



Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

ECDE 7021

Exploring Contemporary Issues in Education 2: **Applying critical skills, contributing to knowledge: leading improvement**

Session 3: 12th May 2026

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Trawsnewid Addysg, Trawsnewid Bywydau
Transforming Education, Transforming Lives

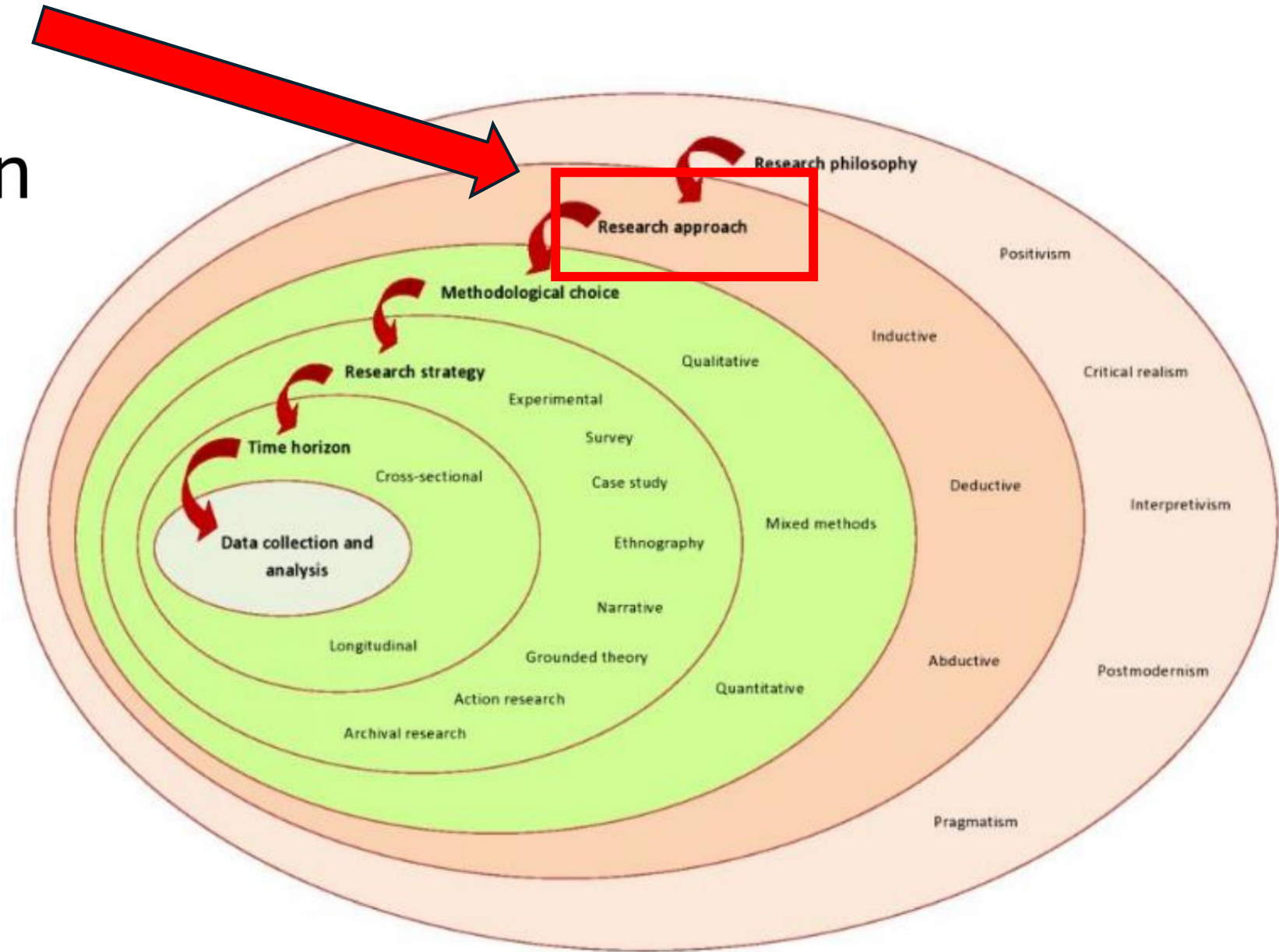
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The Research Onion

Start from the outside and peel each layer away until you reach the core.

These layers are broken up into six main areas:

- research philosophy;
- research approach;
- research methodology choices;
- research strategy;
- time horizons;
- data collection techniques and analysis.



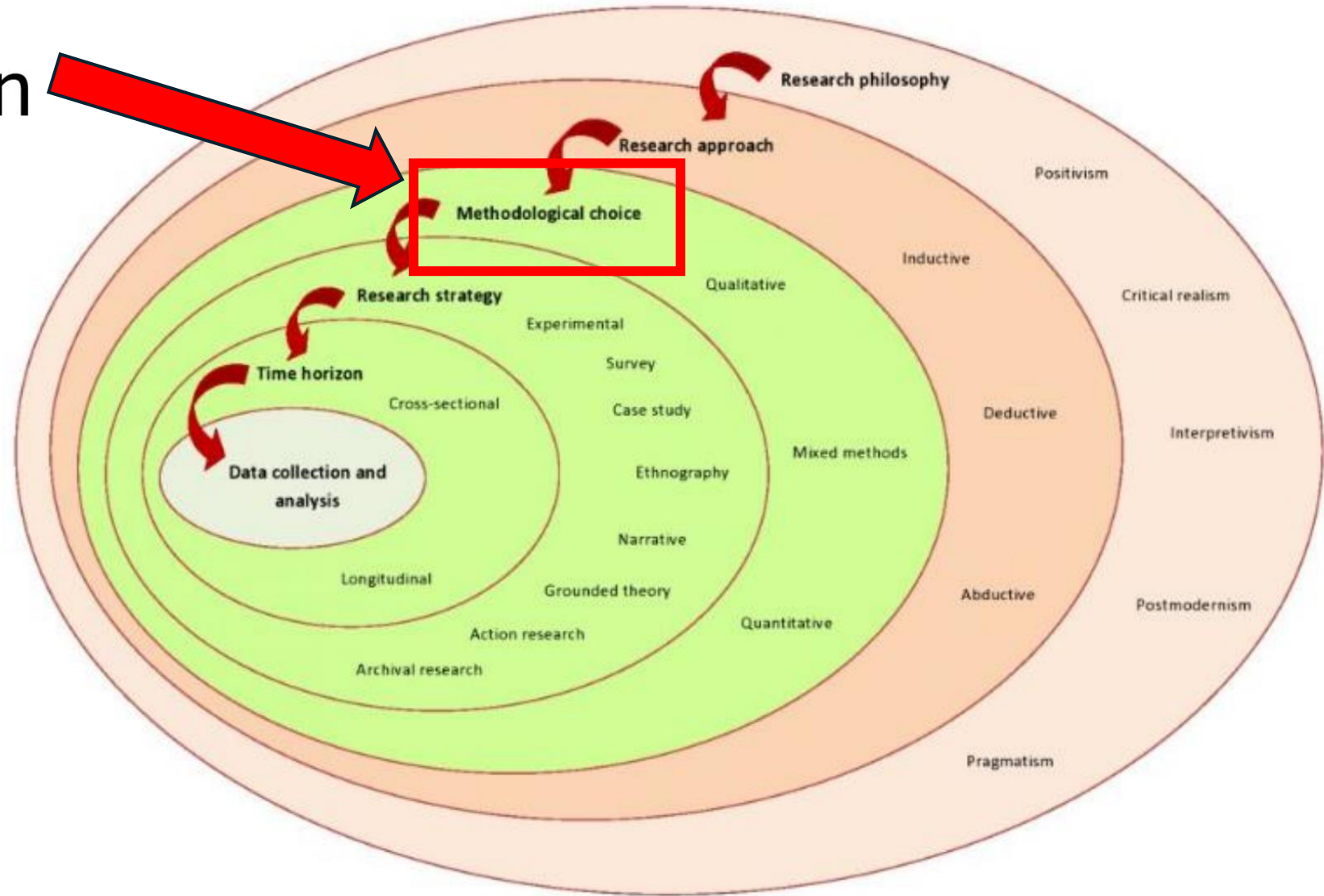
(Saunders et al., 2007)

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(Saunders et al., 2007)

Inductive Approach (exploratory and data driven)

Aspect	Inductive Approach
Definition:	Develops theories about the education system based on real-world observations and trends.
Reasoning:	Specific to general
Process:	Gather Data on Schools → Identify Patterns → Develop New Theories on Education Policy
Objective:	Discover new trends, challenges, or innovations in the education system.
Data Collection:	Starts with qualitative or quantitative data from schools, teachers, and students, then forms a theory.
Common in:	Policy research, educational reform studies, curriculum innovation.
Example:	A government agency observes that students in rural areas consistently underperform and develops a new theory about the impact of digital access on learning outcomes.

Deductive Approach (theory-driven and logical)

Aspect	Deductive Approach
Definition:	Tests existing educational policies, models, or frameworks using data-driven research.
Reasoning:	General to specific
Process:	Apply an Existing Education Theory → Form Hypothesis → Collect & Analyse Data → Confirm or Reject Hypothesis
Objective:	Test and validate existing educational policies or frameworks.
Data collection:	Uses existing educational theories and collects data to test predefined hypotheses.
Common in:	Large-scale educational assessments, standardised testing analysis, policy evaluation.
Example:	The Department of Education tests the hypothesis that reducing class sizes improves student performance, based on existing theories on personalised learning.

Abductive Approach (best guess and inference based)

Aspect	Abductive Approach
Definition	Infers the best explanation for unexpected educational trends or challenges.
Reasoning	Incomplete observations to best explanation
Process	Observe an Unusual Trend (e.g., declining literacy rates) → Identify Potential Causes → Test the Most Likely Explanation
Objective	Find the most reasonable explanation for unexpected educational issues.
Data collection:	Uses incomplete or surprising educational data to generate the most likely cause.
Common in:	Educational problem-solving, government and institutional decision-making.
Example:	A school district sees a sudden drop in student attendance and investigates multiple possible causes (e.g., transportation, socioeconomic factors, curriculum engagement) before identifying the most likely factor.

Aspect	Inductive Approach 	Deductive Approach 	Abductive Approach 
Definition	Develops theories based on observations and patterns.	Tests existing theories through hypothesis-driven research.	Develops the most plausible explanation by inferring the best possible hypothesis.
Reasoning	Specific to general	General to specific	Incomplete observations to best explanation
Process	Observation → Pattern → Hypothesis → Theory	Theory → Hypothesis → Observation → Confirmation/Rejection	Observation → Explanation (best guess) → Theory Refinement
Objective	Discover new patterns or theories.	Test existing theories and validate hypotheses.	Find the most reasonable explanation for incomplete data.
Data Collection	Starts with data collection, then builds a theory.	Begins with an existing theory, then collects data to test it.	Uses incomplete or surprising observations and seeks the most likely explanation.
Common in	Qualitative research, exploratory studies	Quantitative research, confirmatory studies	Mixed-methods, problem-solving scenarios

Task:



Develop your knowledge and understanding around research approaches and methodological approaches (qual/quant/mixed methods)



Decide on which is most appropriate for your research

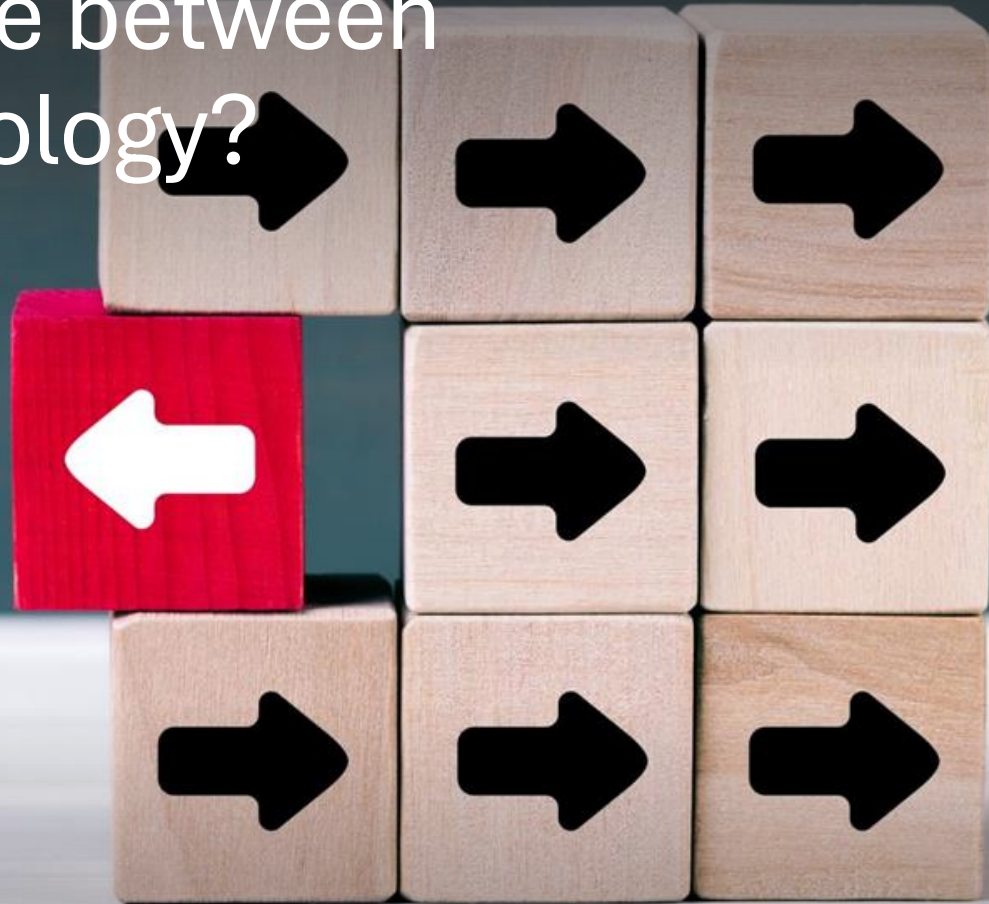


Include justification/rationale



Include relevant literature

What is the difference between
method and methodology?



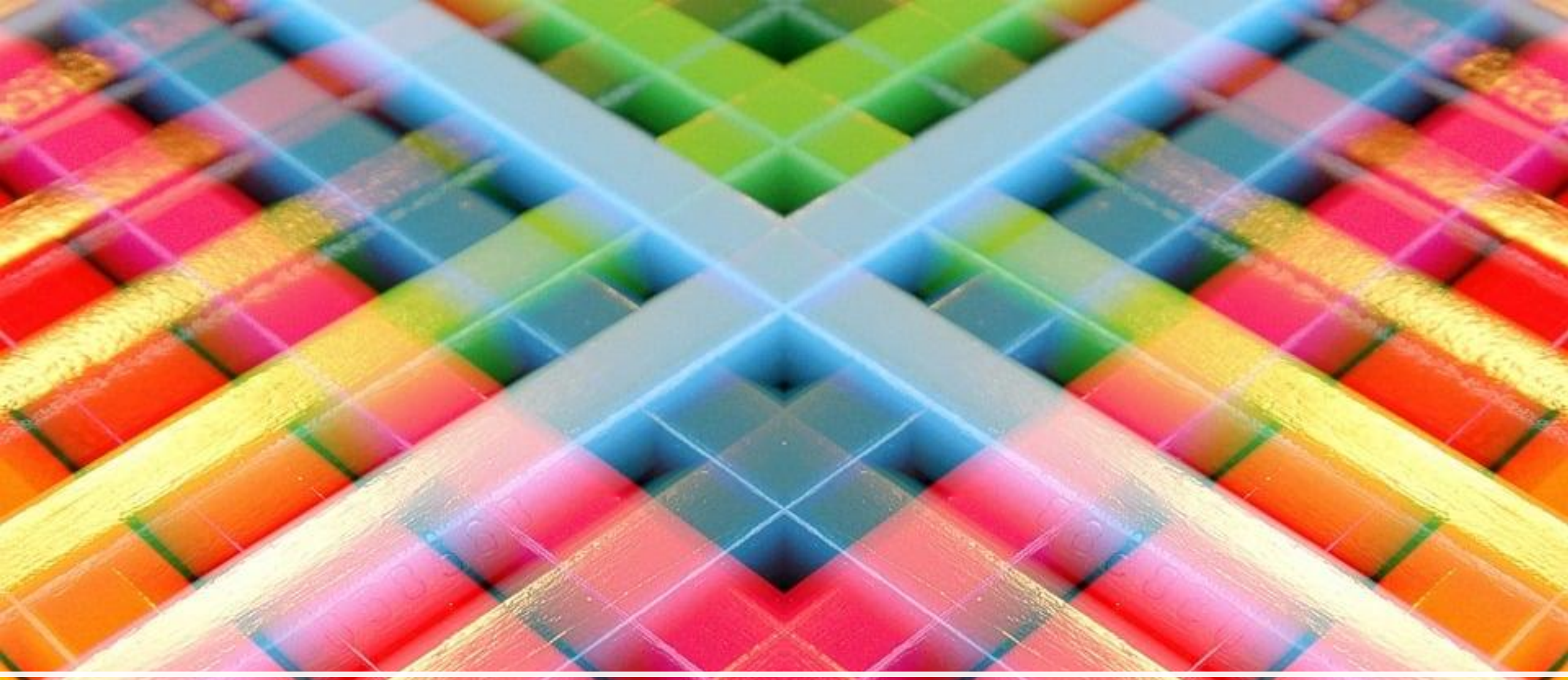
Methodology...

refers to the overarching strategy and rationale of your research project. It involves studying the methods used in your field and the theories or principles behind them in order to develop an approach that matches your objectives.

“Methodology is the philosophical framework within which the research is conducted or the foundation upon which the research is based” (Brown, 2006).

Methods...

are the specific tools and procedures you use to collect and analyse data (e.g. questionnaires, interviews).



What is the difference between research methods and research design?

What is the difference between research methods and research design?

Research methods...

- are the procedures that will be used to collect and analyse data
- focus on the most suitable ways in which data can be collected
- will depend on the research design

Research design...

- is the overall structure (or framework) of the research
- is based on the research question
- focuses on the type of study that is planned and the results that might be expected (e.g. next slide)

What is 'research design'?

1

exploratory/
explanatory
research design

Not much known already

2

descriptive
research design

Describing characteristics of
variables / a situation

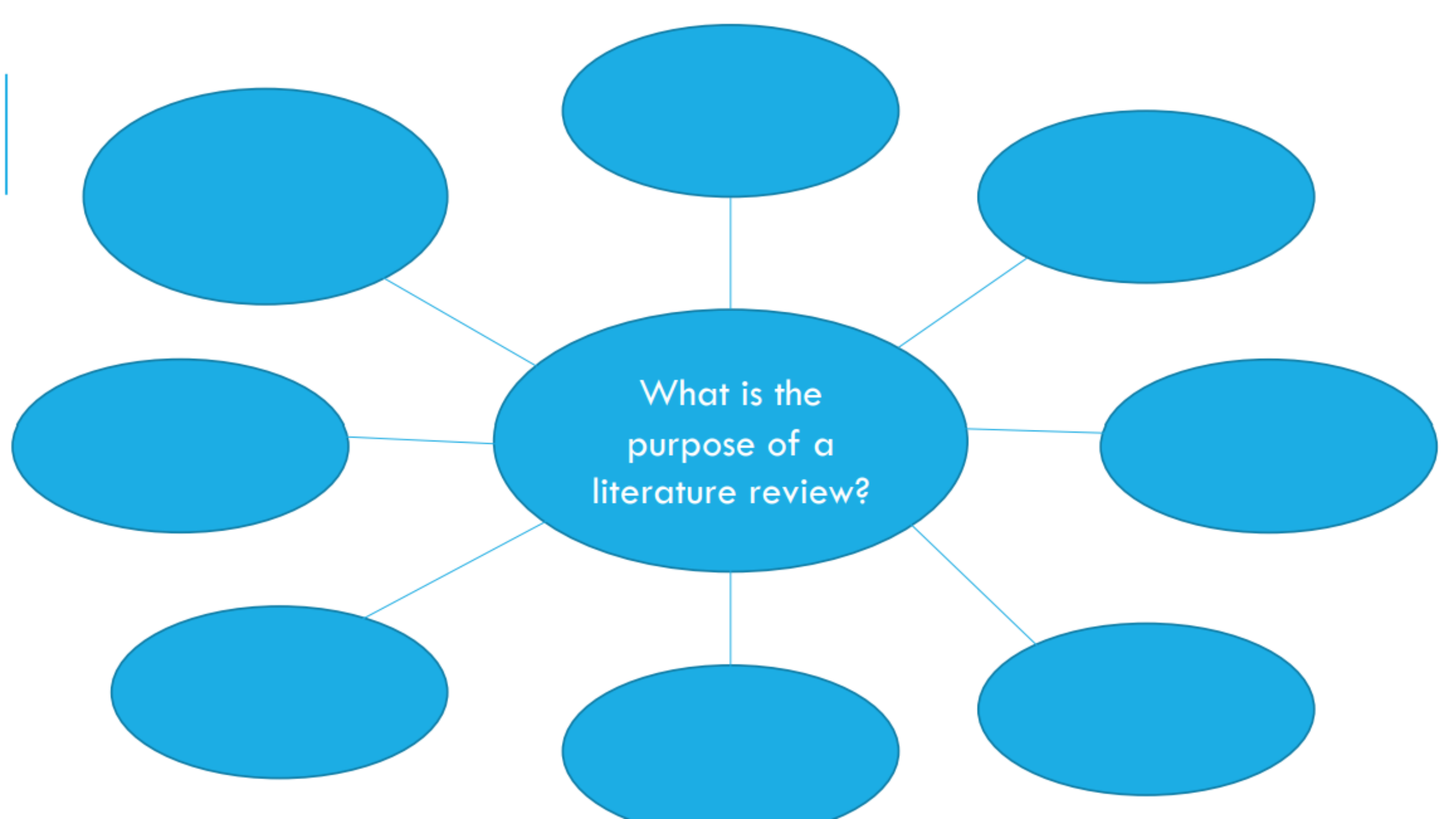
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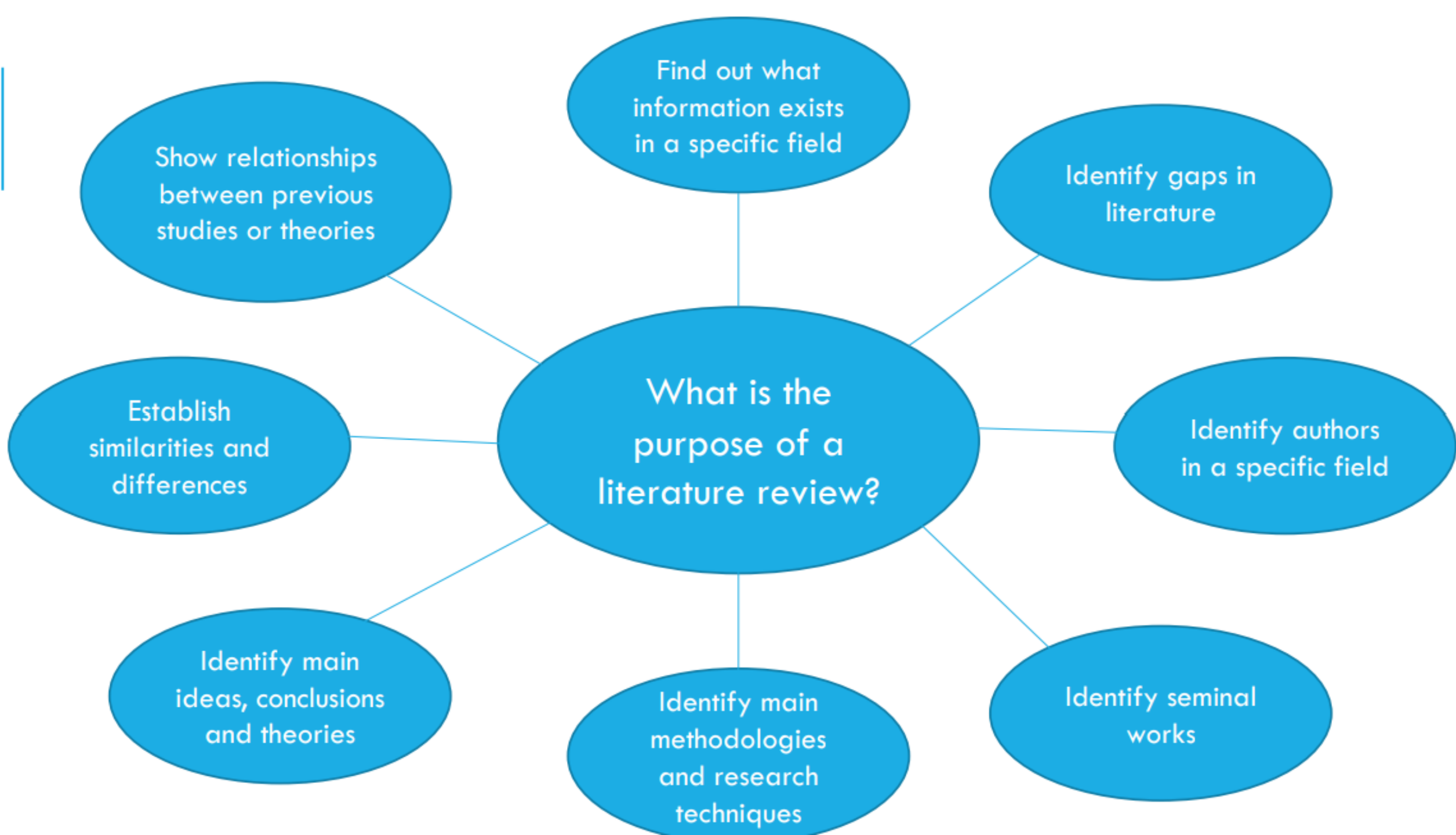
experimental
(correlational/
causal) research
design

includes a hypothesis (correlational
/ experimental / diagnostic)

The background of the image shows a stack of several books resting on a light-colored wooden surface. The books are slightly out of focus, with their spines and edges visible. A soft, warm light illuminates the scene from the upper left, creating a gentle glow. In the foreground, a white circle with a thin black border contains the text 'Writing a literature review' in a clean, black, sans-serif font.

Writing a
literature
review







LITERATURE REVIEW AT LEVEL 8 — IS IT DIFFERENT?

LEVEL 7



Summarise and understand pre-existing literature



Focuses on a narrower range of key literature – overview



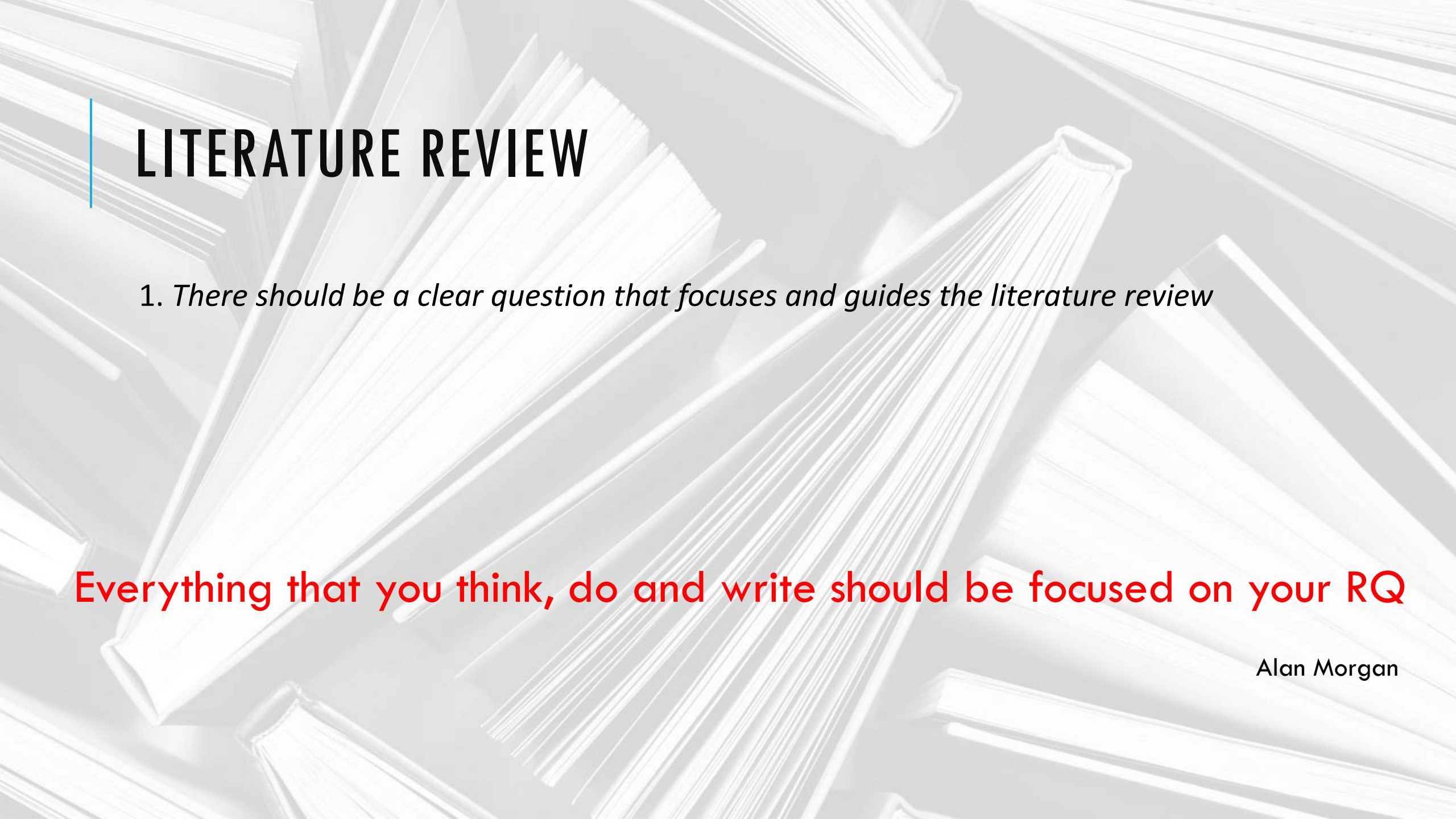
Shorter – 3,000 words



Marked by internal marker

LEVEL 8

- Identify gaps in order to locate own original research
- Broader range of literature - deeper analysis
- Long - 10,000 words? (or more)
- Examined by expert in the field – high expectations

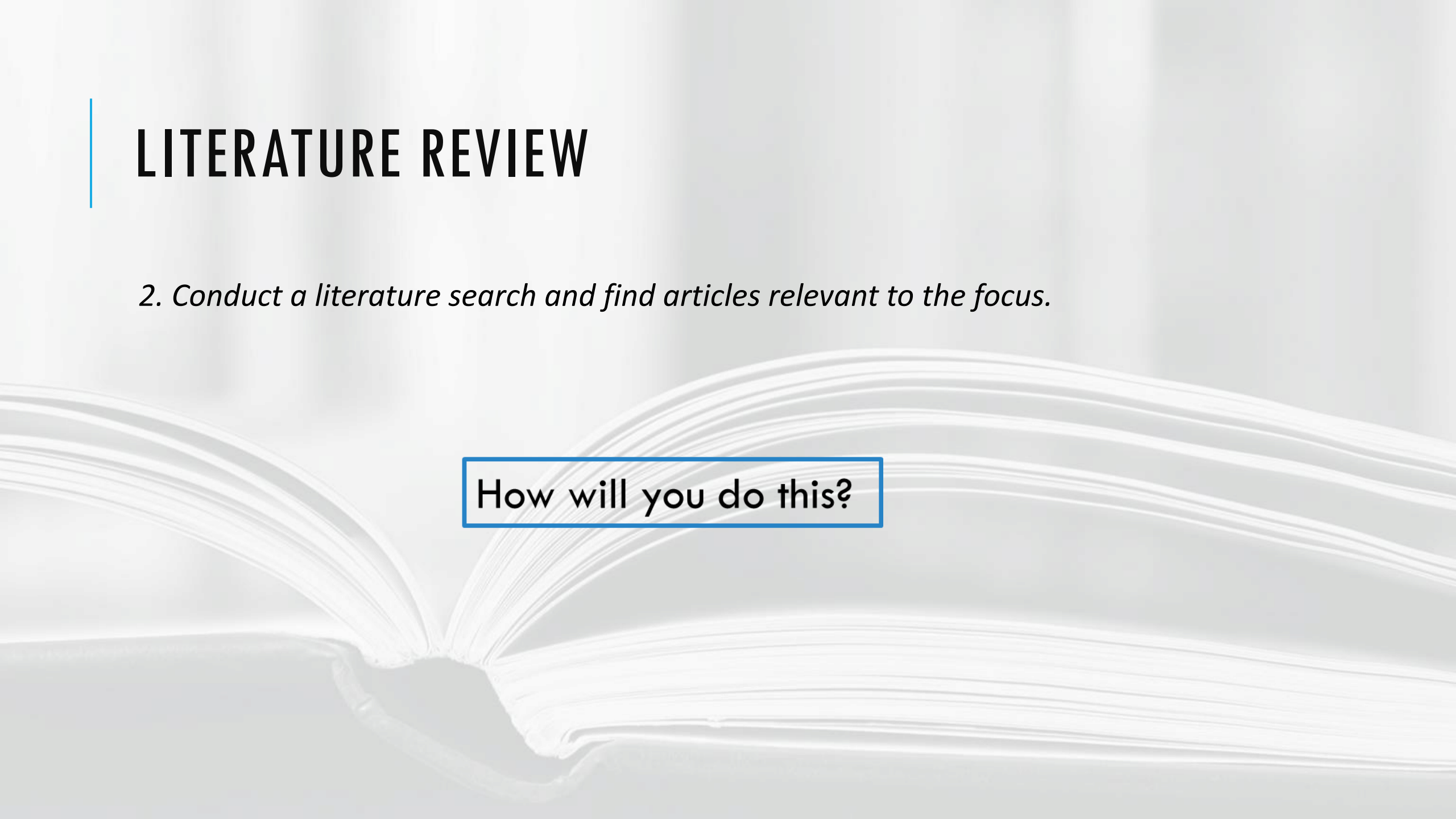


LITERATURE REVIEW

1. There should be a clear question that focuses and guides the literature review

Everything that you think, do and write should be focused on your RQ

Alan Morgan



LITERATURE REVIEW

2. Conduct a literature search and find articles relevant to the focus.

How will you do this?

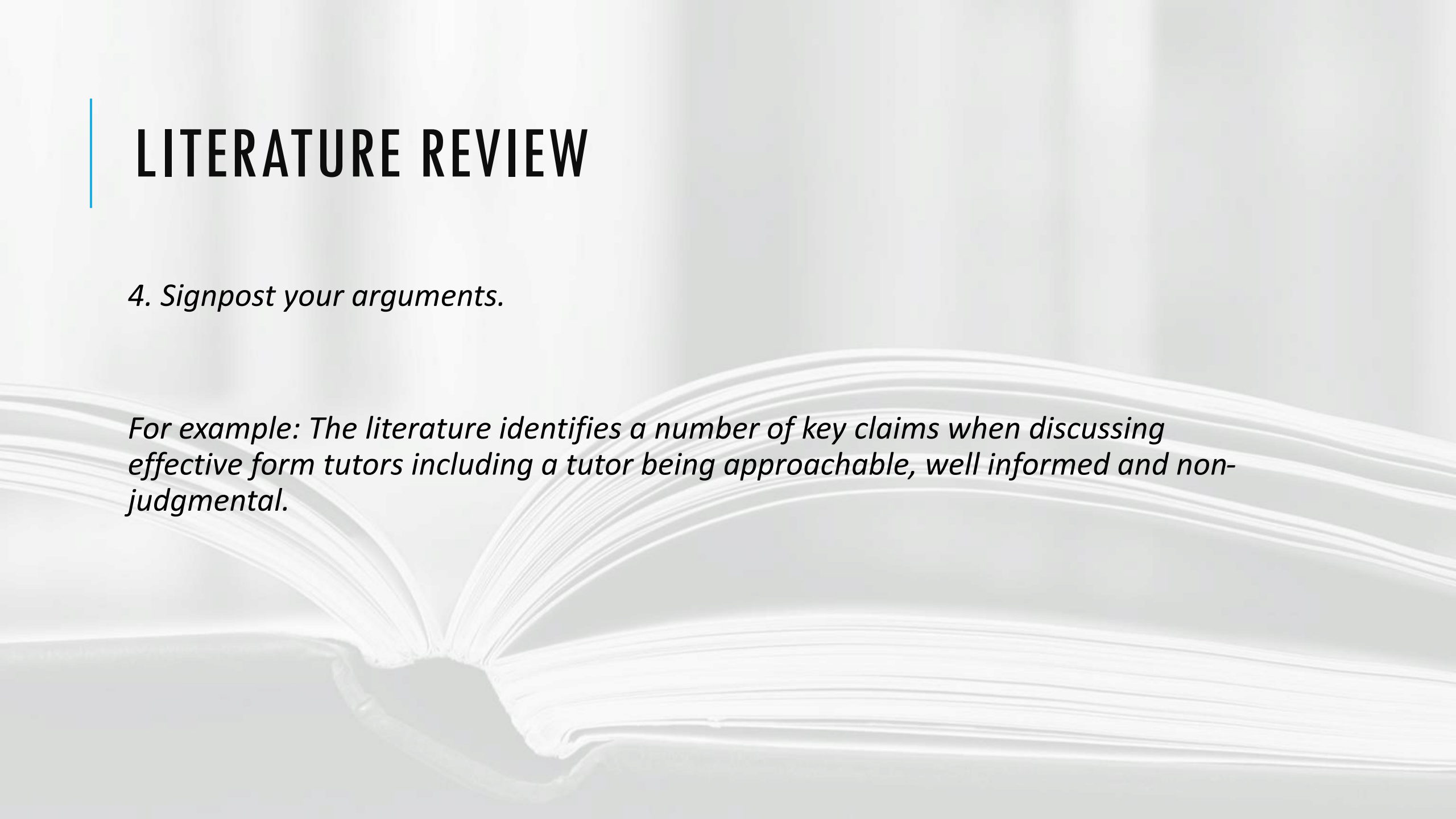
LITERATURE REVIEW

3. Read each piece of literature.

What will you write down about them?

Note:

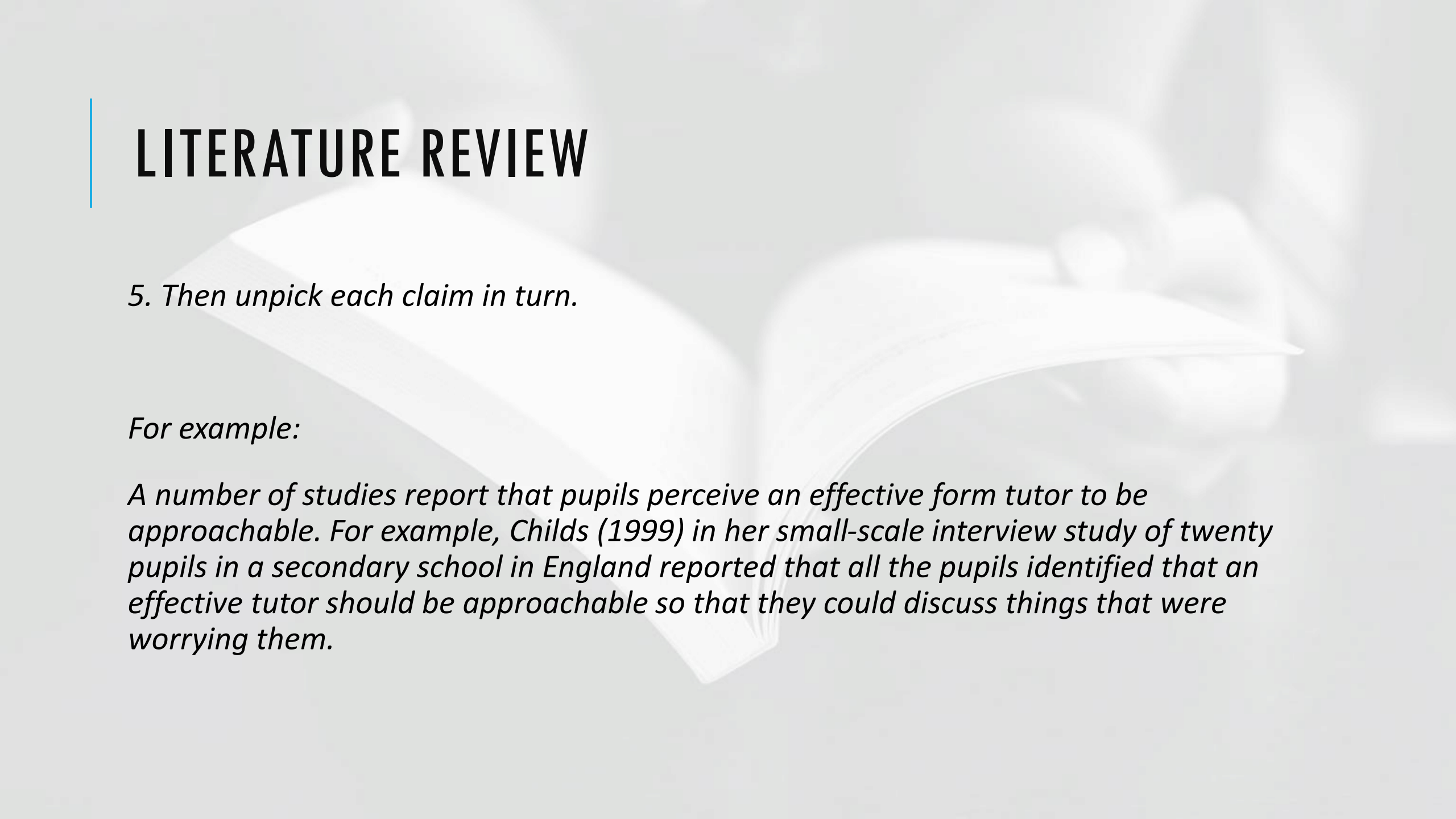
- *the type of research carried out;*
- *number of participants - possibly age, gender etc.;*
- *key themes identified.*



LITERATURE REVIEW

4. Signpost your arguments.

For example: The literature identifies a number of key claims when discussing effective form tutors including a tutor being approachable, well informed and non-judgmental.



LITERATURE REVIEW

5. Then unpick each claim in turn.

For example:

A number of studies report that pupils perceive an effective form tutor to be approachable. For example, Childs (1999) in her small-scale interview study of twenty pupils in a secondary school in England reported that all the pupils identified that an effective tutor should be approachable so that they could discuss things that were worrying them.

LITERATURE REVIEW

6. Finally bring it all together. For example:

This finding is supported by Cooper (1989)'s questionnaire study. However, Jackson's (2010) more recent small-scale focus group study of thirty KS3 pupils found that, although approachability was important, there were some differences with older pupils in that they appreciated a tutor who could also give effective career advice.

LITERATURE REVIEW

As you write, try to:

Summarise and synthesise: give an overview of the main points of each source and combine them into a coherent whole.

Analyse and interpret: don't just paraphrase other researchers – add your own interpretations (though not opinion!), discussing the significance of findings in relation to the literature as a whole.

Critically evaluate: mention the strengths and weaknesses of your sources.

Write in well-structured paragraphs: use transitions and topic sentences to draw connections, comparisons and contrasts.

CRITICALLY EVALUATE

“Do I think that everybody you talk to is lying? No, I do not. Only a moron would think that. But do I think you should approach any spokesman for a vested interest with a degree of scepticism, asking ‘why are they saying this’ and ‘is it likely to be true’? Yes of course I do.”

Jeremy Paxman

Slant?

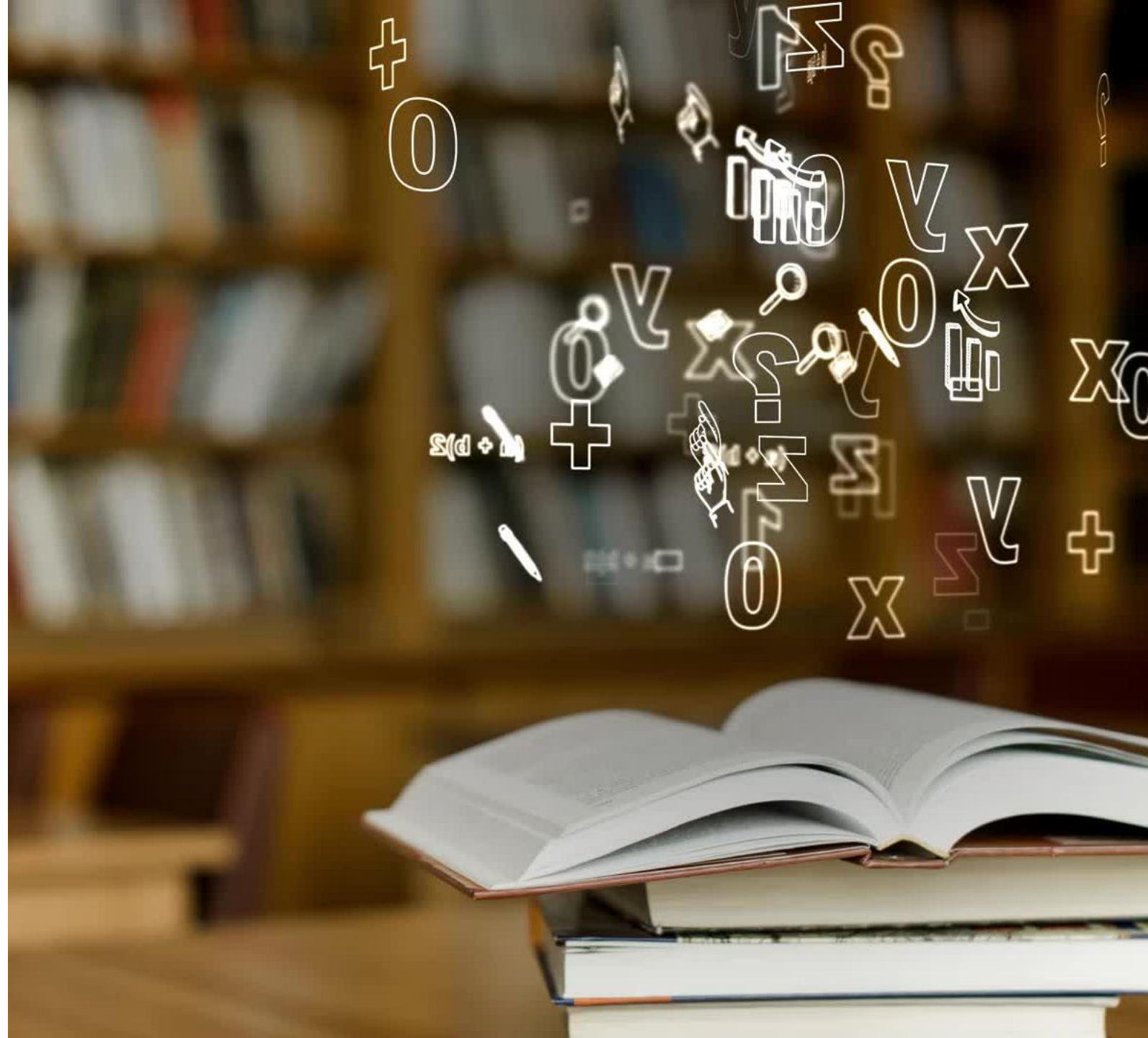
Sponsorship?

Neutral?

Bias?

7 LITERATURE REVIEW MISTAKES!

Source: gradcoach.com/literature-review-mistakes/



#1 OVER-RELIANCE ON LOW-QUALITY SOURCES

This includes a broad collection of non-academic sources like blog posts, opinion pieces, publications by advocacy groups and daily news articles.



#2: LACK OF LANDMARK/SEMINAL LITERATURE

The reason for the absence of landmark literature in poor literature reviews is:

either that the student isn't aware of the literature (because they haven't sufficiently immersed themselves in the existing research)

or that they feel that they should only present the most up to date studies

#3: A LACK OF CURRENT LITERATURE

However, a strong literature review should also incorporate the **current literature**.

It should, ideally, **compare and contrast** the “classics” with the more up to date research, and briefly comment on the evolution.

#4: DESCRIPTION INSTEAD OF INTEGRATION AND SYNTHESIS 1

Often, students think that a literature review is simply a summary of what each researcher has said. A lengthy, detailed “he said, she said”.

This is incorrect.

A good literature review should also highlight what areas **don't fit together** and which **pieces are missing**.

#4: DESCRIPTION INSTEAD OF INTEGRATION AND SYNTHESIS 2

By the end of this process of critical review and synthesis of the existing literature, it should be **clear what's missing** – in other words, the gaps that exist in the current research.

These gaps then form the foundation for your proposed study.

Your study will attempt to contribute a missing puzzle piece.



#5: IRRELEVANT OR UNFOCUSED CONTENT

To ensure you stay on-topic and focus, you need to revisit your

- **research aims**
- **objectives**
- **research questions**

- Everything you think, do & write should be focused on your RQ

#6: POOR CHAPTER STRUCTURE AND LAYOUT 1

Result = disjointed, poorly-flowing arguments that are difficult for the reader (i.e. the marker...) to follow.

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#6: POOR CHAPTER STRUCTURE AND LAYOUT 2

Quick overview:

The introduction section – where you outline your topic, introduce any definitions and jargon and define the **scope** of your literature review.

The body section – where you sink your teeth into the existing research. This can be arranged in various ways (e.g. thematically, chronologically or methodologically).

The conclusion section – where you present the key takeaways and highlight the research gap (or gaps), which lays the foundation for your study.

#7: PLAGIARISM AND POOR REFERENCING

This carries a **heavy penalty**.

You need to **put things into your own words**.

Remember: if you can't explain something simply (in your own words), you don't really understand it.

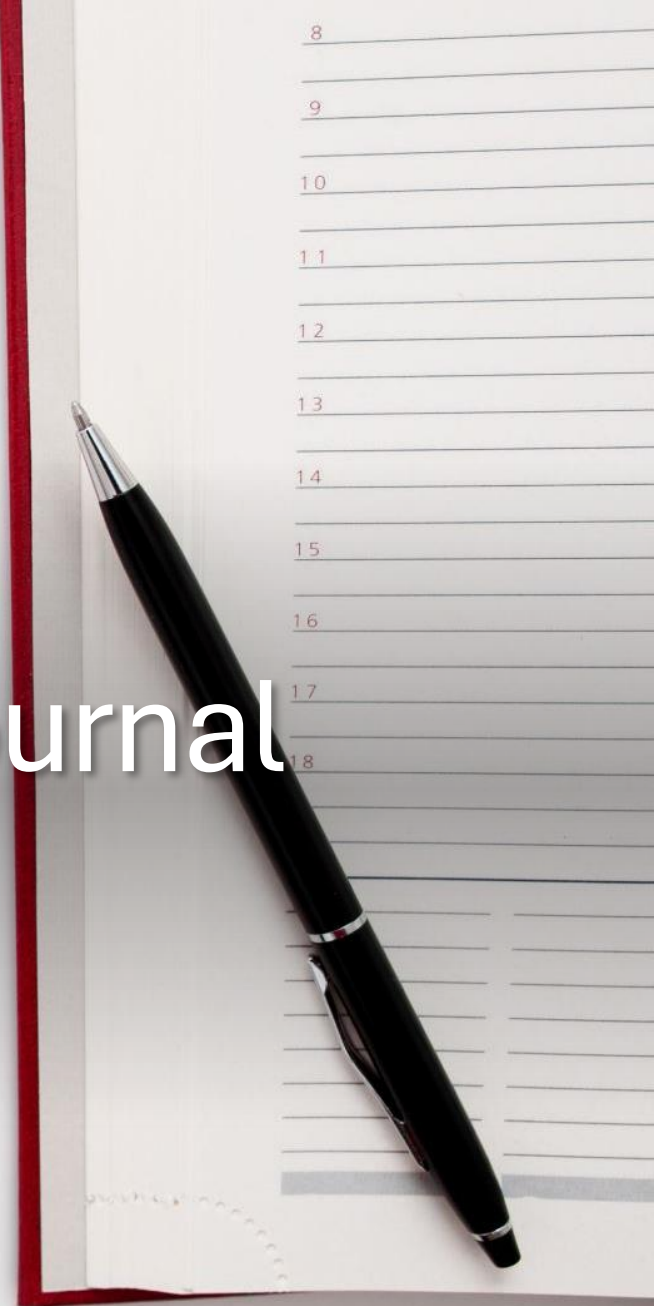
YOUR LITERATURE REVIEW

Consider the 'common terminology': what are the underpinning ideas and concepts that you are exploring?

Can you define these clearly for the reader and for the project?

What else do you need to read in order to make this robust and relevant in your field?

Keeping your own project journal



A stack of several books is positioned on the right side of a light-colored wooden desk. The books have various colored spines, including white, grey, and dark brown. In the background, a bright, out-of-focus light source creates a warm, golden glow across the scene. The text "Why might it be useful to keep a research journal?" is overlaid in the center-left area in a white, sans-serif font with a subtle drop shadow.

Why might it be useful to keep a
research journal?

Things that you might record:



What you have read/references



Any thoughts or reflections surrounding the project, particularly when you change your earlier intentions



Appointments made/to be made – an aide memoire



Taking stock of where you are at each stage – it can be an opportunity to reflect on progress, problems, suggestions and worries



Reflections on how you might be influencing the research filed or findings



Can also act as an audit trail

RESEARCH STUDY — FOLLOW UP TASK 1

Review the literature pertaining to your area of research

Scope out the shape of your literature review

This can be one side of A4, a PowerPoint slide, a poster

Ensure that you lead the reader to towards a clear identification of the gap(s) in knowledge or understanding that you seek to fill

Building your literature review will support you significantly in carrying out your research and reporting on it

You will present your ideas in small groups on 19th May 2026.



Task:

Create a concept map outlining key literature that you have recently engaged with that is informing your thinking

What methodology was used?

What are the strengths and limitations?

Are there any ideas emerging that are new to you?

What gaps are there in the literature?

Be prepared to present your ideas

QUESTIONS

