well-being?



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# FROM KEYWORDS TO BIBLIOGRAPHIC RESEARCH

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# Types of sources

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- Articles from scientific journals
- Textbooks and handbooks
- Reviews
- Dissertations and Thesis
- Conference Papers and Research Reports
- Monographs
- Government Papers (e.g. the Eurobarometer issued by the European Commission)
- Data Archives (<https://CESSDA.net/>)
- Web Sites: be careful in using the information gained from the internet (e.g. Wikipedia), it might not be accurate and verified!

# How to evaluate the quality of the sources?

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## **Currency**

(the timeliness of the information)

- When was the information published or posted?
- Has the information been revised or updated?
- Is the information current or out-of-date for your topic?
- Are the links functional?

## **Relevance**

(the importance of the information for your needs)

- Does the information relate to your topic or answer your question?
- Does it provide a superficial treatment or a detailed analysis?
- Who is the intended audience?
- Is the information at an appropriate level?

## **Authority**

(the source of the information)

- Who is the author/publisher/source/sponsor?
- What are their credentials or organizational affiliations?
- What are the author's qualifications to write on the topic?
- Is there contact information?

# **CRAAP test**

## **Accuracy**

(the reliability and correctness of the content)

- Where does the information come from?
- Is the information supported by evidence?
- Has the information been reviewed or refereed?
- Can you verify any of the information?
- Are there spelling, grammar, or other typographical errors?

## **Purpose**

(the reason the information exists)

- Is the purpose stated?
- Is the subject approached from an objective standpoint?
- Are there political, ideological, cultural, religious, institutional, or personal biases?

# Examples of bibliographic databases

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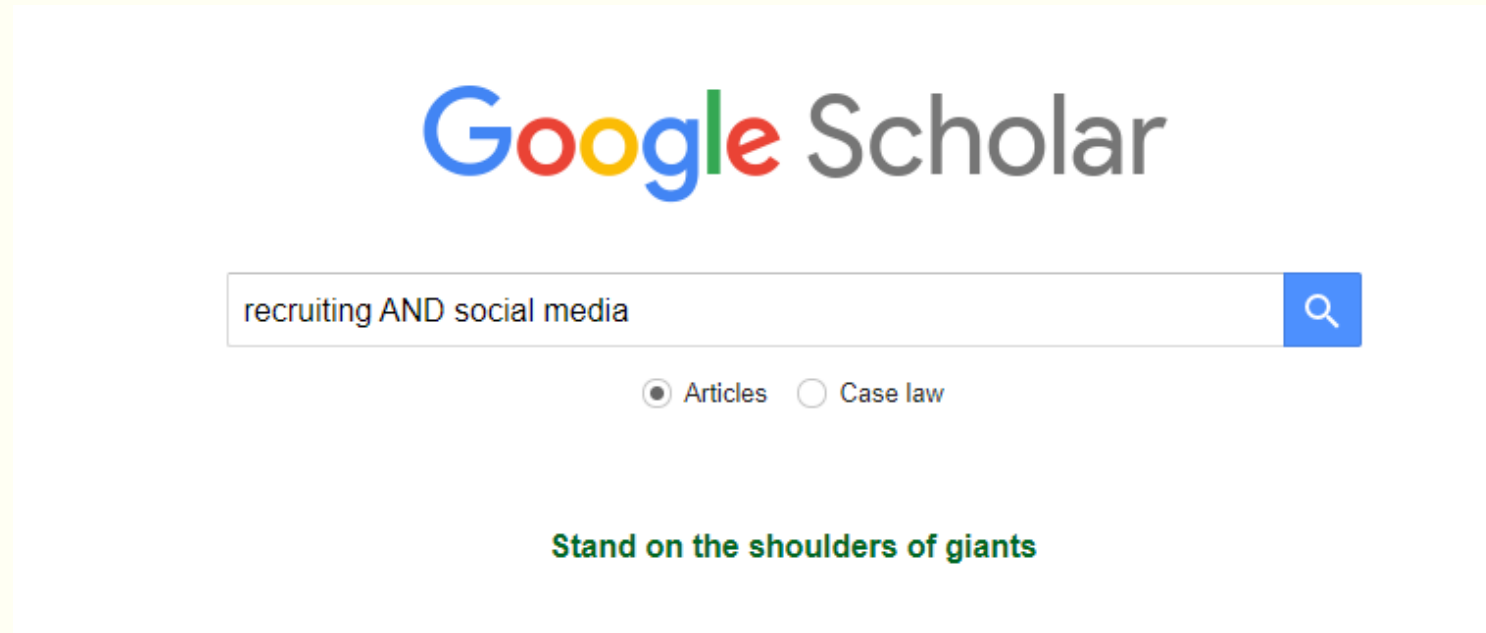
- Google Scholar: free access; a good starting point for identifying journal, papers, authors connected with subjects of interest
- Scopus: full access by institutional subscription only
- Web of Science: institutional subscription only
- ScienceDirect: free access
- Directory of Open Access Journals (DOAJ): free access

*How to access the databases or articles directly?*

Sign in MINERVA using your university credentials

# Google Scholar: a quick exercise

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***How many articles have you found? Write in the chat***

# Google Scholar: a quick exercise

The screenshot shows the Google Scholar interface. At the top left is the Google Scholar logo. A search bar contains the text "recruiting AND social media" with a magnifying glass icon to its right. Below the search bar, the text "Articles" is followed by "About 1,290,000 results (0.09 sec)", which is circled in red. On the left side, there are filters for "Any time" (with sub-options: Since 2023, Since 2022, Since 2019, Custom range...), "Sort by relevance" (with sub-option: Sort by date), "Any type" (with sub-option: Review articles), and checkboxes for "include patents" (unchecked) and "include citations" (checked). At the bottom left is a "Create alert" button. The main content area displays three search results. The first result is "[PDF] Recruitment strategies: a power of e-recruiting and social media" by N Sharma, published in the International Journal Of Core Engineering and ... in 2014, available on academia.edu. The second result is "Best practices for using social media as a recruitment strategy" by SA Madia, published in Strategic HR Review in 2011, available on emerald.com. The third result is "College recruiting using social media: how to increase applicant reach and reduce recruiting costs" by S Wazed and ESW Ng, published in Strategic HR Review in 2015, available on emerald.com. Each result includes a brief abstract, citation information, and options to save, cite, or view related articles.

Google Scholar

recruiting AND social media

Articles About 1,290,000 results (0.09 sec)

Any time  
Since 2023  
Since 2022  
Since 2019  
Custom range...

Sort by relevance  
Sort by date

Any type  
Review articles

include patents  
 include citations

Create alert

[PDF] Recruitment strategies: a power of e-recruiting and social media  
N Sharma - International Journal Of Core Engineering and ..., 2014 - academia.edu  
... Now a day's recruitment through social media is also in. Top companies refer ... the benefits of using social media in recruitment the following questions are asked by recruiters. ...  
☆ Save Cite Cited by 36 Related articles All 2 versions

Best practices for using social media as a recruitment strategy  
SA Madia - Strategic HR Review, 2011 - emerald.com  
... the current state of social media for recruitment and its relation ... a social media recruitment strategy plan, appropriate resources and the importance of a content strategy and social media ...  
☆ Save Cite Cited by 181 Related articles All 2 versions

College recruiting using social media: how to increase applicant reach and reduce recruiting costs  
S Wazed, ESW Ng - Strategic HR Review, 2015 - emerald.com  
... The purpose of this paper is to offer an alternative approach to traditional campus recruiting, using the social media. Specifically, we propose a three-step strategy using Facebook to ...  
☆ Save Cite Cited by 41 Related articles All 4 versions

[PDF] academia.edu

[PDF] researchgate.net

# Searching criteria: how to refine the search results?

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- **Keywords:** exact phrase, Boolean operators
- **Time period:** you can decide to focus on a specific time period of the publication (publication date - no more than 5 years ago).
- **Type of source:** papers in journals, books, conference articles, PhD or master thesis
- **Journal** in which the article has been published
- **Author**
- **Subject:** field of study (e.g., social psychology)

# Advanced search: from >1 mln to 16,6k papers

The screenshot displays a search interface with a search bar containing the query "recruiting AND social media". Below the search bar, a modal window titled "Advanced search" is open, showing the following configuration:

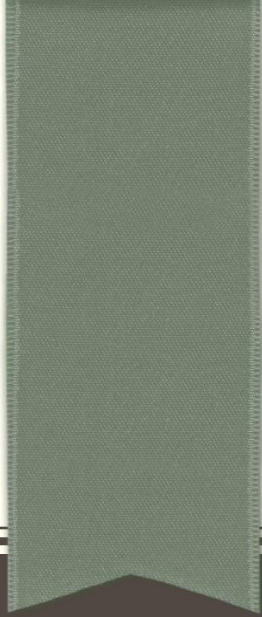
- Find articles**
  - with **all of the words**: recruiting AND social media
  - with the **exact phrase**: social media
  - with **at least one of the words**: recruiting
  - without the words**: (empty)
- where my words occur**
  - anywhere in the article
  - in the title of the article
- Return articles authored by**: (empty)  
e.g., "PJ Hayes" or McCarthy
- Return articles published in**: (empty)  
e.g., J Biol Chem or Nature
- Return articles dated between**: 2017 — 2022  
e.g., 1996

# Practical session

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## **Think about your topic and your research questions**

- What database would you use to do the bibliographic research?
- Open the database you have chosen and insert the search string you have created before. How many results have you found?
- Try to refine the search using the Advance Setting. What search criteria could you use to refine your research?
- What is the final number of papers you have?



# WRITING THE THESIS

# Thesis structure

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- Title
- Table of Contents
- Acknowledgements
- Abstract
- Introduction
- Literature Review /Background
- Methodology /Methods
- Findings and Analysis
- Conclusions and Recommendations
- References
- Appendices

# How to create an Table of contents?

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Table of Contents	
List of Tables	ix
List of Figures	x
<b>1 Introduction</b>	<b>1</b>
1.1 The Demand for Formation Flight-Capable UAS . . . . .	1
1.2 Types of Formation Flight . . . . .	3
1.2.1 Control Approaches . . . . .	3
1.2.2 Formation Strategies . . . . .	4
1.3 Advantages of Vision-Based Localization . . . . .	6
1.4 Related Work . . . . .	7
1.4.1 UAV Formation Flight Work at Cal Poly . . . . .	8
1.4.2 Camera Based Localization for Autonomous UAV Formation Flight . . . . .	9
1.5 Objective of Thesis . . . . .	11
1.6 Organization of Thesis . . . . .	13
<b>2 Background</b>	<b>14</b>
2.1 Reference Frames and Coordinate Transformations . . . . .	14
2.1.1 Body Frames . . . . .	14
2.1.2 Camera Frame . . . . .	15
2.1.3 Formation Frame . . . . .	16
2.1.4 General Coordinate Transformation . . . . .	17
2.2 Perspective- $n$ -Point ( $PnP$ ) Solution . . . . .	18
2.2.1 Camera Model . . . . .	18
2.2.2 $EPnP$ Algorithm Overview . . . . .	21
<b>3 Development Platform and Hardware</b>	<b>25</b>

[Watch this MS Word tutorial](#)

# How to Write an Abstract

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- An abstract is not an introduction but a complete summary of the whole thesis in a condensed form using academic terminology.
- 200-300 words maximum

## **IMRaD (Introduction, Methods, Results, and Discussion) approach to writing a thesis**

### **1. Background or Introduction:**

- What is currently known?
- Why is it important to look at this specific topic from the angle you chose?
- What has not been investigated previously?

### **2. Objectives:** What is the purpose of the study?

### **3. Methods:** How was the research done?

### **4. Results:** What did the research find?


### **5. Conclusions:** What do the results mean? What recommendations can be made? What are the implications?


# Abstract: example

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Teachers' social support and classroom management are related to secondary students' achievement, domain-specific interest, and self-concept. However, little is known about whether social support and classroom management shape secondary students' general school adjustment beyond these domain-specific outcomes. To investigate this question, we drew on data from a large longitudinal research project (N = 5,607 secondary students, N = 227 classes). We applied student and teacher ratings of social support and classroom management to investigate their perspective-specific validities for predicting student outcomes. To measure students' school adjustment, we assessed achievement as a domain-specific indicator and school satisfaction, truancy, and self-esteem as more general aspects. Multilevel confirmatory factor analyses showed that both teachers and students distinguished between social support and classroom management. Teacher and student ratings of classroom management largely converged, whereas their perceptions of social support were not statistically significantly associated with one another. In multilevel structural equation modeling, both perspectives uniquely predicted students' school adjustment: Student-rated social support was linked to all outcomes at the student level and to school satisfaction and self-esteem at the class level. Classroom management showed only weak associations with outcomes at the student level, but at the class level, student-rated classroom management was related to truancy and teacher-rated classroom management was linked to school satisfaction and student achievement. These findings highlight the important role of teachers in students' general school adjustment and show the benefit of considering different perspectives and levels of analyses.

 Establishing the context

 What is not known, what is the purpose

 Describing methodology

 Presenting the results

 Discussing the findings

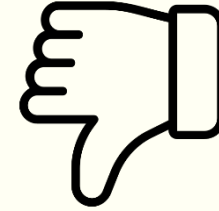
# Abstract Do's and Don'ts

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**DO**

- Keep it concise and to the point.
- Show clear research gap.
- Focus on key results, conclusions and take home messages.
- Use clear, relatively simple sentences.
- Include keywords or phrases.
- Follow the structure



**DON'T**

- Use abbreviations, acronyms, or contractions.
- Include citations or references.
- Use idiomatic/rhetorical language.
- Use complex sentences.
- Exceed the word limit.
- Repeat statements.

# Introduction

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- Sufficient background information allowing the reader to understand the topic and the context.
- Problem statement: what are the research gaps?
- Research questions
- Significance of your research: what are the contributions to the literature?
- Outline the structure of your thesis.

# Literature review

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- Demonstrate your knowledge of the past research
- Demonstrate the gap
- Literature review is synthesizing what everyone has said in relation to your research. So your writing needs to be **analytical not just descriptive**
- The order and the structure of the literature review section should be coherent with the steps of your analytical strategy

The literature review section should **answer the following questions:**

- *What has been previously done and what is the current status of the topic?*
- *Who studied the topic (well known scholars)?*
- *What are the follow up recommendations of previous studies?*
- *What is the aim of your research? Do you intend to support, refute, clarify and add to the body of knowledge?*

# Methodology

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The methodology is an overview of your research approach. In this section you describe **how** you intend to address your research questions.

Enough detail should be included so that another researcher could replicate your study.

Methodological approach	Description	Data collection techniques
<b>Quantitative</b>	<ul style="list-style-type: none"><li>deals with numerical data and the statistical analysis of this data</li><li>typically, deductive reasoning is used (moving from the general to the specific)</li></ul>	<ul style="list-style-type: none"><li>Surveys/questionnaires</li><li>Experiments</li></ul>
<b>Qualitative</b>	<ul style="list-style-type: none"><li>deals with qualities of phenomena that cannot be quantified</li><li>typically, inductive reasoning is used (moving from the specific to the general)</li></ul>	<ul style="list-style-type: none"><li>Interviews</li><li>Focus groups</li><li>Observations</li></ul>
<b>Mixed method</b>	combines quantitative and qualitative approaches by including both kinds of data in a single study.	

# How to choose an approach

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*What are your research questions:*

- Aim to describe the characteristics of something?
- Explore an under-researched topic?
- Establish a causal relationship?

*What type of data do you need to answer your research questions:*

- Quantitative data, qualitative data, or a mix of both?
- Primary data collected yourself, or secondary data collected by someone else?
- Experimental data gathered by controlling and manipulating variables, or descriptive data gathered via observations?

*When you have the data, how do you plan to analyse it?*

**REMEMBER:** This may seem a rather negative approach, but there is no point in producing a grandiose scheme that requires a year and a team of researchers if you are on your own. **Don't stress out! Don't get wrapped up in methodology!**

# Exercise

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Research question

***How satisfied are employees with their jobs?***

Which approach can answer this question?

And why?

# Potential answers

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## **Qualitative**

- Interviews with 15 employees and ask them open-ended questions
- Transcribe the interviews and try to find patterns

## **Quantitative**

- Survey, let's say, 300 employees, or use the existing dataset
- With the collected data run a statistical analysis

## **Mixed method approach**

- First conduct interviews with the employees, through which you get new insights and come up with hypothesis that you want to test.
- Then test whether this applies to a larger scale.

# Results and Conclusions

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## **Results**

- Describe and interpret your empirical findings in detail
- Link the analysis with the theory or more general arguments you provided earlier

## **Conclusions**

- Summarize what you have done and what you have found with respect to your research questions. Connect to the theory.
- What are the implications of your research, what are the limitations and what has to be left to future research.

# References

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**The American Psychological Association (APA)** referencing style is a most commonly used reference style across a variety of disciplines.

Anyway, it is always better to ask your supervisor the reference style he/she prefers.

## **APA In-Text Citations:**

- According to Jones (1998), "students often had difficulty using APA style, especially when it was their first time" (p. 199).
- According to Jones (1998), APA style is a difficult citation format for first-time learners.
- APA style is a difficult citation format for first-time learners (Jones, 1998).

## **APA references:**

Gruman, J.A., & Saks, A. M. (2011). Performance management and employee engagement. *Human resource management review*, 21 (2),123-136.

For more examples of references see the *THESIS TEMPALTE* available [here](#)

# Tips for reference management

The image shows a Google Scholar search result for the paper "Using social media as a research recruitment tool: ethical issues and recommendations" by Gelinas, L., Pierce, R., Winkler, S., Cohen, I. G., Lynch, H. F., & Bierer, B. E. (2017). The citation dialog box is open, showing various citation styles. The APA style is circled in red.

**APA** Gelinas, L., Pierce, R., Winkler, S., Cohen, I. G., Lynch, H. F., & Bierer, B. E. (2017). Using social media as a research recruitment tool: ethical issues and recommendations. *The American Journal of Bioethics*, 17(3), 3-14.

Other citation styles shown include MLA, Chicago, Harvard, and Vancouver. The dialog box also includes options for BibTeX, EndNote, RefMan, and RefWorks.

# Citation: quick exercise

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**Download from Google Scholar the APA style reference for this paper:**

*Determinants of job satisfaction and its impact on employee performance and turnover intentions (2014) by R. Balouch, F. Hassan*

**Was it easy? Any difficulties?**

# Reference management time savers

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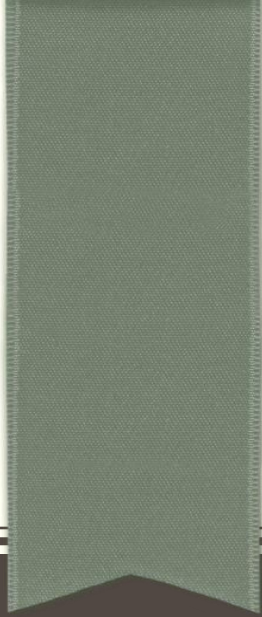
Mendeley



Endnote



Zotero



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# QUESTIONS AND ANSWERS

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