**Examples of Frameworks for Better Prompting**

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| **Framework** | **Description** | **Medical Education Example** |
| **P.A.R.A Framework** | Focuses on the purpose, audience, AI's role, and specific action to be taken. | **Purpose**: Create a collaborative group activity for teaching students about drug interactions. **Audience:** Medical students.  **Role:** AI as a pharmacology instructor.  **Action:** Design an activity where students analyze case studies for drug interactions and discuss the mechanisms involved. |
| **S.T.E.A.P Framework** | Provides context, defines the task, gives an example, specifies the action, and parameters. | **Situation:** Students learning about diagnostic imaging techniques.  **Task:** Create a case study activity.  **Example**: Provide a sample case.  **Action:** Design a step-by-step activity with questions.  **Parameters:** Activity duration should be 45 minutes and involve group discussion. |
| **C.R.E.A.T.E. Framework** | Includes context, AI's role, end goal, audience, tone, and examples. | **Context:** Advanced epidemiology course.  **Role:** AI as an instructional designer.  **End Goal:** Develop an activity on disease outbreak investigation.  **Audience:** Public health students.  **Tone:** Engaging and informative.  **Examples**: Provide a real-world outbreak scenario and guiding questions for analysis. |

[Crafting Better Prompts with Prompting Frameworks](https://anitasamuel.substack.com/p/crafting-better-prompts-with-prompting?utm_campaign=post&utm_medium=web&triedRedirect=true)

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**Examples of Types of Intentional Prompts**

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| **Prompt Types** | **Description** | **Purpose** | **Medical Education Example** |
| **Supervised Prompt** | Designing prompts based on clear examples and defined outcomes. | To generate specific, expected responses. | Provide a multiple-choice question on cardiovascular physiology based on given guidelines. |
| **Unsupervised Prompt** | Creating prompts without predefined answers, allowing the model to explore patterns. | To discover underlying knowledge or associations. | Explain the possible differential diagnoses for a patient presenting with chest pain. |
| **Few-shot Prompt** | Giving a small number of high-quality examples within the prompt. | To guide the model towards desired outputs. | Create three sample SOAP notes for patients with different neurological disorders. |
| **Zero-shot Prompt** | Providing a prompt without any examples, relying on the model's general knowledge. | To test the model's generalization abilities. | Generate a treatment plan for a 60-year-old patient with newly diagnosed diabetes mellitus. |
| **Iterative Prompt** | Refining prompts based on the model's outputs through an iterative process. | To improve the accuracy and relevance of responses. | Start by asking for the mechanism of action of antibiotics, then refine the prompt based on responses. |
| **Prompt Chaining** | Breaking down complex prompts into simpler, linked prompts. | To address complex tasks step-by-step. | Begin with asking for patient history, then progress to diagnostic tests, and finally to a treatment plan. |

Microsoft Copilot. (2025). Types and examples of prompt engineering. Retrieved from Microsoft Copilot

**Examples of Types of Common Biases in AI Output**

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| **Type of Bias** | **Description** | **Medical Education Example** |
| **Selection Bias** | Occurs when the dataset is not representative of the population leading to skewed outputs. | Training a diagnostic AI primarily on data from urban hospitals resulting in poor performance for rural patients. |
| **Confirmation Bias** | AI influenced by the preconceptions of its developers leading to biased outcomes. | An educational AI system favoring certain teaching methods over others based on developers' preferences. |
| **Algorithmic Bias** | Biases inherent in the algorithms causing unfair outcomes. | A learning platform that grades assignments more leniently for certain demographics due to flawed algorithm design. |
| **Historical Bias** | Arises when AI models perpetuate biases present in historical data. | An AI-based admission system that mimics past biases in selecting candidates favoring certain groups over others. |
| **Exclusion Bias** | Bias from underrepresentation or exclusion of certain groups in training data. | Clinical guidelines and education materials primarily based on data from male patients leading to gaps in female patient care. |
| **Measurement Bias** | Occurs when training data includes inaccuracies leading to skewed AI outputs. | Educational content that overemphasizes certain conditions due to inaccurate prevalence data leading students to misdiagnose. |
| **Interaction Bias** | Bias from the way users interact with AI influencing its learning and outputs. | An AI tutor that adapts to the dominant study habits of early adopters disadvantaging students with different learning styles. |
| **Anchoring Bias** | AI relying too heavily on initial information affecting subsequent outputs. | A clinical decision support system that heavily weighs initial symptoms potentially overlooking later more critical symptoms. |

Microsoft Copilot. (2025). Common biases in AI output and their examples in medical education. Retrieved from Microsoft Copilot



