Wittgenstein and AI Prompt Engineering Techniques: How to Improve Your Prompts for Academic Research Writing with Wittgenstein

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Abstract

This article applies Ludwig Wittgenstein's philosophy of language to prompt engineering for academic research writing. It argues that a prompt is not merely an instruction to a machine but a language game: a language exchange whose meaning depends on purpose, audience, context, evidence, and the practical activity it supports. Drawing principally on Wittgenstein's later philosophy, especially the ideas of meaning as use, language games, family resemblance, rule following, and certainty, the article offers eight practical techniques for improving prompts used in academic writing. These techniques are: clarify the research task; define audience, genre, and purpose; supply relevant context and evidence; specify disciplinary conventions and structure; use iterative dialogue; guard against linguistic bewitchment; verify claims and sources; and practise ethical disclosure. The article also provides prompt templates and examples for literature reviews, research questions, argument development, methodology, discussion, and revision. It concludes that effective prompting requires epistemic humility: artificial intelligence can support academic writing, but it cannot replace the researcher's responsibility for judgement, evidence, interpretation, and accountability.

Keywords: artificial intelligence, academic writing, Wittgenstein, language games, prompt engineering, research writing, generative artificial intelligence, scholarly communication

Introduction:

“The limits of my language mean the limits of my world.”

Artificial intelligence has changed the practical conditions of academic writing. Researchers can now use generative artificial intelligence to brainstorm ideas, summarise literature, restructure arguments, improve clarity, translate text, generate outlines, and revise drafts. Yet the value of these tools depends less on the technology itself than on the quality of the human request. A vague prompt often produces a vague response; a precise, contextualised, and ethically framed prompt is more likely to produce useful academic support. This article argues that Ludwig Wittgenstein’s philosophy of language offers a powerful framework for understanding and improving such requests.

Wittgenstein’s remark that “the limits of my language mean the limits of my world” is often read as a claim about the relationship between language and thought (Wittgenstein, 1922/2001, proposition 5.6). In the context of prompt engineering, it suggests a practical insight: the way a researcher frames a task shapes what the artificial intelligence system can meaningfully address. A prompt that lacks disciplinary context, a clear purpose, or an explicit standard of evidence may limit the usefulness of the response. Conversely, a prompt that makes the research problem, audience, genre, and evidential expectations visible can expand the range of academically relevant assistance.

This article is written for students, early-career researchers, educators, and experienced academics who wish to use generative artificial intelligence responsibly in research writing. It does not claim that artificial intelligence can conduct research, make theoretical contributions, or take responsibility for scholarly claims. Rather, it treats artificial intelligence as a language-based assistant whose outputs must be evaluated within the practices of a particular discipline. The

central argument is that prompt engineering should be understood as a form of communicative design: the researcher designs a language game that helps the tool participate appropriately in an academic task.

The article draws mainly on Wittgenstein's later philosophy, especially Philosophical Investigations (Wittgenstein, 1953/2009), and on On Certainty (Wittgenstein, 1969/1975). It also refers briefly to the Tractatus Logico-Philosophicus (Wittgenstein, 1922/2001), where appropriate. Wittgenstein's later work is especially relevant because it rejects the idea that meaning is a private mental object attached to a word. Instead, meaning arises through use in shared social practices. For academic writing, this means that terms such as "validity," "significance," "methodology," "theory," and "evidence" cannot be understood in the abstract. Their meaning depends on the research tradition, genre, and language game in which they are used.

The article makes three contributions. First, it provides a philosophical interpretation of prompt engineering that moves beyond technical instruction.

Second, it develops eight practical techniques for improving prompts in academic research writing.

Third, it offers adaptable prompt templates that researchers can use across the research-writing process. Throughout, the article emphasises that prompting is not a substitute for reading, thinking, fieldwork, data analysis, peer review, or ethical responsibility.

Wittgenstein's Philosophy of Language:

"The meaning of a word is its use in the language."

Wittgenstein's later philosophy begins from a simple but consequential observation: language is not primarily a system of labels attached to objects. It is a set of practices embedded

in human life. In Philosophical Investigations, Wittgenstein writes that "for a large class of cases—though not for all—in which we employ the word 'meaning' it can be defined thus: the meaning of a word is its use in the language" (Wittgenstein, 1953/2009, §43). This view is often summarised as "meaning is use," although Wittgenstein himself does not present it as a complete theory of meaning.

For academic writers, this insight has an immediate implication. A word does not carry one fixed meaning across all contexts. The term "theory," for example, may refer to a formal explanatory framework in physics, a conceptual lens in sociology, a hypothesis in psychology, or a body of scholarship in literary studies.

Similarly, "evidence" may mean statistical results in quantitative research, interview extracts in qualitative research, archival documents in history, or textual interpretation in literary criticism. A prompt that asks an artificial intelligence tool to "make my argument stronger" without specifying the discipline may therefore produce generic advice that fails to respect these differences.

Wittgenstein introduces the idea of a language game to describe the rule-governed activities in which language is used. A language game is not merely a conversation. It includes the purpose of the activity, the participants, the actions involved, the standards of success, and the social context. Giving orders, describing an object, reporting an event, speculating, making a joke, asking a question, and conducting a peer review are all different language games.

Academic research writing is also a language game, but it contains many smaller language games: constructing a literature review, formulating a research question, presenting methods, interpreting findings, responding to reviewers, and writing an abstract.

Each of these activities has its own conventions. A literature review is not simply a summary of sources; it must show how scholarship relates to a research problem and identify gaps, debates, or contradictions. A methods section is not merely a description of procedures; it must enable readers to assess the credibility, transparency, and appropriateness of the research process. A discussion section is not merely a restatement of results; it must interpret findings in relation to theory, prior research, limitations, and implications. Effective prompts must therefore specify which academic language game the artificial intelligence tool is being asked to support.

Wittgenstein's idea of family resemblance is also relevant. He argues that many concepts do not possess one common essence shared by all their instances. Instead, their instances are connected by overlapping similarities, like members of a family. The concept of "research writing" is family-resemblance in this sense. A laboratory report, a systematic review, an ethnographic monograph, a legal analysis, and a philosophical essay may all count as research writing, but they do not share one identical set of rules. They overlap in certain respects: all may involve inquiry, argument, evidence, citation, and communication with a scholarly audience. Yet their specific conventions differ.

This means that prompt engineering should avoid treating "academic writing" as a single, uniform genre. A useful prompt identifies the particular genre, discipline, level of study, intended outlet, and communicative purpose.

For example, a prompt for a nursing systematic review should not use the same assumptions as a prompt for a qualitative education study. The former may require PRISMA-style reporting, inclusion and exclusion criteria, risk-of-bias assessment, and synthesis of quantitative findings. The latter may require reflexive attention to researcher positionality, thick description, thematic analysis, and interpretation of participant voices.

Wittgenstein also emphasises rule following. Rules do not determine every possible application of a term in advance; they must be applied in particular situations. In academic writing, style guides, disciplinary conventions, and assessment criteria provide rules, but they do not remove the need for judgement. A researcher may know the rule that claims require evidence, yet still need to decide what counts as sufficient evidence in a particular field. A writer may know that an introduction should establish a gap, yet still need to judge whether the gap is meaningful rather than merely unexplored.

Prompt engineering therefore involves more than following a formula. It requires the researcher to make visible the tacit standards that guide a particular academic practice. A strong prompt does not simply say, "Write an introduction." It asks the tool to help produce an introduction that meets identifiable disciplinary expectations: it identifies the problem, reviews relevant scholarship, establishes a gap, states the purpose, and previews the argument. The researcher remains responsible for judging whether those expectations have been met.

Prompt Engineering as a Language Game:

"Don't think, but look!"

Wittgenstein's instruction, "Don't think, but look!" (Wittgenstein, 1953/2009, §66), is not an argument against reflection. It is a reminder to examine actual practice rather than rely on abstract definitions. In prompt engineering, this means that researchers should not begin by asking, "What is the perfect prompt?" Instead, they should look at the actual writing task, the disciplinary conventions, the available evidence, and the kind of assistance required.

A prompt is a language game because it establishes a role, a task, a context, and a standard of response. Consider the difference between the following prompts: "Write about climate change" and "Draft a 250-word introduction for a social-science research paper on how

low-income households in Singapore experience heatwaves, using a vulnerability framework and citing peer-reviewed sources published between 2018 and 2025."

The second prompt does more than supply keywords. It identifies the discipline, audience, length, topic, theoretical lens, geographical focus, source expectations, and genre.

The first prompt invites a general response. The second invites a situated academic response. This difference illustrates Wittgenstein's point that words gain meaning through their use in a practice. "Climate change" is not a self-contained topic; it becomes academically meaningful when placed within a research question, a body of literature, a methodological approach, and an argumentative purpose.

Prompt engineering can therefore be understood as the design of a communicative situation. The researcher must decide: Who is speaking? Who is the audience? What is the task? What evidence is available? What disciplinary standards apply? What should the output do? What should it not do? These questions transform a vague request into a language game with clearer rules.

A useful prompt often includes six elements: role, task, context, constraints, evidence, and evaluation criteria. The role tells the tool what perspective to adopt, such as "Act as an academic writing coach for a postgraduate education researcher." The task states the specific action, such as "help me revise this paragraph for clarity and coherence." The context supplies relevant background, such as the research question, theoretical framework, and intended journal. Constraints specify length, style, citation requirements, and prohibited content. Evidence identifies the sources or data that may be used. Evaluation criteria explain what a successful response should achieve.

Not every prompt needs all six elements. A quick request to improve grammar may require only the text and a brief instruction. However, complex academic tasks benefit from greater specification. The more consequential the task, the more important it is to make the language game explicit. This is especially true for literature reviews, theoretical frameworks, methodology, interpretation of findings, and claims about causation.

Prompting should also be seen as a dialogue rather than a single command. Wittgenstein's philosophy suggests that meaning is not fixed at the moment an utterance is made; it is clarified through use, response, and further interaction. In the same way, a researcher may need to ask follow-up questions, request alternatives, challenge unsupported claims, and refine the output. The first response should be treated as a draft, not a final scholarly product.

Technique 1: Clarify the Research Task:

"What can be said at all can be said clearly."

Wittgenstein writes in the preface to the Tractatus that "what can be said at all can be said clearly" (Wittgenstein, 1922/2001, preface). This principle is especially useful in prompt engineering. Before asking an artificial intelligence tool to produce text, the researcher should be able to state the task clearly. What exactly should the tool do? Should it summarise, compare, critique, outline, rewrite, translate, identify gaps, suggest search terms, or evaluate an argument?

Vague verbs create vague outputs. "Improve my writing" may mean correcting grammar, increasing academic tone, reducing wordiness, strengthening transitions, clarifying logic, or restructuring an argument. Each is a different task. A better prompt separates these functions: "Identify three places in this paragraph where the logical connection between claims is unclear. Do not change the meaning. Explain each suggestion briefly."

Clarity also requires distinguishing between description, analysis, evaluation, and synthesis. A researcher may ask an artificial intelligence tool to describe the main findings of five articles, analyse the theoretical assumptions behind them, evaluate the strength of their methods, or synthesise them into an argument. These are related but distinct tasks. A prompt that confuses them may produce a response that summarises sources without developing an original scholarly position.

Researchers should also specify the desired unit of work. A prompt may target a sentence, paragraph, section, chapter, abstract, or full manuscript. It may be useful to work at the level of the paragraph when revising argumentation, because paragraphs are the basic units of academic reasoning. A prompt such as “Review this paragraph and identify whether the topic sentence, evidence, interpretation, and link to the research question are clear” gives the tool a manageable and academically meaningful task.

A practical technique is to begin with a task statement using the pattern: “Help me [specific action] in order to [academic purpose], for [audience], within [genre or discipline].”

For example: “Help me identify the main theoretical debate in this set of abstracts in order to develop the rationale for a qualitative study of teacher wellbeing, for an education journal, within a social-constructionist framework.”

This approach does not guarantee a perfect response. It does, however, reduce ambiguity and make it easier to evaluate the output. If the tool produces irrelevant material, the researcher can identify which part of the task statement was unclear. If the output is too general, the researcher can add disciplinary context. If it invents sources, the researcher can restrict the task to provided materials. Clear prompting is therefore a form of intellectual discipline.

Technique 2: Define Audience, Genre, and Purpose:

“Language is a labyrinth of paths.”

Wittgenstein describes language as “a labyrinth of paths” (Wittgenstein, 1953/2009, §203). Academic writing contains many such paths, and each path has its own expectations. A prompt that identifies the audience, genre, and purpose helps the artificial intelligence tool choose an appropriate route. Without this information, the tool may produce text that is grammatically correct but rhetorically misplaced.

Audience matters because academic readers bring different expectations. A journal editor, a doctoral examiner, a policy maker, a funding body, and a classroom teacher may evaluate the same research in different ways.

A journal article usually requires a focused research problem, a clear contribution, methodological transparency, and engagement with relevant scholarship. A dissertation may require a more detailed explanation of theoretical assumptions and research design. A policy brief may require accessible language, practical recommendations, and attention to decision-making contexts.

Genre also matters. An abstract, literature review, methods section, results section, discussion, conclusion, conference presentation, grant proposal, and response to reviewers each have different functions. A prompt should name the genre and, where possible, provide an example or template.

For instance: “Revise this abstract for a 250-word structured abstract for a public-health journal. Include background, objective, methods, results, and conclusion. Use plain academic English and avoid unsupported causal claims.”

Purpose is equally important. Is the purpose to inform, persuade, critique, explore, compare, explain, recommend, or theorise? A research article may have more than one purpose, but one purpose should usually be central. If the purpose is to evaluate an intervention, the prompt should make the evaluative criteria explicit. If the purpose is to explore lived experience, the prompt should avoid language that implies measurement or generalisation beyond the data.

A useful prompt structure is: "Write or revise this text for [audience] in the genre of [genre], with the purpose of [purpose]. Use the conventions of [discipline or journal]." This structure prevents the common problem of producing text that sounds academic but does not perform the required communicative work. Academic writing is not merely formal writing; it is writing that participates in a scholarly conversation.

Researchers should also specify the desired voice and level of formality. Some journals prefer direct, plain English; others expect a more formal, impersonal style. Some disciplines permit first-person positioning, while others prefer passive constructions. Rather than assuming that artificial intelligence knows these preferences, the researcher should state them.

For example: "Use first person where appropriate, but maintain an analytical and restrained tone. Avoid promotional language and unsupported superlatives."

Finally, the prompt should identify what the text must accomplish for the reader. A strong prompt may state: "After reading this paragraph, the reader should understand why the research problem matters, what remains unresolved in the literature, and how this study addresses that gap." This makes the rhetorical goal explicit and gives the tool a standard against which its response can be assessed.

Technique 3: Supply Context and Evidence:

"An expression has meaning only in the stream of life."

Wittgenstein remarks that an expression has meaning only in "the stream of life" (Wittgenstein, 1953/2009, p. 174e). In academic research, that stream includes the research problem, theoretical framework, data, prior studies, institutional requirements, and disciplinary debate. A prompt that supplies relevant context is more likely to produce a response that is useful, accurate, and appropriately situated.

Context should include the research question, the study design, the population or case, the theoretical perspective, and the intended contribution.

For example, a prompt about "teacher burnout" becomes more useful when the researcher specifies whether the study concerns primary-school teachers in Singapore, nurses in public hospitals, university lecturers in China, or gig-economy workers. It should also state whether the study uses interviews, surveys, administrative data, ethnography, or a systematic review.

Evidence should be supplied whenever possible. Researchers can paste anonymised excerpts from interview transcripts, survey items, coding frameworks, statistical outputs, policy documents, or article abstracts. They can also upload or attach source material where the platform permits. The prompt should make clear what the tool may use: "Use only the attached sources. Do not add sources that are not provided. If information is missing, state that it is missing."

This restriction is important because generative artificial intelligence systems can produce plausible but incorrect information. They may generate citations that do not exist, misrepresent the findings of real sources, confuse authors or dates, or present contested claims as settled facts. These risks are particularly serious in academic writing, where accuracy, traceability, and intellectual honesty are foundational. A prompt should therefore treat the tool as a drafting assistant, not as a source of truth.

A useful evidence-based prompt includes three instructions: identify the evidence, explain its relevance, and distinguish between what the evidence supports and what it does not support.

For example: “Using only the attached interview excerpts, identify three recurring themes related to teacher wellbeing. For each theme, provide a short illustrative quotation, explain its interpretation, and state clearly whether the evidence is sufficient to support a broader claim.”

Researchers should also distinguish between primary and secondary evidence. A primary source may be an interview, dataset, experiment, archival document, or original research article. A secondary source may be a review, textbook, meta-analysis, or commentary. The prompt should specify which type of evidence is appropriate.

In a literature review, for example, the researcher may ask the tool to distinguish empirical studies from conceptual papers and to identify the type of evidence each source provides.

Context also includes limitations. The researcher should state what is known, what is uncertain, and what cannot be concluded.

For example: “Do not imply that the findings generalise beyond the 18 participants in this study. Identify the limits of transferability and recommend cautious language.” This instruction helps prevent overclaiming, a common risk when artificial intelligence is asked to make research sound more significant than the evidence warrants.

Technique 4: Specify Structure and Disciplinary Conventions:

“The work of the philosopher consists in assembling reminders for a particular purpose.”

Wittgenstein writes that “the work of the philosopher consists in assembling reminders for a particular purpose” (Wittgenstein, 1953/2009, §127). This is a helpful description of prompt

engineering. A good prompt assembles reminders: it reminds the artificial intelligence tool of the structure, standards, and purpose of the academic task. It does not merely provide a topic; it provides a map of the intellectual work to be done.

Structure can be specified at several levels. At the manuscript level, the researcher may specify the conventional sections of an article: introduction, literature review, methods, findings, discussion, and conclusion. At the section level, the researcher may specify the moves required.

For example, an introduction may need to establish context, identify a problem, review key scholarship, state the gap, present the research question, and outline the contribution.

At the paragraph level, the researcher may specify a claim–evidence–interpretation–link structure. A strong academic paragraph often begins with a claim, supports it with evidence, interprets the evidence, and connects it to the argument. A prompt can make this structure explicit: “Revise this paragraph so that it begins with a clear claim, supports it with evidence from the attached source, interprets the evidence, and ends by linking it to the research question.”

Disciplinary conventions should also be made explicit. Different fields have different expectations regarding citation style, theoretical language, methodological reporting, and argumentative style. A psychology paper may require operational definitions, effect sizes, confidence intervals, and ethical approval. A sociology paper may require theoretical framing, attention to power and social context, and justification of interpretive choices. A computer-science paper may require reproducibility details, datasets, model specifications, and evaluation metrics.

The prompt should identify the relevant style guide and citation system.

For example: “Use APA 7th edition in-text citations and references. Do not fabricate sources. If a citation is uncertain, mark it as [citation required].” This instruction does not

eliminate the need for verification, but it establishes an expectation of transparency. The researcher must still check every reference against the original source.

A useful prompt can also ask the tool to produce a structural plan before drafting.

For example: “Before writing, provide a brief outline of the section. Identify the function of each paragraph and the evidence needed. Do not write the full section until I approve the outline.” This technique gives the researcher greater control and reduces the risk of receiving a long, unfocused draft.

Researchers should also request explicit signposting. Academic readers benefit from clear transitions, but signposting should not become mechanical repetition. A prompt may state: “Use transitions that show logical relationships, such as contrast, cause, qualification, or development. Avoid formulaic phrases such as ‘firstly, secondly, and finally’ unless they genuinely clarify the structure.”

Technique 5: Use Iterative Dialogue and Revision:

“Everything that can be thought at all can be thought clearly.”

Wittgenstein’s remark that “everything that can be thought at all can be thought clearly” (Wittgenstein, 1922/2001, proposition 4.116) supports an iterative approach to prompting. Academic writing rarely emerges fully formed. It develops through drafting, feedback, questioning, revision, and reflection. Artificial intelligence can support this process, but only if the researcher treats the interaction as a dialogue rather than a one-off request.

The first prompt should establish the task and constraints. The second prompt should evaluate the response. The third prompt should refine it.

For example, after receiving a draft literature-review paragraph, the researcher may ask: “Which claims in this paragraph are supported by the attached sources? Which claims require

additional evidence? Identify any sentence that overstates the findings." This sequence turns the tool from a text generator into a partner in revision.

Iterative prompting is especially valuable for argument development. A researcher may begin by asking the tool to identify possible objections to an argument. The researcher can then ask for responses to those objections, followed by an assessment of which responses are strongest and which require further evidence. This process resembles scholarly peer review, although it does not replace it. It helps the writer anticipate criticism before submitting work to human reviewers.

A practical revision sequence is: clarify, diagnose, revise, verify, and reflect. First, clarify the task and context. Second, ask the tool to diagnose problems in the draft, such as unclear claims, weak transitions, missing evidence, or inconsistent terminology. Third, ask for a targeted revision rather than a complete rewrite. Fourth, verify factual claims, quotations, and references. Fifth, reflect on whether the revised text still represents the researcher's own argument.

Researchers should avoid asking for a complete manuscript in one prompt. This often produces generic prose, shallow analysis, and unsupported generalisations. It is better to work in smaller units: one research question, one paragraph, one section, or one argumentative move. This approach makes it easier to maintain control over the text and to preserve the researcher's voice.

The researcher should also ask for alternatives rather than a single answer.

For example: "Provide three possible ways to state the research gap. Explain the advantage and limitation of each. Do not choose for me." This technique keeps the researcher in the position of decision maker. It also reduces the risk of accepting the first plausible response as the only possible response.

Finally, researchers should preserve a record of significant prompts and outputs, especially where artificial intelligence has contributed to the development of a manuscript. This record can support transparency, reproducibility, and ethical accountability. It also helps the researcher explain how the final text was produced and which judgements remained human.

Technique 6: Guard Against Linguistic Bewitchment:

"Philosophy is a battle against the bewitchment of our intelligence by means of language."

Wittgenstein famously describes philosophy as "a battle against the bewitchment of our intelligence by means of language" (Wittgenstein, 1953/2009, §109). This warning is highly relevant to artificial intelligence. Generative systems can produce fluent, confident, and authoritative-sounding prose even when the underlying reasoning is weak, the evidence is absent, or the claim is false. Fluency is not truth. Clarity is not accuracy. Confidence is not validity.

Academic writers should therefore be alert to linguistic bewitchment. A response may use impressive vocabulary, balanced sentence structure, and formal tone while making an unsupported claim. It may use the language of causation where the evidence only supports association. It may describe a small qualitative study as "generalisable," or treat a correlation as proof of a causal mechanism. These are not merely stylistic problems; they are epistemic problems.

A useful prompt asks the tool to distinguish between description, interpretation, and inference.

For example: "Label each sentence in this paragraph as description, interpretation, or inference. Identify any claim that goes beyond the evidence. Do not add new evidence." This technique makes the epistemic status of the text visible. It helps the researcher see where description ends and interpretation begins.

Researchers should also ask the tool to identify hedging, qualification, and uncertainty. Academic writing often requires careful language: “may suggest,” “is consistent with,” “appears to indicate,” “within this sample,” and “further research is needed.” These phrases are not signs of weakness. They are signs of appropriate epistemic caution. A prompt may state: “Revise the paragraph to avoid unsupported certainty. Use qualifications where the evidence does not justify a stronger claim.”

Another form of bewitchment is the illusion of neutrality. Artificial intelligence outputs may appear objective because they are presented in impersonal language. However, every response reflects training data, design choices, and the prompt supplied by the user. A researcher should ask: Whose perspectives are included? Whose are absent? What assumptions are embedded in the suggested framework? What alternative interpretations are possible?

A prompt can make these questions explicit: “Identify the theoretical assumptions in this draft. State whose interests or perspectives may be privileged. Suggest one alternative interpretation that is consistent with the evidence.” This technique is particularly important in qualitative research, critical scholarship, and research involving marginalised communities.

Researchers should also beware of circular reasoning. An artificial intelligence tool may restate the researcher’s assumptions in more polished language without testing them. A useful prompt is: “Do not simply agree with my argument. Identify the strongest objection to it, using the attached literature. Then explain what evidence would be needed to respond to that objection.” This invites productive intellectual friction rather than mere affirmation.

Technique 7: Verify Claims and Practise Epistemic Humility:

“If you tried to doubt everything, you would not get as far as doubting anything.”

In On Certainty, Wittgenstein argues that doubt depends on certain background certainties. He writes: “If you tried to doubt everything you would not get as far as doubting anything. The game of doubting itself presupposes certainty” (Wittgenstein, 1969/1975, §115). This insight is relevant to research writing because inquiry requires a framework of assumptions, methods, and standards. Yet it also warns against treating every claim as equally uncertain.

In prompt engineering, epistemic humility means knowing what can reasonably be delegated to artificial intelligence and what must remain a human responsibility. Artificial intelligence may help identify possible themes, suggest alternative phrasing, organise material, or explain a methodological concept. It should not be treated as a reliable authority for facts, citations, legal advice, clinical guidance, statistical interpretation, or ethical approval.

Verification is therefore essential. Every factual claim, quotation, statistic, and reference should be checked against a reliable original source. The researcher should confirm that the source exists, that it says what the tool claims, that the date and author are correct, and that the interpretation is fair. This is especially important when artificial intelligence is used to summarise literature or generate reference lists.

A useful verification prompt is: “For each claim in this paragraph, identify whether it is supported by the attached source. Quote or paraphrase the relevant passage. If the source does not support the claim, state this clearly. Do not infer support from general knowledge.” This prompt turns the tool into a checking assistant, but the researcher must still inspect the original source.

Researchers should also distinguish between uncertainty and doubt. Not every uncertainty requires the same response. A missing detail in a citation can be checked. A contested theoretical interpretation may require further reading. A methodological limitation may

require transparent discussion. A claim that cannot be supported by available evidence may need to be removed or revised. Wittgenstein's point is not that researchers should doubt everything indiscriminately; it is that doubt must operate within a framework of shared standards and practices.

Epistemic humility also involves recognising the limits of one's own expertise. A researcher may be expert in education but not in statistical modelling, copyright law, clinical practice, or data protection. In such cases, the responsible approach is to consult appropriate experts, institutional guidance, and primary sources. Artificial intelligence can help formulate questions for experts, but it should not replace expert judgement.

A useful prompt for uncertainty is: "Identify the three most important limitations of this argument. For each limitation, state whether it can be addressed through further evidence, a revised claim, or a methodological change. Do not offer unsupported solutions." This prompt encourages realistic appraisal rather than superficial confidence.

Technique 8: Practise Ethical Disclosure and Responsible Attribution:

"What we cannot speak about we must pass over in silence."

Wittgenstein's final proposition in the Tractatus, "Whereof one cannot speak, thereof one must be silent" (Wittgenstein, 1922/2001, proposition 7), is often interpreted as a call for restraint in the face of what cannot be meaningfully said. In academic writing, this principle supports ethical restraint. Researchers should not present uncertain, unverified, or unsupported material as established knowledge. They should also be transparent about the role of artificial intelligence in the writing process.

Generative artificial intelligence should not be listed as an author because it cannot take responsibility for the integrity of the work, approve the final version, or be accountable for

ethical breaches. The researcher remains responsible for the accuracy, originality, interpretation, and ethical use of all material. This responsibility includes compliance with journal policies, university regulations, funder requirements, copyright law, and data-protection rules.

An AI-use disclosure should state which tool was used, when it was used, and for what purpose. It should also explain the extent of use and confirm human oversight.

For example: “The author used [tool name and version] in [month and year] to assist with brainstorming, organising sections, and editing language. The author reviewed and revised all output, verified all sources, and takes full responsibility for the final manuscript.”

Disclosure is especially important when artificial intelligence has contributed to the drafting of a manuscript. Some journals require disclosure in the methods section, acknowledgements, author note, or a dedicated statement. Researchers should consult the specific journal’s policy before submission. Where no policy exists, a transparent author note is still appropriate.

Researchers should also protect confidential and personal data. Interview transcripts, patient records, student data, unpublished manuscripts, and proprietary information should not be entered into an artificial intelligence system without appropriate permission, anonymisation, and institutional approval. A prompt should never require the disclosure of information that would breach privacy, confidentiality, or research-ethics requirements.

Ethical prompting also includes respect for intellectual property. Researchers should not ask an artificial intelligence tool to imitate a particular author’s style in a way that could mislead readers or infringe copyright. They should not use artificial intelligence to disguise plagiarism, fabricate data, generate fake peer reviews, or create misleading images. These practices undermine the trust on which scholarship depends.

A useful ethical prompt is: “Review this paragraph for unsupported claims, potentially plagiarised phrasing, and statements that require citation. Do not rewrite the argument. Identify the issue and explain why it matters.” This keeps the researcher responsible for the final decision while using the tool to support careful review.

Practical Prompt Templates for Academic Research Writing:

“Don’t think, but look!”

The following templates can be adapted to different disciplines and writing tasks. They are starting points, not rigid formulas. Researchers should modify them according to the research question, data, audience, journal requirements, and ethical constraints.

Template 1: Literature-review synthesis. “Using only the attached sources, identify the main debates in the literature on [topic]. Group the sources by theme rather than summarising each article separately. For each theme, identify points of agreement, disagreement, and evidence gaps. Do not invent sources. Use APA 7th edition citations where a claim is attributed to a source.”

Template 2: Research-question development. “I am conducting a [qualitative/quantitative/mixed-methods] study on [topic] among [population] in [context]. My preliminary research problem is [problem]. Suggest five possible research questions that are specific, feasible, ethically appropriate, and aligned with a [theoretical framework] approach. Explain the advantage and limitation of each question. Do not select one for me.”

Template 3: Theoretical-framework development. “Explain how [theory] can be used to interpret [phenomenon] in the context of [field]. Identify the theory’s main concepts, assumptions, and possible limitations. Do not treat the theory as universally applicable. Suggest how I could justify its use in a study of [population/context].”

Template 4: Methods-section clarity. “Review this methods section for clarity, transparency, and internal consistency. Identify any missing information that a reader would need to assess the rigour of the study. Do not invent procedures, sample sizes, ethical approvals, or statistical tests. Present your comments as a numbered list.”

Template 5: Findings interpretation. “Using only the attached findings, identify three possible interpretations. For each interpretation, distinguish between what the data show, what may reasonably be inferred, and what would require further evidence. Do not make causal claims unless the design supports them.”

Template 6: Discussion-section development. “Help me develop a discussion section that interprets the findings in relation to [theory] and the attached literature. Identify where the findings confirm, extend, complicate, or contradict prior research. Do not overstate the contribution. Identify limitations and implications that follow directly from the evidence.”

Template 7: Revision for clarity. “Revise this paragraph for clarity, coherence, and academic tone. Preserve my meaning and argument. Do not add claims or references. Identify any sentence that is ambiguous, overly long, or repetitive. Provide a revised version and a brief explanation of the changes.”

Template 8: Peer-review preparation. “Act as a constructive but critical academic reviewer for a manuscript in [discipline]. Using the attached manuscript excerpt, identify the three strongest aspects and the three most important concerns. Focus on argument, evidence, method, clarity, and contribution. Do not comment on the author’s identity or make personal judgements.”

These templates illustrate a central principle: a prompt should make the academic language game visible. It should identify the task, the evidence, the audience, the genre, the

standards, and the limits of the tool's authority. When these elements are present, artificial intelligence can become a useful partner in the writing process. When they are absent, the output may be fluent but intellectually empty.

Limitations and Future Directions:

"The work of the philosopher consists in assembling reminders for a particular purpose."

This article offers a philosophical and practical framework rather than an empirical evaluation of prompt effectiveness. It does not report a systematic review of artificial intelligence tools, an experimental study of prompt performance, or an analysis of disciplinary differences in output quality. Future research could examine how different prompt structures affect accuracy, coherence, disciplinary appropriateness, and user learning across fields.

Future studies should also examine the risks of overreliance on artificial intelligence. If researchers become accustomed to accepting fluent outputs without verification, the quality of scholarship may decline. If institutions adopt artificial intelligence without clear guidance, students may struggle to distinguish assistance from substitution. Research is needed on how educators can teach prompt literacy, source verification, and ethical disclosure alongside conventional academic-writing skills.

There is also a need for discipline-specific guidance. The conventions of medicine, law, engineering, education, history, and literary studies differ substantially. A prompt that works well in one field may be inappropriate in another. Future work should develop prompt frameworks that respect these differences rather than treating academic writing as a single generic activity.

Finally, researchers should attend to equity and access. Not all students and scholars have equal access to advanced artificial intelligence tools, reliable internet connections, or institutional

support. Prompt engineering should not become another source of educational inequality. Universities and journals should provide clear, accessible guidance that helps all researchers use these tools responsibly.

Conclusion:

“Whereof one cannot speak, thereof one must be silent.”

Wittgenstein’s philosophy offers a valuable lens for understanding prompt engineering in academic research writing. A prompt is not simply a technical command. It is a language game that establishes a task, a context, a set of expectations, and a standard of success. The researcher who understands this can design prompts that are clearer, more disciplined, and more ethically responsible.

The eight techniques presented in this article—clarify the task; define audience, genre, and purpose; supply context and evidence; specify structure and conventions; use iterative dialogue; guard against linguistic bewitchment; verify claims; and practise ethical disclosure—provide a practical foundation for responsible artificial intelligence use. They do not promise perfect outputs. They do, however, help researchers maintain intellectual control over the writing process.

The central lesson is that artificial intelligence should support, not replace, scholarly judgement. It can help researchers organise thoughts, identify gaps, revise prose, and explore alternatives. It cannot determine what counts as knowledge, decide what matters, or take responsibility for the consequences of published claims. Those responsibilities remain with the human researcher.

Wittgenstein reminds us that language is active, situated, and rule-governed. In academic writing, this means that every prompt shapes the possibilities of the response. By making the

research task clear, grounding it in evidence, respecting disciplinary conventions, and acknowledging uncertainty, researchers can use artificial intelligence in ways that strengthen rather than weaken the integrity of scholarship.

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The author used a generative artificial intelligence tool to assist with drafting, organising, editing, and formatting parts of this manuscript. The author developed the research question, selected the philosophical framework, reviewed and revised all content, checked the appropriateness of quotations and references, and takes full responsibility for the final article. Generative artificial intelligence was not listed as an author. The author acknowledges that all citations, quotations, and factual claims should be independently verified before scholarly use.

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