research nest

LESSON 7 · RESEARCH NEST COURSE

Writing the First Draft

> *If a stranger read only your title and first paragraph, would they know what you studied, why it matters, and what you found?*

A first draft is meant to be imperfect — its job is to exist so you can revise it.

Today: what each section of a paper does, and how structure changes between disciplines.

You will leave with a plan, a template and a first section already drafted.

BY THE END OF THIS LESSON

What you will be able to do

Output: a full first draft of your paper, with an annotated introduction and a revised, specific title.

- [ ] Explain what question each IMRaD section answers for the reader
- [ ] Choose a structure that fits your discipline: IMRaD, thesis-driven essay or design report
- [ ] Write a specific, informative title and a "funnel" introduction
- [ ] Report results neutrally, then interpret them cautiously in the discussion
- [ ] Write a conclusion that answers the research question without overclaiming
- [ ] Use a section-by-section template to draft, then revise

CONCEPT 1 · IMRAD

IMRaD: each section answers one question

Most empirical papers in the sciences and social sciences follow Introduction, Methods, Results and Discussion — often with a short conclusion.

1 **Introduction**
Why does this matter, what is already known, and what gap do you address?

→

2 **Methods**
What exactly did you do, with whom, and how could someone repeat it?

→

3 **Results**
What did you find? Report facts, numbers and themes — no interpretation.

→

4 **Discussion**
What do the results mean, how sure are you, and what are the limits?

→

5 **Conclusion**
So what? Answer the question briefly and say what should happen next.

Adapted from: UNC Writing Center, Scientific Reports; GMU Writing Center, IMRaD Reports

CONCEPT 2 · DISCIPLINE MATTERS

Structure varies by discipline

IMRaD is common, not universal. Pick the structure your field's readers expect.

Field	Typical structure	Organised around	Example project
Sciences, psychology	IMRaD	A research question and data	Noise and concentration in study spaces
History, literature	Thesis-driven essay with themed sections	An arguable thesis and evidence	How a 1919 newspaper framed a local strike
Engineering, design	Design report	A problem, requirements and tests	A low-cost sound-absorbing panel

Adapted from: UNC Writing Center, Thesis Statements; Alley, Tutorial for Reports in Engineering and Science

CONCEPT 3 · TITLES, INTRODUCTIONS, ORDER

"Funnel" introductions and drafting order

An introduction narrows from broad territory to your gap and question. Draft it once you know your results.

Move 1 · Territory

Show the topic matters and what research already shows.

Move 2 · Niche

Point to the gap or unresolved question.

Move 3 · Occupy the niche

State your aim, question (or thesis) and approach.

Drafting order

Methods → Results → Discussion → Introduction → Conclusion → Title.

Adapted from: USC Libraries, The Introduction (Swales' CARS model); UNC Writing Center, Introductions

WORKED EXAMPLE · STEP 1 INVENTED EXAMPLE

Noor revises her working title

Noor's first title named the topic but nothing else. Her revision tells the reader the variables, setting and design.

Variables: background noise; self-reported concentration.

Setting: three study spaces in one school. Design: mixed methods.

It does not claim noise "causes" anything — the design cannot show that.

BEFORE

Noise

AFTER

Background Noise and Self-Reported Concentration in Three School Study Spaces: A Mixed-Methods Study

WORKED EXAMPLE · STEP 2 INVENTED EXAMPLE

An annotated introduction: the funnel in action

Background noise is a familiar distraction in shared study spaces; lab studies link irrelevant speech to poorer recall (Study A*).[1] However, most studies use adults in labs (Study B*); less is known about teenagers in spaces they choose.[2] This study asks how noise in three school study spaces relates to self-rated concentration.[3] A survey, sound readings and interviews give a modest, local picture.[4]

Move 1 · Territory

Move 2 · Niche (gap signalled by "However")

Move 3 · Aim and question

Move 3 · Approach, stated modestly

*Placeholders, not real papers.

WORKED EXAMPLE · STEP 3 INVENTED EXAMPLE · SIMULATED DATA

Results report; Discussion interprets

Results: numbers, direction, size — no "because" or "suggests".

Discussion: meaning, links to literature, limitations.

RESULTS PARAGRAPH

Mean concentration was highest in the library quiet zone (3.9/5; 46 dB(A); n = 31), then the study hall (3.4/5; 54 dB(A); n = 27) and the cafeteria corner (2.6/5; 65 dB(A); n = 26). Noise and concentration were moderately negatively associated (ρ = −0.48).

DISCUSSION PARAGRAPH

Noisier spaces were linked to lower concentration, which fits interview reports that unpredictable speech distracts most. As students chose their own spaces and rated themselves, this is an association, not evidence that noise causes poorer focus.

FRAMEWORK

Section map: the question each section answers

Write each section's question at the top of the page. Move anything that does not answer it.

Noor's draft (invented; simulated data)

Section	Reader's question	In Noor's draft
Introduction	Why this, what is known, what is missing?	Lab-based research; teens in real spaces less studied
Methods	What did you do, and could I repeat it?	Survey (n = 84), sound app, 6 interviews, consent
Results	What did you find?	Means by space; ρ = −0.48; three interview themes
Discussion	What does it mean and how sure are you?	Association, not cause; self-selection
Conclusion	So what, and what next?	Quiet zones may help; test in more schools

COMMON MISTAKES

Common first-draft mistakes — and fixes

Mistake	Before	After (fix)
Vague title	"Noise"	Names variables, setting and design
Interpreting in Results	"Concentration was lower because talk distracts."	Report the means here; move "because" to Discussion
Overclaiming in Conclusion	"Noise causes poor concentration."	"Noise was associated with lower self-rated concentration."
Methods too thin	"We did a survey."	Who, how many, which instrument, when, how analysed
Introduction with no gap	Five sentences of background only	Add a "However, less is known about..." sentence

Adapted from: Purdue OWL; UNC Writing Center, Conclusions

GUIDED PRACTICE · 20 MINUTES INVENTED EXAMPLE · SIMULATED DATA

Fix a flawed paragraph

"Our survey of 40 households proves kerbside bins cause recycling: 72% of homes with a bin recycled weekly vs 35% without, so every town should provide bins."

1. **Read and highlight (3 min)**
   Mark facts in one colour, interpretation and claims in another.
2. **Write Results (5 min)**
   One or two sentences that only report what was found.
3. **Write Discussion (6 min)**
   Interpret cautiously and name at least two limitations.
4. **Retitle (2 min)**
   A specific title: variables, setting, design.
5. **Pair swap (4 min)**
   Partner checks: any "proves" or "causes" left? Any interpretation in Results?

MODEL RESPONSE INVENTED EXAMPLE · SIMULATED DATA

One strong answer

Title: "Kerbside Bins and Self-Reported Weekly Recycling: A Survey of 40 Households in One Neighbourhood"

No "proves" or "causes"; policy advice moves to a cautious conclusion, if at all.

Different wording is fine if the jobs are the same: report, then interpret with limits.

RESULTS

Of the 40 households surveyed, 72% of those with a kerbside bin reported recycling weekly, compared with 35% of those without one.

DISCUSSION

Having a bin was associated with more frequent recycling. However, households were not randomly given bins, recycling was self-reported and the sample was small and local, so factors such as habits or income may explain part of the gap.

REUSABLE TEMPLATE

Section-by-section drafting checklist

Use it while drafting and again when revising. Adapt headings for an essay or design report.

- [ ] Title: variables or focus, setting, design; no causal words unless earned
- [ ] Introduction: territory → gap ("However...") → aim and question or thesis
- [ ] Methods: participants, instruments, procedure, analysis, ethics
- [ ] Results: facts and numbers only; tables or figures cited in text
- [ ] Discussion: meaning, literature, limitations, other explanations
- [ ] Conclusion: answer the question, implications, next steps; no new data
- [ ] Whole draft: real citations only; flag placeholders; keep a revisit list

Adapted from: UNC Writing Center, Scientific Reports; Manchester Academic Phrasebank

KNOWLEDGE CHECK

Check your understanding

Next: draft every section with the template.

Label your intro's moves; bring a before/after title.

Keep a revisit list for the next presentation.

Where does "Concentration was lowest in the cafeteria corner (2.6/5)" belong?

A Introduction **B** Methods **C** Results **D** Conclusion

Which sentence makes the "niche" (gap) move?

A Noise is common in schools. **B** However, few studies look at teens. **C** 84 students were surveyed.

Noor found ρ = −0.48. Which conclusion fits?

A Noise causes poor focus. **B** Noise was linked to lower self-rated focus. **C** Noise has no effect.

A history paper on how a newspaper framed a strike is usually...

A IMRaD **B** A thesis-driven essay **C** A design report

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LESSON 7 · RESEARCH NEST COURSE

Citations, Revision, and Research Integrity

> *If a reader followed every citation and every step in your paper, would they find exactly what you said they would?*

Honest borrowing: paraphrase, quote, cite

Honest tools: AI used openly and checked

Honest drafts: revision that changes ideas, not just commas

LEARNING OBJECTIVES

By the end of this lesson you will be able to…

Your output: a checked, cited paraphrase; an AI-use log with a disclosure statement; and one paragraph revised after peer feedback.

- [ ] Tell a genuine paraphrase from patchwriting, and know when to quote instead
- [ ] Cite in the style your discipline expects (APA, MLA or Chicago)
- [ ] Recognise plagiarism, fabrication and falsification, and avoid them
- [ ] Use AI within your school policy, log it, disclose it and verify it
- [ ] Make your work reproducible and revise substantively after peer feedback

CONCEPT 1

Quote, paraphrase, or patchwrite? Then cite

Quote: exact words in quotation marks, when the wording itself matters

Paraphrase: the idea in your own words and structure, still cited

Patchwriting: swapping synonyms into the original sentence. Too close; rewrite

Citation style usually follows the discipline; your teacher or venue has the final say.

Style	Common in	In-text looks like
APA 7	Psychology, education, sciences	Author-date: (Author, 2024)
MLA 9	Literature, languages, arts	Author-page: (Author 45)
Chicago notes	History, some humanities	Superscript number with a footnote

Adapted from: APA Style, Paraphrases; Purdue OWL, Paraphrasing; Chicago-Style Citation Quick Guide

CONCEPT 2

Plagiarism and research integrity

Research misconduct is usually defined as fabrication, falsification or plagiarism. Honest error and honest disagreement are not misconduct.

Plagiarism

Presenting someone else's words, ideas, images or data as your own, including reusing your old work without saying so.

Fabrication

Making up data, results, interviews or sources. Inventing a citation counts.

Falsification

Changing, cherry-picking or hiding data or methods so the record is not accurate.

Honest error

Mistakes happen. Correct them openly; this is integrity, not misconduct.

Adapted from: US Office of Research Integrity, Definition of Research Misconduct; UNC Writing Center, Plagiarism

CONCEPT 3

Responsible AI use and reproducibility

AI is never an author and never a source of evidence on its own

Chemistry example: a dated lab notebook lets someone else repeat your titration

1. **Check the policy**
   School and teacher rules decide what AI use is allowed, if any.
2. **Log as you go**
   Date, tool, what you asked, what you kept.
3. **Verify everything**
   AI can invent facts and fake references. Find and read the real source.
4. **Disclose**
   State what AI did; cite it in the style your venue requires.
5. **Make it repeatable**
   Share methods, instrument and anonymised data so others can check.

Adapted from: APA Style Blog, Citing generative AI (2025); COPE, Authorship and AI tools

WORKED EXAMPLE · STEP 1 INVENTED EXAMPLE

Noor paraphrases a source

Invented source (Author, A., 2024, not a real paper): "Speech that listeners can understand disrupts reading and memory more than steady, meaningless sound."

Method: read, close the source, write from memory, then check against the original

PATCHWRITING (TOO CLOSE)

Speech that people can comprehend interrupts reading and remembering more than constant, meaningless noise (Author, 2024).

GENUINE PARAPHRASE

When background talk contains words a student can follow, it appears to harm reading and recall more than a steady hum at a similar volume (Author, 2024, p. 12).

WORKED EXAMPLE · STEP 2 INVENTED EXAMPLE

Noor logs and discloses her AI use

Disclosure: "A school-approved AI chatbot helped brainstorm search terms and check grammar. I found and read every source. No AI text appears in the paper."

Noor's AI-use log (extract). Ms Rahman's policy allows brainstorming and grammar checks with disclosure.

Date	Task	What Noor kept	Checked how?
2 Mar	Brainstorm search terms	"irrelevant speech effect", "classroom acoustics"	Ran both in Google Scholar and ERIC
3 Mar	Asked for key studies	Nothing: 2 of 4 references did not exist	Searched titles and DOIs; flagged to Ms Rahman
20 Mar	Grammar check, Methods	3 tense corrections	Reread; meaning unchanged

WORKED EXAMPLE · STEP 3 INVENTED EXAMPLE · SIMULATED DATA

Peer feedback drives a substantive revision

Peer 1: "Where is your evidence?" → added numbers

Peer 2: "Can you say noise causes this?" → changed causal claim to association

Peer 3: "What did interviews add?" → next paragraph: social reasons, headphones

BEFORE

Noise ruins concentration. The cafeteria was the worst place, so students should never study there.

AFTER PEER FEEDBACK

Ratings were lowest in the cafeteria corner (65 dB(A), 2.6/5) and highest in the library quiet zone (46 dB(A), 3.9/5). Rho = −0.48 suggests a moderate negative association, not causation: students chose their own spaces.

FRAMEWORK

Decision guide: do I need to cite this?

Did this wording, idea, number, image or data come from anyone or anything other than me?

Exact words from a source	→ Quotation marks + citation (with page or paragraph number)
Someone else's idea, finding or figure, in my words	→ Paraphrase or summary + citation
AI output I am using or quoting	→ Follow policy; disclose, and cite the tool in your style. Verify all claims.
Common knowledge or my own new results	→ No citation needed; if unsure, cite or ask your supervisor

COMMON MISTAKES

Common mistakes and quick fixes

Mistake	Fix
Copying into notes without quotation marks	Mark copied words with "quotes" and the source the moment you copy
Citing a reference you never opened (or an AI suggested)	Find, open and read it; cite only what exists and supports you
Synonym-swap patchwriting	Read, close, write from memory, then check against the original
Leaving out awkward data or results	Report everything; explain exclusions and limitations openly
"Revision" that only fixes commas	Revise argument and evidence first; proofread last

GUIDED PRACTICE · 20 MINUTES

Paraphrase, log, and give feedback

No source yet? Use the invented history passage in the presenter notes

1. **Paraphrase (6 min)**
   Pick one source you really use. Read, close, write from memory.
2. **Check (3 min)**
   Compare with the original. Quote any phrase you kept. Add the citation.
3. **Log (3 min)**
   Start your AI-use log, even if it says "No AI tools used".
4. **Swap (6 min)**
   Partner reads one draft paragraph: one praise, one question, one suggestion.
5. **Plan (2 min)**
   Write the one substantive change you will make.

MODEL RESPONSE INVENTED EXAMPLE

Model response: what a strong integrity pack looks like

NOOR'S PACK (EXTRACT)

Paraphrase: "…talk a student can follow appears to harm reading and recall more than a steady hum (Author, 2024, p. 12)." [1] Log: "3 Mar: AI suggested 4 studies; 2 did not exist; none used; told supervisor." [2] Disclosure: "AI used for search-term ideas and grammar checks; all sources found and read by the author." [3] Revision table: "Peer 2: causal claim → reworded as association (rho = −0.48); limitation added." [4]

- Own structure and words; hedged; cited with page (source invented)
- Records a problem honestly, not just successes
- Specific tasks and human responsibility
- Substantive change, linked to feedback (simulated data)

TEMPLATE

Template: integrity and revision checklist

Copy this into your project folder and tick it before you submit or present

- [ ] Every quotation has quotation marks, a citation and a page or paragraph number
- [ ] Every paraphrase has been checked against the original and is cited
- [ ] Every reference was opened and read by me, and matches the in-text citation
- [ ] AI-use log complete (date, tool, task, what I kept, how I checked) and disclosed
- [ ] All data and exclusions reported; methods detailed enough to repeat
- [ ] Survey or instrument and anonymised data ready to share, if allowed
- [ ] Peer feedback answered in a revision table; argument revised before proofreading

KNOWLEDGE CHECK

Knowledge check and next step

Next step: complete your integrity pack and bring the revised paragraph to Lesson 9

A student swaps synonyms into a source sentence but keeps its structure, and cites it. What is this?

A A good paraphrase **B** Patchwriting **C** A quotation **D** Common knowledge

An AI tool suggests a reference you cannot find in any database. What should you do?

A Cite it anyway **B** Change the year and cite it **C** Do not cite it; record it in your log **D** Cite the AI tool instead

Removing survey responses that do not fit your expectation, without reporting it, is...

A Fabrication **B** Falsification **C** Plagiarism **D** Honest error

Which change to Noor's discussion is substantive revision rather than proofreading? Explain why.

SOURCES & FURTHER READING

Sources and further reading

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