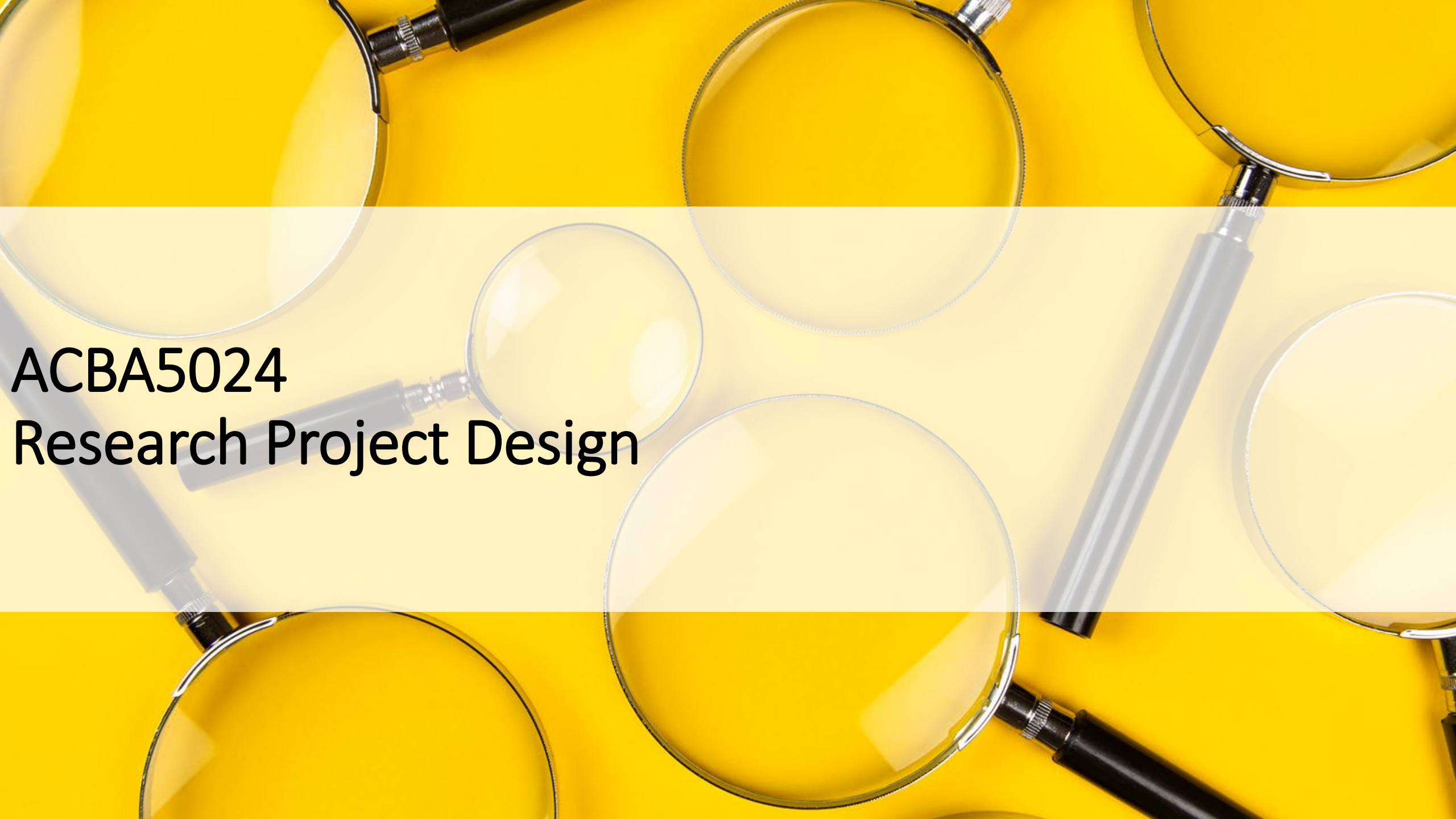


The background of the slide features a top-down view of several magnifying glasses and pens scattered on a bright yellow surface. The magnifying glasses have silver-colored frames and clear lenses, some of which are partially visible. The pens are primarily grey and black, with some showing their barrels and others their tips. The overall composition suggests a theme of investigation, research, or design.

# ACBA5024 Research Project Design

# Aim

To develop an understanding of the importance of research within the construction industry.

# Learning Outcomes

Upon the successful completion of this module, you should be able to:

- recognise the use and pros and cons of different research methodologies;

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Upon the successful completion of this module, you should be able to:

- recognise the use and pros and cons of different research methodologies;
- demonstrate understanding of ethical responsibilities within research;
- produce a research proposal and a pilot study piece of research.

# What is research?

# What is research?

Research is the systematic investigation and study of materials, sources, and phenomena to establish facts, answer questions, or develop new knowledge.

# What is research?

It involves careful planning, data collection, analysis, and interpretation to increase understanding or solve specific problems.

# How the activity works

For each scenario, decide whether it is:

-  Research
-  Not research
-  It depends

Be ready to justify your decision.

---

A student is asked to investigate concrete strength.

They find several websites explaining that concrete strength is affected by the water-cement ratio. They read the information and write a two-page summary explaining why increasing the water-cement ratio generally reduces concrete strength.

---

## 01

# Concrete strength information

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**NOT RESEARCH**

A construction manager is planning a new three-storey office building.

They investigate traditional masonry, steel frame and modular construction. They look at previous projects, manufacturers' information, construction times and costs before recommending a method to the client.

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 IT DEPENDS

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A construction company has completed 50 projects over the last five years.

A student investigates whether delays are associated with factors such as project size, variations, weather, labour availability and material delays. They analyse the project records to identify patterns.

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**RESEARCH**

A quantity surveying student is asked to price a small building project.

They compare the prices of brick, blockwork, timber cladding and concrete panels, then choose the cheapest option for the project.

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**NOT RESEARCH**

A quantity surveyor notices that several projects have exceeded their original budgets.

A student collects data from 30 completed projects, including original estimated cost, tender price, final cost, variations, inflation, design changes, ground conditions and project duration. They analyse the data to identify factors associated with cost overruns.

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**RESEARCH**

A lecturer asks 20 students which construction-related area interests them most: Civil Engineering, Construction Management, Quantity Surveying or Architecture.

The lecturer counts the responses and finds that Civil Engineering is the most popular.

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 IT DEPENDS

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A student wants to know whether construction sites that use daily toolbox talks have fewer reported safety incidents.

They collect information from 20 sites about toolbox-talk frequency, workforce size, project type, project duration and reported incidents. They analyse whether there is an association between toolbox talks and incidents.

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A student is preparing a dissertation about sustainable construction.

They find 25 journal articles, read them and produce a table containing each author, year, topic and main finding. They submit the table as their literature review.

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 **NOT RESEARCH BY ITSELF**

---

A student is interested in damp problems in residential buildings.

They investigate 15 properties and record building age, construction type, presence and location of damp, ventilation provision, heating system and external defects. They analyse the data to investigate whether particular characteristics are associated with damp problems.



**RESEARCH**

# What is research not?

Just information  
gathering

Failure is  
useless

Irrelevant

Difficult

Boring

Complex

Isolated

Tedious

Only for Experts

# Why do we conduct research?

- To learn about a subject

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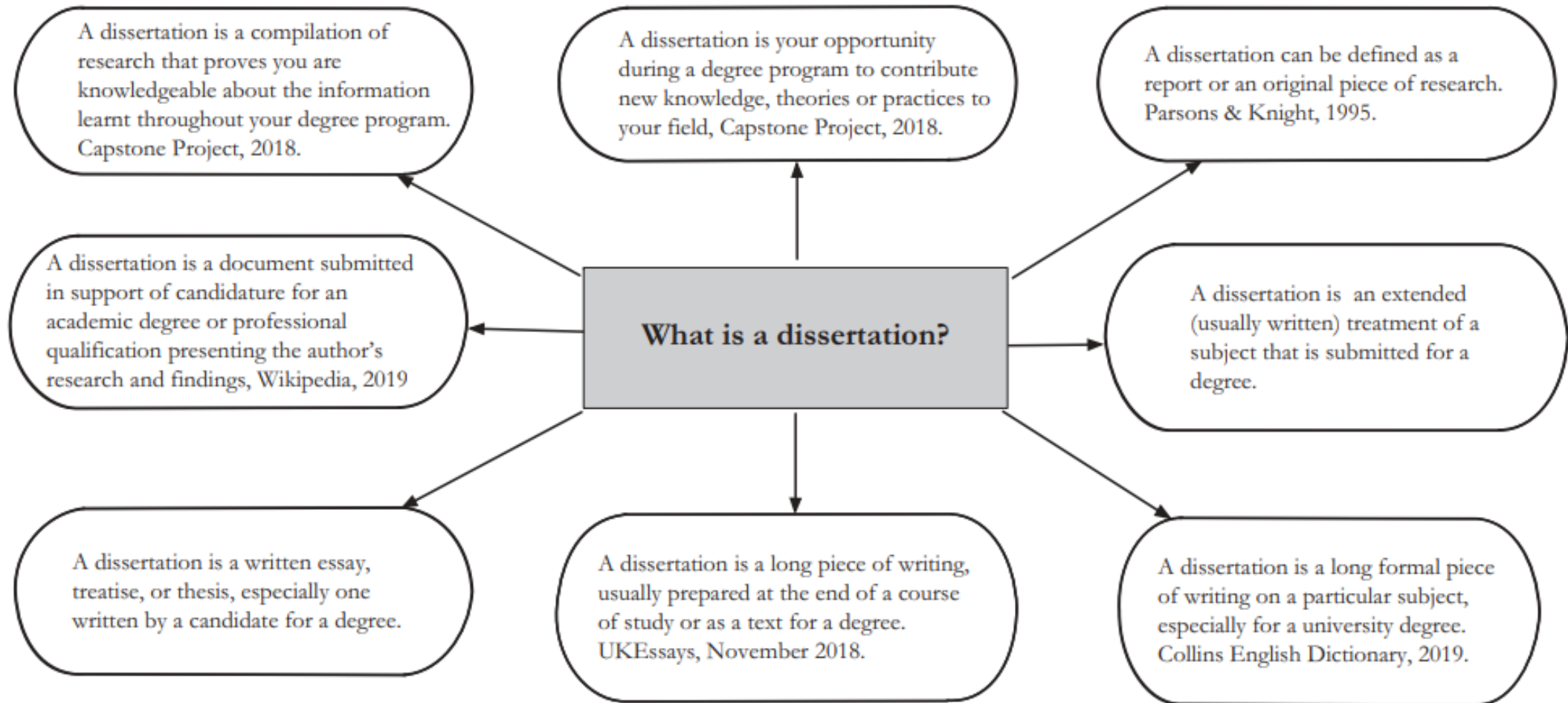
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- To test a theory or hypothesis
- To improve knowledge
- To make discoveries
- To establish facts
- To revise existing understanding
- To test opinions

# What is a dissertation?



# What is a dissertation?

Dissertations and research projects are an opportunity to focus on a particular question, and plan and undertake your own research to explore it further.

# What is a dissertation?

They are an independent piece of work. You will be working under supervision to some extent and may be collaborating with others, but ultimately you are submitting a piece of independent thought and writing.

# What is a dissertation?

They require a large investment of time, thought and energy throughout the process. As a significant body of academic work, you need to maintain effort whilst reading, researching, thinking, writing and redrafting it.

# Dissertation Myth Busting



A dissertation has to discover something nobody in the world has ever discovered.

True



13%

False



88%

FALSE



You need to know exactly what your results will be before starting your research.

True



13%

False



88%

FALSE



# A dissertation is basically a very long essay.

True



50%

False



50%

# FALSE



# You need to read hundreds of journal papers.

True



13%

False



88%

# DEPENDS



# Your research question should influence your research method.

True



100%

False



0%

# TRUE



If your experiment doesn't produce the result you expected, your dissertation has failed.

True



0%

False



100%

FALSE



Your literature review should simply describe what other researchers have said.

True



50%

False



50%

FALSE



You can change your research question after starting your research.

True



75%

False



25%

DEPENDS



# A questionnaire automatically makes something research.

True



0%

False



100%

# FALSE



You should think about how you will analyse your data before collecting it.

True



80%

False



20%

TRUE



# Your dissertation should answer a clearly defined question.

True



100%

False



0%

# TRUE



A good dissertation can produce an unexpected result.

True



100%

False



0%

TRUE

Your dissertation is NOT about being  
right.

It is about answering a question  
using evidence.

# Skills

Master Research Skills: Learn how to find, evaluate, and synthesise information from various sources.

# Skills

Enhance Critical Thinking: Develop the ability to critically analyse literature, identify gaps in research, and form original arguments.

# Skills

Methodology: Designing and applying appropriate methods to collect and analyse data.

# Skills

Improve Project Management: Manage a long-term project, break it into manageable parts, and adapt to unexpected challenges.

# Skills

Written Communication: Mastering academic writing, structuring arguments, and using references to support findings, all while improving grammar and style.

# Skills

Oral Communication: Developing presentation skills to effectively communicate complex research findings to diverse audiences.

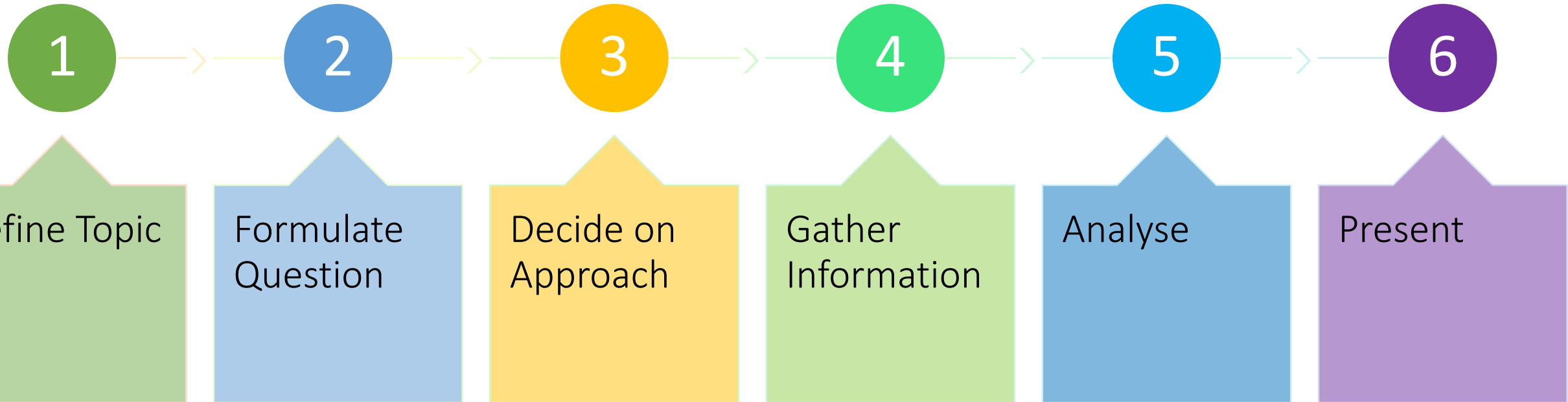
# Skills

Independent Learning: Taking initiative, working with minimal supervision, and demonstrating intellectual maturity by pursuing complex topics.

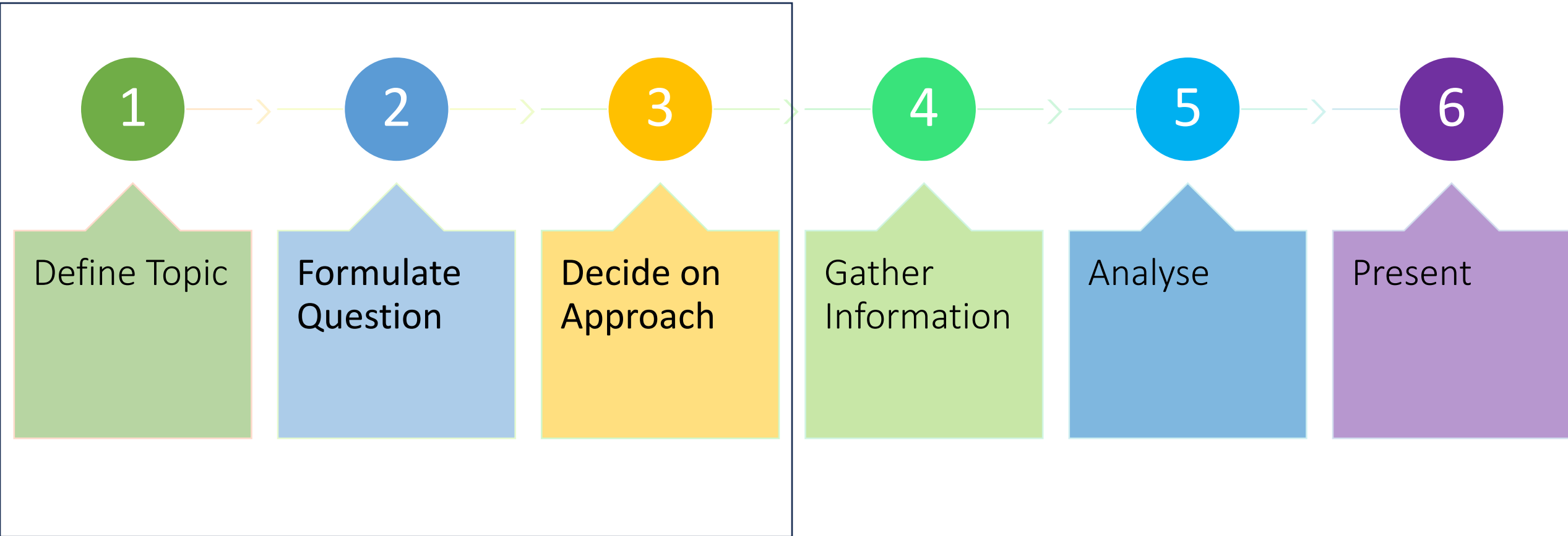
# Skills

Self-Motivation: Managing a large, self-directed project, maintaining focus, and demonstrating discipline to achieve high standards.

# Basic Process



# Basic Process



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- It outlines the general area of study within which your research falls, referring to the current state of knowledge and any recent debates on the topic.
- It also demonstrates the originality of your proposed research.