



**PROMPT LITERACY IS NOT A TECHNICAL SKILL:
RECONCEIVING QUERY FORMULATION AS PHILOSOPHICAL-
COGNITIVE COMPETENCE**

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ABSTRACT

Problem statement. Prompt literacy is widely treated as a technical proficiency — a repertoire of formats and phrasings to be acquired and, on a common assumption, rendered obsolete as models improve. This framing is consequential: it locates prompt literacy outside the curriculum proper and justifies teaching it, if at all, as a short procedural module.

Purpose. To advance and defend an alternative account: that prompt formulation, properly analysed, decomposes into cognitive operations constitutive of philosophical reasoning, and therefore belongs within the curriculum rather than beside it.

Methodology. Conceptual analysis and theoretical synthesis. The act of prompt formulation is decomposed into constituent operations; each is mapped onto established constructs in critical thinking, metacognition, and cognitive load theory; the resulting account is tested against four objections.

Results. Four operations are identified — problem articulation, perspective specification, output-type specification, and evaluative revision. Each corresponds to a recognised philosophical-cognitive operation. Two theses follow. The *constitution thesis*: prompt formulation is not analogous to philosophical reasoning but partially constituted by it. The *obsolescence-resistance thesis*: improved model capability does not eliminate the underlying competence, because the operations concern the specification of the learner's own epistemic aim — which no model can perform on the learner's behalf without defeating the purpose.

Conclusions. Prompt literacy should be reconceived as a philosophical-cognitive competence and assessed accordingly. Provisional assessment criteria and a verification design are proposed.

Keywords: prompt literacy, artificial intelligence in education, philosophical education, critical thinking, metacognition, epistemic aims, cognitive load, curriculum

АННОТАЦИЯ

Постановка проблемы. Промпт-грамотность широко трактуется как техническая компетенция — набор форматов и формулировок, который, согласно распространённому допущению, утратит значение по мере совершенствования моделей. Такая трактовка помещает промпт-грамотность за пределы содержания образования.





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Цель. Обосновать альтернативную трактовку: акт формулирования запроса при анализе распадается на когнитивные операции, конституирующие философское рассуждение, и потому принадлежит содержанию образования.

Результаты. Выделены четыре операции: артикуляция проблемы, спецификация перспективы, спецификация типа результата, оценочная переработка. Обоснованы два тезиса: тезис конституции (формулирование запроса не аналогично философскому рассуждению, а частично конституируется им) и тезис устойчивости к устареванию (рост возможностей моделей не устраняет базовую компетенцию, поскольку операции касаются спецификации собственной эпистемической цели учащегося).

Ключевые слова: промпт-грамотность, искусственный интеллект в образовании, философское образование, критическое мышление, метапознание, эпистемические цели

ANNOTATSIYA

Muammoning qo'yilishi. Prompt savodxonligi keng tarqalgan tarzda texnik ko'nikma — formatlar va iboralar majmui sifatida talqin qilinadi va modellar takomillashgani sari uning ahamiyati yo'qoladi deb taxmin qilinadi. Bu talqin prompt savodxonligini ta'lim mazmunidan tashqariga chiqaradi.

Maqsad. Muqobil talqinni asoslash: so'rov shakllantirish akti tahlil qilinganda falsafiy mulohazani tashkil etuvchi kognitiv amallarga ajraladi va shu sababli ta'lim mazmuniga tegishli.

Natijalar. To'rt amal ajratiladi: muammoni artikulyatsiya qilish, nuqtai nazarni belgilash, natija turini belgilash, baholovchi qayta ishlash. Ikki tezis asoslanadi: konstitutsiya tezisi va eskirishga chidamlilik tezisi.

Kalit so'zlar: prompt savodxonligi, ta'limda sun'iy intellekt, falsafiy ta'lim, tanqidiy tafakkur, metakognitsiya, epistemik maqsadlar

1. INTRODUCTION

Prompt literacy entered educational discourse as a practical necessity and has largely remained there. Institutions publish prompt guides; workshops teach phrasings; templates circulate. The implicit account is uniform: prompting is a technical proficiency, useful now, and destined for obsolescence as models grow better at inferring what users mean.

The framing has consequences. If prompting is technical, it belongs in an induction session rather than the curriculum; if it is transitional, investment in teaching it is hard to justify; and if models will soon read intent from a fragment, then teaching students to articulate intent is teaching a skill with an expiry date.

This paper argues that the framing is mistaken, and mistaken in a way that matters most precisely where the stakes are highest — in philosophical education.

The argument begins with an observation available to anyone who has watched students work with a language model. Two students issue queries on the same topic. The first writes: *"Explain freedom."* The second writes: *"I hold that freedom requires the*





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capacity to have acted otherwise. Give me the strongest compatibilist objection to that claim, and tell me which of my assumptions it targets.”

The conventional reading is that the second student has better prompting technique. The reading proposed here is different: the second student has **already done philosophical work that the first has not**. They have taken a position, identified its structure, located it within a debate, and specified the kind of resistance that would be informative. The prompt did not require these operations as a formatting matter; it **records** them. The difference between the two queries is not one of technique. It is a difference in reasoning that the queries make visible.

If this is right, then the technical framing inverts the relationship. Prompt formulation does not resemble philosophical reasoning; it is partially **constituted** by it.

The paper’s research questions are:

RQ1. Into what constituent operations does the act of prompt formulation decompose?

RQ2. What relation do these operations bear to established constructs in critical thinking and metacognition — analogy, or constitution?

RQ3. Does the competence dissolve as model capability increases?

The contributions are the *constitution thesis* (RQ2) and the *obsolescence-resistance thesis* (RQ3), together with a provisional assessment scheme and a verification design.

2. THEORETICAL BACKGROUND

2.1. The prevailing technical account and its assumptions

The technical account rests on two assumptions, rarely stated.

The first is that a prompt is a **conveyance**: the user has a fully formed intention, and the prompt transports it to the system. On this assumption prompt quality is a transmission problem, and better inference at the receiving end reduces the burden at the sending end.

The second is **capability substitution**: whatever the user fails to specify, a sufficiently capable model will infer.

Both assumptions fail in the philosophical case, and they fail for the same reason. They presuppose that the intention exists prior to its formulation and awaits transmission. In philosophical inquiry this is frequently false. The student does not arrive with a determinate question and struggle to phrase it; the student arrives with an inchoate sense of difficulty, and **formulating the question is how the question comes to exist**. This is not incidental to philosophy — it is close to a definition of it. Dewey’s account of reflective thought begins precisely here: inquiry starts in a felt difficulty and its first work is the conversion of that difficulty into a statable problem [1].

If formulation is constitutive rather than conveyant, then no amount of inference at the receiving end can substitute for it. A model that guesses well relieves the student of the very operation that constitutes the inquiry.

2.2. Critical thinking as a family of operations

Expert consensus characterises critical thinking not as a general disposition but as a set of specifiable operations: interpretation, analysis, evaluation, inference, explanation,





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and self-regulation [2]. Related traditions identify the identification of assumptions, the assessment of evidence, and the consideration of alternative perspectives as core moves [3].

This decompositional character matters for the present argument. If critical thinking is a family of operations rather than an atmosphere, then any activity can be examined for whether it recruits those operations — and the question of whether prompt formulation does so becomes tractable rather than rhetorical.

2.3. Metacognition and epistemic aims

Metacognition comprises knowledge of one's own cognition and its regulation [4]; self-regulated learning theory adds the setting of goals and the monitoring of progress toward them [5].

A finer distinction is required here. Recent work in the epistemology of education distinguishes an **epistemic aim** — what one is trying to achieve epistemically (to understand, to justify, to decide, to explore) — from the informational content sought. The distinction is exactly what the two contrasting prompts in Section 1 illustrate. “Explain freedom” specifies content without an epistemic aim. The second prompt specifies an aim: *to test the robustness of a position I hold*.

Specifying an epistemic aim requires knowing what one is trying to achieve — which is a metacognitive act, not a linguistic one.

2.4. Load, difficulty, and the illusion of assistance

Cognitive load theory distinguishes extraneous from germane load and prescribes reducing the former while preserving the latter [6]; research on desirable difficulties shows that subjectively easy conditions frequently produce inferior long-term outcomes [7].

These findings bear on the capability-substitution assumption in a way its proponents may not intend. If a model infers the student's aim from a fragmentary prompt, it has removed the work of aim specification. The question is whether that work was extraneous or germane. Section 3 argues it is germane — indeed that it is among the most germane operations in the philosophical curriculum. If so, then a model that infers intent well is not assisting; it is **offloading the learning objective**, with the characteristic signature of the illusion of fluency: the interaction feels more efficient precisely because less learning is occurring.

3. METHODOLOGY

The study employs **conceptual analysis** and **theoretical synthesis**, methods appropriate where the object of inquiry is the correct characterisation of a construct rather than the magnitude of an effect.

Four stages were followed. First, the act of prompt formulation was decomposed into constituent operations by analysing what a well-formed philosophical prompt requires its author to have determined. Second, each operation was mapped onto established constructs in critical thinking, metacognition, and cognitive load theory, with the mapping tested for whether the relation is analogical or constitutive. Third, the implications of the mapping





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for obsolescence were derived. Fourth, the account was subjected to four anticipated objections (Section 5.2), the strongest of which is treated at length.

Limitations of the method. Conceptual analysis establishes coherence, not efficacy. The theses advanced are **hypotheses**; a verification design is proposed in Section 5.3.

4. RESULTS

4.1. Decomposition: four operations

Analysis of what a well-formed philosophical prompt requires its author to have settled yields four operations.

Operation 1 — Problem articulation. The author must convert an inchoate difficulty into a statable question. This requires disambiguating the concept at issue, delimiting scope, and distinguishing the question asked from adjacent questions. *Corresponding construct*: interpretation and analysis in the expert consensus [2]; the conversion of felt difficulty into a problem in Dewey's account [1].

Operation 2 — Perspective specification. The author must determine from which standpoint, or against which tradition, the response should be framed. This presupposes knowing that the terrain is contested and that positions differ. *Corresponding construct*: consideration of alternative perspectives [3]; recognition of a debate's structure.

Operation 3 — Output-type specification. The author must determine what kind of result would satisfy the aim: an objection, a distinction, a classification, a source, a reconstruction. This is the operation that requires an epistemic aim rather than merely a topic. *Corresponding construct*: metacognitive knowledge of one's own goal [4]; goal-setting in self-regulation [5].

Operation 4 — Evaluative revision. The author must appraise the response — for relevance to the aim, for soundness, for evasion — and reformulate accordingly. This closes the loop and typically dominates the interaction. *Corresponding construct*: evaluation and self-regulation [2]; metacognitive monitoring [4].

Table 1 presents the mapping.

Table 1. Prompt operations and their corresponding philosophical-cognitive constructs

Operation	What it requires the author to determine	Corresponding construct	Analogical or constitutive?
Problem articulation	What exactly is being asked; what is excluded	Interpretation, analysis [2]; problem formation [1]	Constitutive
Perspective specification	That the terrain is contested; from where to ask	Alternative perspectives [3]	Constitutive





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Operation	What it requires the author to determine	Corresponding construct	Analogical or constitutive?
Output-type specification	What kind of result satisfies the aim	Metacognitive goal knowledge [4; 5]	Constitutive
Evaluative revision	Whether the response served the aim; what to change	Evaluation, self-regulation [2; 4]	Constitutive

4.2. The constitution thesis

The final column carries the argument, and its content should be made explicit rather than asserted.

A relation is **analogical** if the two activities share structure while remaining distinct — chess resembles strategic reasoning without being it. A relation is **constitutive** if performing the one is *thereby* performing the other, under a different description.

The four operations stand in the latter relation. Consider Operation 1. To articulate a philosophical problem is to disambiguate a concept and delimit a question. There is no further act of philosophical analysis that the student must perform in addition; the disambiguation **is** the analysis, described in the vocabulary of prompting rather than the vocabulary of philosophy. The same holds for the remainder: to specify a perspective is to locate a debate; to specify an output type is to identify one's epistemic aim; to revise evaluatively is to evaluate.

Hence the **constitution thesis**:

Prompt formulation in philosophical inquiry is not analogous to philosophical reasoning; it is partially constituted by it. The operations are the same operations, encountered under a technological description.

Two consequences follow, and they run in opposite directions — which is itself informative.

The first is pedagogical opportunity. Teaching prompt formulation in philosophy is not a detour from teaching philosophy; it is one route into it. And it has an unusual property: it **externalises** operations ordinarily hidden. A student's problem articulation is normally invisible, inferable only from the finished essay. In a prompt it is written down, timestamped, and revisable. The prompt is an artefact of reasoning-in-progress — a rare thing in the humanities classroom, and one with obvious diagnostic value.

The second is risk, and it is the mirror image of the first. If the operations are constitutive, then a system that performs them **for** the student removes philosophical work, not clerical work. A model that infers the aim from "explain freedom" has not saved the student effort; it has performed Operations 1 through 3 on their behalf and returned the result. The student receives an answer to a question they never formed.

4.3. The obsolescence-resistance thesis





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The technical account predicts that prompt literacy will fade: as models infer intent more reliably, careful formulation becomes unnecessary.

The constitution thesis predicts otherwise, and the reason is worth stating precisely, because it does not depend on any claim about the limits of machine capability.

The operations concern **the specification of the student's own epistemic aim**. A model can infer *an* aim — a plausible one, perhaps the modal one for that phrasing. What it cannot do is determine what *this* student is trying to achieve, because that is not a fact about the world available for inference. It is a fact about the student, and frequently one the student has not yet settled. When the student has not settled it, there is nothing to infer: the model does not read the aim, it **assigns** one.

This is why capability does not dissolve the competence. A more capable model assigns a more plausible aim more fluently. The student, meanwhile, has still not formed one — and now is less likely to notice, because the response arrives polished and apt. Increased capability does not remove the need for aim specification; it removes the **friction that made its absence visible**.

Hence the **obsolescence-resistance thesis**:

Increased model capability does not eliminate the underlying competence. It eliminates the symptom — the bad response — while leaving the deficit, and in doing so makes the deficit harder to detect.

An analogy clarifies the structure without carrying the argument. A calculator does not eliminate the need to know which operation to perform; it eliminates the arithmetic. A student who does not know whether to divide or multiply is not helped by a faster calculator — and if the calculator guesses, the student's confusion is **concealed** rather than resolved. Prompt literacy occupies the position of knowing which operation to perform, not the position of performing it.

4.4. Implications for assessment

If the constitution thesis holds, prompt formulation becomes assessable as philosophical work rather than as technique — and the artefact required for assessment is already produced in the ordinary course of the interaction.

Table 2 offers provisional criteria. It is advanced as a starting point for development and validation, not as a finished instrument.

Table 2. Provisional criteria for assessing prompt formulation as philosophical-cognitive competence

Operation	Low	Adequate	High
Problem articulation	Topic named ("explain X")	Question stated, scope loose	Question precise; concept disambiguated; adjacent questions excluded





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Operation	Low	Adequate	High
Perspective specification	Absent	A standpoint named	Position located within a debate the author can characterise
Output-type specification	Absent — any response accepted	Type named (“give an objection”)	Type specified with a reason (“the strongest objection, to test premise 2”)
Evaluative revision	Response accepted as given	Reformulation on dissatisfaction	Response appraised against the aim; revision targets a diagnosed deficit

Two features distinguish this from prompt-engineering rubrics. First, the criteria say nothing about phrasing, format, or model-specific technique — a well-formulated prompt in this sense is well formulated for any model, and for a human interlocutor. Second, the evidence is a **trace of reasoning over time** rather than a finished product, which supports formative use in a way essays do not.

5. DISCUSSION

5.1. Theoretical contribution

Three contributions are advanced. The constitution thesis relocates prompt literacy from technical proficiency to curricular content, with an argument rather than an assertion. The obsolescence-resistance thesis explains why the competence survives capability growth without appealing to limits on what machines can do — its warrant is that epistemic aims are facts about learners, not features of the world. And the reconception of prompts as artefacts of reasoning-in-progress supplies a form of evidence the humanities classroom has historically lacked.

5.2. Objections and responses

Objection 1: “This is over-intellectualisation. Most prompting really is technique — formats, delimiters, few-shot examples.” Granted for the general case, and the scope of the thesis should be stated plainly: it concerns **inquiry prompts** in a discipline where problem formation is itself the object of study. Prompting a model to reformat a table is technique. The two are not in competition; they are different activities sharing a name.

Objection 2: “If models will soon infer intent reliably, the thesis is a rearguard action.” This objection assumes what Section 4.3 denies. The model infers a plausible aim, not the student’s aim — and where the student has none, inference has no object. What improves is the fluency of the assignment. The deficit persists and becomes less visible, which is worse than the status quo, not better.

Objection 3 (the strongest): “The operations are constitutive of inquiry in general, not of prompting. You have shown that philosophical inquiry has structure, then noticed that prompts reflect it. Nothing follows about prompting.” This objection deserves care,





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because it is substantially correct — and the response is to concede the premise and deny that it damages the thesis. The claim is not that prompting is a special cognitive activity. It is the reverse: prompting is **not** special, and that is the point. If prompt formulation recruits the same operations as inquiry, then two things follow that the technical account denies. First, prompting cannot be quarantined as a technical module, because there is no technical residue to quarantine. Second — and this is the substantive addition — prompting **externalises** those operations in a durable, inspectable artefact. Inquiry has always had this structure; what is new is that a portion of it is now written down as it happens. That is a claim about evidence and assessment, and it does not require prompting to be cognitively distinctive.

Objection 4: “Prompts are shaped by model quirks, so the artefact measures accommodation to a particular system rather than reasoning.” Partly granted, and it constitutes the main threat to the assessment scheme’s validity. The response is that Table 2’s criteria are deliberately specified at the level of aim and structure rather than phrasing — a prompt scoring high there would score high addressed to a human. Whether this separation survives contact with practice is an empirical question, and it is the first thing the verification design should test.

5.3. Verification design

The theses are hypotheses. Three studies are proposed, in order of dependence.

Study 1 — Construct validity. Do prompt-formulation scores (Table 2) correlate with independent measures of philosophical reasoning quality (essay rubrics, validated critical thinking instruments)? The constitution thesis predicts substantial correlation. A null result would falsify it directly. This study also addresses Objection 4: if scores are dominated by model-specific accommodation, correlation with model-independent measures should be weak.

Study 2 — Instructional effect. Does explicit instruction in prompt formulation, framed as philosophical work, improve philosophical reasoning as measured **without a model present**? The delayed, model-absent measure is essential: it operationalises the distinction between capability *with* a tool and capability *from* having used it, and it is the only design that can distinguish learning from accommodation.

Study 3 — Capability sensitivity. Do students working with a higher-capability model show weaker aim-specification over time than students working with a lower-capability model? The obsolescence-resistance thesis makes an unusual prediction here — that *better* models may produce *worse* formulation — and this is the sharpest available test of it. A finding in the opposite direction would count decisively against the thesis.

Ethics. Informed consent; confidentiality; provision of the optimal condition to all participants at completion.

5.4. Limitations

The account is theoretical and untested. Its scope is inquiry prompting in philosophy; transfer to disciplines where problems are given rather than formed requires separate





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argument. The four operations are analytically separable but empirically entangled, and the decomposition may not survive factor analysis. Table 2 is provisional and unvalidated. Finally, the account is developed against current interaction paradigms; substantially different modalities — extended agentic interaction, for instance — might alter the analysis, though the underlying point about epistemic aims would seem to persist.

6. CONCLUSION

Prompt literacy is ordinarily classified as a technical skill with a short half-life. This paper has argued that in philosophical education the classification is wrong on both counts.

It is not technical. The act of formulating an inquiry prompt decomposes into four operations — problem articulation, perspective specification, output-type specification, and evaluative revision — each of which corresponds to an established philosophical-cognitive construct. The relation is **constitutive**, not analogical: these are the same operations under a technological description.

It does not have a short half-life. The operations concern the specification of the learner's own epistemic aim, which is a fact about the learner rather than a feature of the world available for inference. Improved capability does not supply the aim; it assigns a plausible one more fluently. The **obsolescence-resistance thesis** holds that capability growth eliminates the symptom while preserving the deficit — and makes it harder to see.

Two consequences follow. For curriculum: prompt formulation belongs inside the philosophy course, taught as philosophical work, not beside it as an induction module. For assessment: the prompt is an artefact of reasoning-in-progress, and the humanities classroom has not previously had many of those.

There is a broader implication. The common worry is that artificial intelligence will make philosophical skills unnecessary. The analysis here suggests something closer to the opposite. Using these systems well requires precisely the operations philosophy education exists to develop — and using them badly is now the easier and less visible failure. The technology does not reduce the demand for philosophical competence. It raises it, and simultaneously conceals the shortfall.

DECLARATIONS

Conflict of interest. The author declares no conflict of interest.

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Ethics approval. This study is theoretical; no human participants were involved and no empirical data were collected.

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