

# What Prompt Engineers Can Learn From Writing Teachers

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## Abstract

Pioneers in any new field find themselves without easy access to more experienced professionals for mentoring and advice. This paper suggests that Generative Artificial Intelligence (GenAI) prompt engineers are in this position now and that they may benefit from turning to those who teach writing to obtain help and guidance. There is extensive overlap between what prompt engineers are learning about what makes a good prompt and the best practices that writing teachers follow in the creation and grading of writing assignments. In this paper, the key elements of an effective GenAI prompt as described in a sample of the literature and public guides are summarized, followed by information on what writing teachers could add about each element. While this short paper is not meant to be an exhaustive list of what writing teachers could contribute to the prompt engineering community, it is hoped that in the future, aspiring and novice prompt engineers will see the science of effective writing instruction as fertile ground for new ideas and practices.

**KEYWORDS:** Generative Artificial Intelligence, GenAI, Prompt Engineering, Best Practices

## 1. Introduction

The professional field of Prompt Engineering (PE) is establishing itself in the US and abroad (Cuofano, 2023; Smith, 2023). These highly-skilled engineers specialize in writing effective prompts which elicit the best work from Generative Artificial Intelligence (GenAI) using Large Language Models. Given that typical starting salaries for these engineering positions can range up to \$335,000 (Gewirtz, 2023) there is naturally strong interest joining this new field. Any novice prompt engineer will find plentiful guides and advice on how to write an effective GenAI prompt. What novice prompt engineers do not yet have is access to more seasoned prompt engineers, because the field is so new that none yet exist. This paper hopes to demonstrate that novice prompt engineers might instead turn to seasoned writing teachers for insight.

A survey of PE literature from industry leaders including OpenAI, Google, and Amazon, as well as privately published research including one paper “coauthored” by ChatGPT and a human researcher (Ekin, 2023), reveals similar lists of key elements for a well-crafted GenAI prompt. These include the need to give the GenAI information about the procedure to follow, the number of times to rewrite or create drafts, the depth of thought to emulate, some examples to emulate, and the voice the GenAI should take on while completing the request.

Below is a summary of these elements, each followed by relevant current best practice in creating writing assignments. It begins with an analysis of what prompt engineers are learning about the key elements of an effective prompt. A full explanation of what writing teachers have learned about each of these elements is far beyond the scope of this short paper, but a summary of one or two main ideas is introduced to help demonstrate what prompt engineers might learn from writing teachers’ experiences.

## 2.0 Key Elements of Prompts

While each researcher or publisher uses different terms and has different suggestions for prompt writing, several common themes are found throughout. These are listed below.

## 2.1 Procedure

There is a consensus in PE guidance that it is important to specify exactly what you want a GenAI to do, and in what order. This includes clearly telling the GenAI both what it needs to output (e.g. how many words to generate, in what format, and in what style) (Korzynski et al., 2023; Ekin, 2023; Amazon, 2023; Shieh, 2023; Google, 2023) and the steps it should undertake in the creation of that output (Korzynski, 2023; Ekin, 2023; Amazon, 2023; Shieh, 2023; Google, 2023). The procedures specified in the prompt should also give the GenAI guidelines to adhere to by telling it both what to do and what not to do (Amazon, 2023; Google, 2023; Harvard University, 2023; Shieh, 2023). Google (2023) goes on to suggest that prompt engineers break all complex GenAI tasks into a sequence of small tasks to help the AI work as its best.

While teachers know it is vital to let student writers know what steps to take and why, prompt engineers might be missing the key element of recursive thinking. Rather than telling students to create, for example, an advertisement for a given product, a teacher might first have the students brainstorm good and weak points about that product and then have the students edit that list to trim it down to just one selling point that they would like to focus on. The teacher might then direct the students to take that selling point and write five dialogues of four lines each which highlight the selling point. The final step might be choosing the strongest dialogue and working backwards from that to flesh out a setting and characters to match. This type of recursive writing is known by teachers to help many students create their best output (Kane, 2000).

Teachers also know that no two students thrive and do their best work using the same process. For this reason, teachers normally teach more than one procedure and let the students decide how to go about completing each assignment (Graham, 2019). It seems plausible that the different GenAIs or even different instances of a single GenAI might produce their best work differently and should thus be given options, constraints, and leeway as they go about tasks.

## 2.2 Rewrites

In the GenAI space, several authors suggest that we iterate as we develop our prompts. Korzynski et al (2023) suggest that we “manage interaction,” while Amazon (2023) recommends that we “experiment and refine the prompt” and Harvard University (2023) says we should “build on previous prompts” over time. While these are all examples of iteration, they are iteration done by the prompt engineer, not the AI. The PE literature itself focuses on how the prompt engineer should create several drafts of each prompt, but misses the idea that the GenAI should be doing this as well.

Writing students are often asked to create several drafts and incrementally improve them as they work on an assignment. Writing teachers for centuries have, in turn, been investigating how much to ask each student to do in each draft and how to give them feedback between each draft. That feedback can be oral or written, from the teacher or a peer, and be given with or without a rubric. It is likely then that prompt engineers would see some improvement in their AI’s output by introducing drafting with feedback and revision. It seems plausible that a prompt engineer might even take advantage of GenAI’s ability to instance itself to create multiple instances which give feedback to each other, possibly with a rubric.

## 2.3 Depth of Thinking

The PE guides suggest we should pay attention to the depth of the questions we ask the GenAI to answer. However, there is not yet much consensus in the literature about what these levels are, how many there are, or how they should be used. Ekin & ChatGPT (2023), defined two “systems of thinking” that could be requested of a GenAI. They define “System One questions” as those requiring “quick, intuitive, or pattern-recognition-based answers” and “System Two questions” as those which also require “more deliberate, analytical, or complex problem-solving” (Ekin, 2023, p 5). Ekin & ChatGPT go on to suggest asking System One questions to generate topics and larger ideas and to then use System Two questions to further narrow in on a final product.

Most PE research uses the term “Level” to describe this idea, such as Heston and Khun (2023), who list three levels of depth for prompts. They define “Level One” as a simple question, with “Level Two” adding some context and “Level Three” adding examples. The inclusion of examples is recommended by most

guides, but not typically as part of depth of thinking. These levels are not entirely consistent with the depth of thought that the GenAI is to emulate, and rather describe how contextualized the thinking is to be. Writing teachers have discovered these to be fundamentally different measurements.

In teaching, one of the key skills any teacher develops is knowing how to adjust, sometimes on the fly, the depth of a question to best match the depth of thinking that the learners are ready for (Gottschalk & Hjortshoj, 2004). One common framework for assessing the depth of thought involved in a question is Costa's (2001) Three Levels of Questioning. Costa describes "Level One" questions as simply requiring the learner to gather information already given in a text, e.g. "What is the name of the new character introduced in Chapter Three?" Costa describes "Level Two" questions as those which require that the learner process information in some way, e.g. "Why do you think Mark didn't get along with Masaya in Chapter Two?" Finally, "Level Three" questions ask the learner to apply information to a task, e.g. "Read Chapters Three & Four and plan a dream weekend vacation for Mark based what he tells Masaya." In this sense, almost any well-written GenAI prompt is a Level Three question. While writing teachers normally require their students to complete Level Three questions at the end of a unit or assignment, there are still many uses for Level One and Level Two questions as the students work towards that level of mastery. After all, one can't apply information to a task if one hasn't yet located and analyzed it.

One of the most common uses of a writing assignment is as a type of summative evaluation (Beard, 2022). These prompts necessarily involve what writing teachers call "higher order thinking skills" (Anderson & Krathwohl, 2001), such as analyzing and creating, rather than "lower order thinking skills" (Anderson & Krathwohl, 2001) such as remembering and recognizing. The questions writing teachers give grades for normally involve some element of creative thinking to correctly gauge the learners' developing skills. To this end, Patterson (2022) recommends that all assignments be presented to students as problems to be solved, rather than information to be remembered. Reynolds et. al., (2020) go further, and list metacognition, meaning reflecting about how well one is learning something, as an essential characteristic of an effective writing assignment. They specify that effective writing prompts should include metacognitive elements such as "planning what to write, monitoring the development of the narrative, and evaluating the clarity of one's own writing" (p. 12,577).

The writing teacher's advice for novice prompt engineers might be to start with Level One and Two questions as you work towards guiding the GenAI towards Level Three mastery. Then, after giving the AI the Level Three prompt, be sure to include some element of evaluative metacognition. This process also seems likely to be made easier by the adoption of Costa's 2001 three levels of questioning framework

## 2.4 Examples

The PE research is clear that it is sometimes best to give a GenAI examples of the type of product you want, and sometimes best not to. A balance must be struck between giving the GenAI too few examples to emulate and giving it so many that it begins to be constrained as it attempts to emulate all of them (Amazon, 2023). Google (2023) and Shieh (2023) both suggest it is best to start by giving the GenAI no example to work from, called a "Zero-Shot" or "Direct Prompt" to generate the widest possible range of answers to the question. Once this wide net is cast, both Google and OpenAI suggest going back and providing a small number of examples, called a "One-Shot", "Few-Shot", or "Multi-Shot" prompt to help the GenAI narrow down its thinking and begin to conform to whatever format the prompt engineer wants. One reason this multi-stage method is thought to produce better results is because it helps GenAI emulate one central voice. While this can, at first, seem similar to drafting with feedback and revision, most of the examples in the research involve entering the same prompt again and again, though with more examples, and do not get much incremental improvement via drafting and revision. Furthermore, almost all of the research seems to suggest giving the Gen AI examples to emulate without much guidance on what to emulate within those examples. Writing teachers have discovered this to be a less effective practice.

In teaching, learners are often stretching their knowledge beyond their experience, and can sometimes get lost because of this. It would be very difficult for a student in a writing class to create a newspaper article, a motivational business email to subordinates, or a movie trailer if the structure, format, and

language used in each of these cases was wholly unfamiliar. Writing education literature has spawned an entire field of research called Genre Studies to tackle the tricky work of teasing out conventions and norms.

In a popular Genre Studies paper, Dean (2008) advised that students should be provided many examples of each genre they are to write to, but that simply giving students the examples was not enough. Students need to be directed to notice and record the following areas:

- Content: What topics, facts, or ideas are typically included or excluded?
- Structure: How are these topics, facts, and ideas usually organized? Is the organization hierarchical?
- Format: How are these topics, facts and, ideas usually presented? Via what media are the most commonly communicated? In what format? Are there typical fonts, amounts of text, or duration of videos?
- Language: Are these topics, facts, and ideas usually communicated in a written or spoken style of language? How formally are they presented?
- Sentences: What kinds of sentences are used? Are there common terms, sentence structures, or sentence stems?

Figure 1: Elements of Genre, Adapted from Dean (2008)

Dean (2008) builds on the earlier work of Glass (2004), who recommends that any rubric used to evaluate a writing assignment should include the ideas, organization, word choice, sentence fluency, and genre expectations the teacher is looking for. While Glass is recommending that the students be given the rubric by which they will be evaluated, Dean is recommending that the students seek to discover all of these elements from real examples. Thus, Dean’s approach seems better aligned to the work prompt engineers are doing.

Teachers long ago learned to be careful not to accidentally imply to their learners that they have to produce texts exactly like the given examples. Genre Studies analysis, such as presented in Dean (2008), is one way that teachers can strike a balance between giving examples as guidance and not stifling their learners by implying they produce work nearly identical to the examples. It seems likely that prompt engineers would benefit from directing GenAIs to perform some version of a genre analysis on any provided samples.

## 2.5 Voice and Context

Generative AI is often trained on a wide range of materials, including a span of different authors’ voices and intents. It can thus be difficult for a GenAI to know if it is being prompted to write a light-hearted summary of an event suitable for publication in a children’s magazine or a factual but evocative summary of those events suitable for catching the attention of adults reading an online newsfeed. For this reason, the PE research is clear that it is vital to include information about the intended voice or context in a GenAI prompt. While Amazon (2023) only suggests adequate context be given, Google (2023) suggests that the first things prompt engineers should do is define the voice and context they would like the GenAI to take on. Harvard University (2023) specifically suggests telling the GenAI to “Act as if...” (p. 1) as part of every prompt to activate a certain voice or context. However, while the PE research is clear that voice is important, it doesn’t usually involve context or rhetorical purpose.

In teaching, learners are often interactively motivated, meaning they are putting effort into their learning and education in order to take on a new role. High school students might be motivated by the idea of being young scientists. Workers might be motivated to work hard to take on the title and identity of “IT expert” or a “specialist.” Teachers, then, need to know when and how to specify what role, identity, or persona their learners should adopt when completing a writing assignment (Barry & Orth, 2013; Wargo, 2020). However, teachers know that this isn’t enough. Telling a student they are to write as if they are a chemist,

without telling them who this chemist is writing to and why they are writing, with an “authentic purpose,” is ineffective (Kane, 2000; Wargo, 2020).

To have authentic purpose, the activity must serve a genuine need to communicate information to someone who wants or needs it (Duke et al., 2010). Writing teachers start by giving the students examples and having them analyze specific patterns such as word choice, grammatical structure, choice, sentence length, and even textual formatting. The final Level Three question though would include context, intended audience, and communicative purpose. Only by knowing all of these elements can we expect a student to produce their best work. An example is below:

You are a social media copywriter for a popular women’s clothing store. Your manager has asked you to come up with a tweet to promote a big end-of-season sale happening this weekend. Your target audience is young women aged 16—24 who follow the store’s social media accounts. Your goal is to craft an eye-catching, persuasive tweet that will grab their attention, get them excited about the sale, and drive them to visit the store’s website or physical location to take advantage of the discounts. Consider highlighting specific sale items, percentages off, or a sense of urgency to get them to act quickly. Keep your tone conversational and on-brand for the store. You have 280 characters to convince your followers they can’t miss this sale.

Figure 2: An Example of a Writing Prompt Including Context

### **Conclusion**

This short paper has surveyed the PE literature and found five key elements of an effective prompt: Procedure, Revisions, Depth of Thought, Examples, and Voice. It then showed a small amount of what writing teachers know about each of these elements based on decades or sometimes centuries of research and practice, in the hope that some of the gaps in the PE literature could be filled.

It is further hoped that novice prompt engineers might find some value in the advice of writing teachers and that PE literature in general will begin to dive into the wealth of writing education literature for new ideas and best practices.

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