Creative CRAFT: A structured framework for creativity-driven prompt engineering in generative AI

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Abstract

This study introduces the Creative CRAFT Framework, an advanced prompt engineering model designed to systematically enhance both the quality and creativity of outputs generated by large language models. Based on a sample of 100 participants, comparative analyses reveal that prompts created using the Creative CRAFT Framework significantly outperform traditional prompting methods across multiple dimensions of output quality. These include task relevance, structural coherence, creativity and novelty, tone fidelity, and format accuracy. The improvements in effect size range from 18.4% to 46.8%, demonstrating the framework's effectiveness in advancing prompt engineering techniques and output quality in large language models (p < 0.0001). Concurrently, user perception assessments reveal elevated levels of usability, clarity, and satisfaction, with particular emphasis on the framework's efficacy in fostering creative expression. Thematic analysis of qualitative feedback corroborates these quantitative outcomes, elucidating the framework's modular design, flexibility in component integration, and the critical role of the Creative Direction element in eliciting imaginative and contextually nuanced responses. The framework's six components Context, Role, Action/Task, Format, Tone/Steps/Constraints, and Creative Direction are organized within a non-linear, circular schema that prioritizes completeness over sequential order in prompt construction. This structural configuration enables user adaptability and purposeful prompt formulation, facilitating a calibrated balance between methodological rigor and creative freedom. Collectively, these findings affirm the Creative CRAFT Framework as a significant contribution to prompt engineering, delivering a robust, user-centric methodology that enhances the expressiveness, relevance, and overall quality of AI-generated content.

1. Introduction

Why do some student prompts generate rich, insightful responses from AI tools like ChatGPT, while others produce vague or generic answers even when the questions seem similar? This question is increasingly relevant in university classrooms, where generative AI is widely used for academic writing, brainstorming, and problem-solving [1]. Both instructors and students observe that the quality of AI-generated content depends less on the AI itself and more on how the prompt is crafted. Yet, despite the growing use of these tools, clear and structured guidance on effective prompt design especially for academic tasks that require creativity, critical thinking, and an appropriate tone remains limited.

Current prompt engineering methods, such as Chain-of-Thought, Zero-Shot, and Few-Shot prompting, focus primarily on logical reasoning or step-by-step problem solving [2]. While effective for procedural outputs, these approaches often fall short when applied to creative tasks such as reflective essays, lesson plans, or imaginative scenarios, where tone and nuance are crucial. As AI becomes an integral part of academic work, there is an urgent need for a prompt framework that balances clarity and structure with the flexibility to support creativity and expression.

Beyond academic quality, promoting efficiency is critical due to the increasing environmental costs associated with generative AI. Large-scale AI models require immense computational power, which in turn generates substantial heat and demands significant cooling resources [3]. In California and other regions, AI data centers consume vast amounts of water for evaporative cooling, raising sustainability concerns [4, 5]. A recent review highlights that water consumption depends heavily on workload design and data center location; however, public transparency remains limited [6, 7]. Furthermore, longer prompts not only increase resource use but also risk exceeding token limits in AI systems, causing them to "forget" earlier content and respond incoherently in extended interactions [1].

To address these challenges, this study introduces the Creative CRAFT Framework, a novel prompt engineering approach that combines structure with creative guidance. CRAFT stands for Context, Role, Action/Task, Format, Tone, Steps, and Constraints, with an additional emphasis on Creative Direction to explicitly promote innovation and imaginative thinking. This human-centered framework enables users, students, educators, and researchers to craft prompts that are clear, expressive, personalized, and adaptable to diverse academic objectives.

The purpose of the study is to develop, implement, and evaluate the Creative CRAFT Framework using both quantitative and qualitative methods. It compares the framework's effectiveness against traditional prompting techniques in enhancing AI output quality and creativity. Additionally, it explores users' perceptions regarding usability, clarity, and creative potential. Through this research, the aim is to empower academic communities to harness the full cognitive and creative potential of generative AI while promoting more sustainable and efficient AI interactions.

In summary, this study addresses the question: How effective is the Creative CRAFT Framework in enhancing the quality and creativity of AI-generated responses compared to existing prompt methods? The main objectives are to design and refine the framework, compare output quality, assess user experience, and identify improvements for prompt formulation and AI utilization.

2. Literature Review

2.1. Prompt Engineering: Origins and Evolution

Prompt engineering has emerged as a critical technique for optimizing the performance of large language models (LLMs), such as GPT-3 and GPT-4 [8]. It involves crafting inputs (prompts) in a way that guides the model to produce more accurate, relevant, or creative outputs. Early strategies primarily focused on zero-shot and few-shot prompting, where examples were embedded in the prompt to improve understanding [8, 9].

Later developments introduced more explicit reasoning techniques, such as Chain-of-Thought (CoT) prompting, which encourages models to generate intermediate reasoning steps [2]. This approach significantly improved performance in complex logical and mathematical tasks but was limited in open-ended, creative tasks.

2.2. Existing Prompting Methods and Frameworks

Several prompt engineering methods have been proposed, each serving different purposes:

Table 1.
Existing Prompting Methods and Frameworks.

Prompt Engineering Method	Author(s)	Year	Description
Zero-Shot Prompting	Brown et al. [8]	2020	No examples; relies on the model's generalization ability.
Few-Shot Prompting	Brown et al. [8]	2020	Includes labeled examples to guide model output.
Chain-of-Thought (CoT)	Wei et al. [2]	2022	Promotes logical step-by-step reasoning in responses.
Tree-of-Thought (ToT)	Yao et al. [10]	2023	Structures reasoning as a tree to explore multiple solution paths.
ReAct (Reason+Act)	Yao et al. [11]	2022	Combines reasoning with actions for agent-based tasks.
Auto Prompt	Shin et al. [12]	2020	Uses gradient-based techniques to generate optimized prompts automatically.
Prompt Tuning / Prefix Tuning	Lester et al. [13]	2021	Learns soft prompts to fine-tune LLMs for specific tasks.
Automatic Prompt Engineer (APE)	Zhou et al. [14]	2022	Automates prompt design via large-scale testing.
Algorithm of Thoughts	Anonymous group from Virginia Tech & Microsoft Research [15]	2023	Adds symbolic reasoning through structured search.
Meta-Prompting	Suzgun and Kalai [16]	2024	Uses prompts to dynamically generate or refine other prompts.
Prompt Pattern Catalog	White et al. [17]	2023	Provides reusable templates for common AI tasks.

While these methods improve task-specific performance, they often focus on reasoning accuracy or domain-specific tasks, with minimal emphasis on human-centered, creative communication a gap this research seeks to address.

2.3. Creativity and Human-Centered Prompting

Few existing prompt engineering methods directly address creativity or the human intention behind the prompt. Research by Lubars and Tan [18] highlighted how vague or underspecified prompts often lead to underwhelming AI outputs. Similarly, Hartmann and Hartmann [19] emphasized the importance of prompt clarity and tone in educational and communication contexts. Yet, there remains limited guidance on designing prompts that combine structural rigor with creative flexibility.

According to van der Plas et al. [20], effective AI prompting requires an understanding of the audience, tone, and task not just command structure. This supports the need for a framework that can formalize prompt creation while embracing contextual nuance and creativity.

2.4. Framework-Based Approaches in Prompt Design

Some efforts have been made to organize prompt design into frameworks. For example, Schick and Schütze [21] introduced a "Pattern-Verbalizer" method to formalize prompt construction for classification tasks. However, such methods are task-specific and are not adaptable for more expressive or creative outputs.

In education, frameworks such as the AI Literacy Prompting Framework [22] have been developed to teach prompt formulation; these tools focus on ethical and interpretive dimensions rather than creative execution. They are useful for educational purposes but lack a modular design that supports diverse, generative outputs.

CRAFT distinguishes itself by offering a modular, creativity-driven structure that considers Context, Role, Action/Task, Format, Tone, Steps, and Constraints components often implicitly used by skilled prompt engineers but not previously formalized into a comprehensive and scalable framework.

2.5. Summary of Gaps in Literature

Despite the rapid evolution of prompt engineering techniques, existing models predominantly emphasize:
    a. Logic-based reasoning (CoT, ToT),
    b. Automation (AutoPrompt, ReAct),
    c. Technical fine-tuning (Prompt Tuning),
    d. and task-specific patterns (Pattern-Verbalizer).

Few methods integrate creative control, emotional tone, and contextual richness into a flexible, repeatable process. The Creative CRAFT framework addresses this gap by introducing a structured, human-centered model tailored for expressive and adaptive prompt engineering, particularly suited for educational, communicative, and imaginative AI applications.

3. Materials and Methods

3.1. Research Design

This study employed a design-based, mixed-methods approach that integrates both quantitative and qualitative methods to develop and evaluate the proposed Creative CRAFT Framework a structured model for creativity-centered prompt engineering in generative AI. Design-Based Research (DBR) was utilized to support the iterative development of

the framework in authentic settings, allowing continuous refinement based on real-world feedback [23]. Additionally, descriptive and comparative research designs were applied to assess their effectiveness in improving prompt quality and creativity [24]. The purpose of this research is twofold: (1) to design and refine a modular, human-centered framework for crafting generative AI prompts that emphasize creative output, and (2) to evaluate its usability, effectiveness, and perceived benefits compared to conventional prompting methods.

3.2. Research Locale and Participants

The study was conducted in an academic setting, involving faculty and graduate students from different State Universities and Colleges (SUCs) in the Philippines, particularly those engaged in AI-assisted instruction, creative writing, and academic research tasks. A purposive sampling method was used to select 100 participants: 50 educators and 50 graduate students with experience in using generative AI tools such as ChatGPT.

3.3. Development of the CRAFT Framework

The Creative CRAFT framework was designed through a review of literature and iterative consultation with AI educators, instructional designers, and prompt engineers. The framework includes the following six components: Creative, Context, Role, Action/Task, Format, and Tone/Steps/Constraints. This enhanced prompt engineering, now titled Creative CRAFT, integrates creativity not just as an emergent trait but as a deliberate design dimension of prompt formulation.

3.4. Data Gathering and Analysis

The research was conducted in three phases. In Phase 1, participants created prompts for four common AI tasks: academic summary, instructional content, creative storytelling, and research assistance, using their usual methods. The AI-generated outputs were collected for baseline analysis. In Phase 2, after a brief training on the Creative CRAFT framework, participants revised their prompts with the new method and resubmitted the same tasks. These outputs were also collected for comparison. Finally, in Phase 3, participants provided feedback through a structured survey and semi-structured interviews to assess their perceptions of prompt quality, clarity, creativity, and usability.

Data collection instruments included a 5-point Likert rubric, completed by expert reviewers to evaluate AI outputs on relevance, coherence, creativity, tone fidelity, and format accuracy. The user experience survey measured ease of use, perceived improvement, and support for creative thinking. Semi-structured interviews explored participants' experiences with the Creative CRAFT framework, focusing on benefits, challenges, and suggestions for improvement.

Semi-structured interviews were conducted using a guide focused on three areas: prompt design and usability, output evaluation, and general feedback. Participants were asked about the most useful aspects of the CRAFT structure, any difficulties applying elements like tone or format, and comparisons with other prompt methods. They also evaluated whether AI responses felt more creative or structured, and how well the AI followed their instructions. Finally, participants shared their willingness to use CRAFT in future work and suggested improvements. Quantitative data were analyzed through descriptive statistics and paired t-tests comparing traditional and CRAFT prompts, while survey results were summarized by frequency and mean scores. Qualitative interview data underwent thematic analysis with manual coding and peer validation, identifying key themes such as usability, effectiveness, creativity support, and educational relevance.

Quantitative data analysis involved descriptive statistics to summarize rubric scores and paired sample t-tests to compare traditional prompts with Creative CRAFT outputs for creativity and quality. Survey responses were analyzed using frequency counts and mean scores. Qualitative data from interviews were analyzed thematically, with manual coding validated through peer review, identifying themes related to usability, effectiveness, creativity support, and educational relevance.

4. Results and Discussion

4.1. Design and Refinement of the Creative CRAFT Framework

The Creative CRAFT framework was initially conceptualized with seven core components: Context, Role, Action/Task, Format, and Tone/Steps/Constraints and subsequently expanded to incorporate a distinct Creative Direction element following pilot testing. Feedback obtained from participants during both the training and evaluation phases facilitated targeted refinements, including:

(a) The integration of exemplar prompts and templates to support novice users;

(b) The introduction of flexibility in the sequencing of components tailored to the specific demands of varying task types; and

(c) Enhanced guidance on articulating the Creative Direction instruction, exemplified by directives such as "Incorporate imaginative metaphors to enhance engagement."

This iterative development process, aligned with the principles of Design-Based Research, underscored the critical balance between structural rigor and creative latitude as both feasible and essential.

Participants consistently reported that the modular architecture of the framework bolstered their confidence and fostered a systematic methodology for interacting with generative AI systems. The notion of creativity embedded within the Creative CRAFT framework transcends mere lexical embellishment or tonal formality; rather, it foregrounds the intentional crafting of content characterized by:

(i)   contextual richness, with outputs tailored to the specific research environment and target audience;

(ii) engaging structural composition, employing narrative techniques, analogies, or vivid exemplars;

(iii) thoughtful nuance, wherein ideas are connected to real-world applications and broader thematic considerations; and

(iv) deliberate design to stimulate reflection and deeper analytical insight.

Collectively, these dimensions position the Creative CRAFT framework as a substantive advancement in prompt engineering, fostering enhanced creative collaboration between humans and AI.
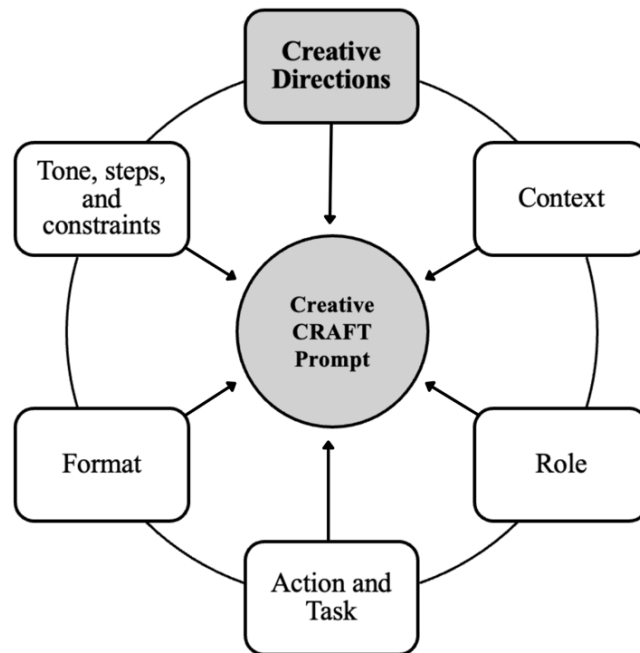
Figure 1.
Creative CRAFT Framework: Creativity-Driven Prompt Engineering in Generative AI.

The figure of the Creative CRAFT Framework is visually structured with a central core labeled "Creative CRAFT Framework," encircled by six distinct but interconnected components: Context, Role, Action/Task, Format, Tone/Steps/Constraints, and Creative Direction. This design communicates not only the functional elements of effective prompting but also the conceptual flexibility that defines the framework's strength. The radial layout metaphorically and practically reinforces that prompting is not a rigid sequence but a modular and integrative process.

Table 2.
Components and Interpretive Discussion of the Creative CRAFT Framework.

Components	Definition	Role in Prompting	Interpretive Insights
Creative CRAFT	The central guiding philosophy of the framework	Serves as the foundation for structured yet imaginative prompt construction	Positioned at the center to emphasize its integrative, modular, and intentional design. It represents prompt engineering as a creative, human-centered act.
Context	The background or setting for the prompt	Grounds the AI in a situation or subject area	Establishes relevance and coherence. Like setting the stage in a play, it provides meaning to the output.
Role	The persona or perspective adopted by the AI	Directs tone, voice, and viewpoint	Empowers users to personalize responses ("act as a teacher" or "write like a lawyer") and fosters audience-appropriate outputs.
Action/Task	The specific instruction or goal of the prompt	Provides a clear objective or task for the AI	Anchors the purpose of the response: summarize, compare, write, explain. Acts as the "verb" of the prompt.
Format	The desired output structure or presentation style	Shapes the deliverable (e.g., list, dialogue, report)	Encourages alignment with audience needs and communication goals. Allows immediate usability of AI outputs.
Tone / Steps / Constraints	The emotional flavor, process breakdown, and boundaries guiding the prompt	Refines how the AI speaks, the logic it follows, and the limits of its output	Blends style with structure. Enhances usability in academic, instructional, and creative domains by controlling formality, sequence, or technical scope.
Creative Direction	Explicit cues for originality, imagination, or genre-specific expression	Invites the AI to be inventive, metaphorical, poetic, etc.	Plays a pivotal role in enhancing output quality. Drives uniqueness and depth by pushing the AI beyond routine or generic responses. Essential in storytelling and ideation tasks.
Figure Layout Insight	Circular with no fixed order	Promotes flexible composition and user freedom	The order doesn't matter; completeness does.

At the center of the figure lies the Creative CRAFT core, representing the heart of the prompt engineering process. This central position emphasizes that prompting is both a strategic and creative act, blending structure with imagination. The word "CRAFT" itself is a backronym, each letter corresponding to one or more key components, but the visual layout deliberately avoids imposing a fixed order, signaling that the framework is non-linear in practice. It serves as a set of ingredients rather than a recipe with a single sequence.

The figure of the Creative CRAFT Framework serves not only as a visual guide but as a pedagogical and cognitive model for prompt engineering. Its radial or circular layout visually communicates flexibility, while the components surrounding the core demonstrate the layered complexity and richness involved in effective prompting. At its center, the framework invites users to see prompting as a creative act of composition, where structure and spontaneity coexist. The inclusion and emphasis on Creative Direction further elevate the framework, ensuring that outputs are not just functional but also imaginative, meaningful, and human-centered.

4.1.1. Sample Prompt Comparison
4.1.1.1. Basic Prompt vs. Creative CRAFT: Prompt about Research Introduction
    Basic Prompt: "Write an introduction for a research paper about climate-resilient agriculture."
Creative CRAFT Framework Prompt:
  (i) Context: This study is situated in a Southeast Asian country where farming communities face heightened vulnerability to climate change impacts, including recurrent flooding and drought.
  (ii) Role: Assume the role of a researcher advocating for sustainable agricultural innovation, addressing both policymakers and academic audiences.
  (iii) Action/Task: Compose the introduction section of a research paper that emphasizes the urgency of adopting climate-resilient agricultural practices in developing nations.
  (iv) Format: Structure the introduction into three paragraphs: the first presents a compelling real-world scenario or statistic; the second frames the research gap and rationale; the third outlines the study's objectives.
  (v) Tone/Steps/Constraints: Maintain an academic, persuasive, and evidence-driven style. Begin with a striking fact or vivid scenario; contextualize global and regional challenges; explicitly articulate the research gap and purpose. Avoid generic claims, such as "climate change is a global issue," unless substantiated by specific data. Refrain from using bullet points.
  (vi) Creative Direction: Employ evocative language that highlights urgency and human impact while preserving academic rigor.

Table 3.
Output Comparison of Basic Prompt and Creative CRAFT Prompt about Research Introduction.

Element	Basic Prompt Output	Creative CRAFT Output
Opening	"Climate-resilient agriculture is an approach to mitigate…"	In the rice paddies of Central Luzon, farmers face the cruel paradox of flood in one season and drought in the next.
Contextual Depth	Vague or absent	Embedded within a regional and socio-economic context
Research Gap	Briefly mentioned, if at all	Clearly articulated as a disconnect between existing practices and policy implementation.
Tone	Neutral, bland	Persuasive, research-focused, and empathetic
Structure	Single general paragraph	Organized into a coherent academic progression with logical transitions.
Creativity	Minimal	Utilizes metaphor, real-world data, and problem framing to engage the reader
Reflection Element	Absent	Encourages consideration of how the introduction might effectively persuade real-world stakeholders

This example clearly illustrates how the Creative CRAFT framework enhances prompt specificity, contextual relevance, structural clarity, and creative engagement, thereby improving the quality and impact of AI-generated outputs.

4.1.1.2. Basic Prompt vs. Creative CRAFT: Prompt about Reflective Essay
   Basic Prompt: "Write a reflective essay about your experience with online learning during the pandemic."
Creative CRAFT Framework Prompt:
   (i)   Context: You are a college student reflecting on how the COVID-19 pandemic transformed both your academic and personal life through the experience of online learning.
   (ii)   Role: Assume the dual role of storyteller and analyst, sharing personal experiences while drawing broader insights applicable to others.
   (iii)   Action/Task: Compose a reflective essay exploring how online learning influenced your academic mindset, daily routines, and emotional well-being.
   (iv)   Format: Structure your essay into three parts: (1) Initial experience and emotional reaction, (2) Key challenges and adaptations, and (3) Lessons learned and personal growth.
   (v)   Tone/Steps/Constraints: The tone is honest, introspective, and hopeful. Begin with a vivid recollection (e.g., your first Zoom class); describe emotional highs and lows using specific anecdotes; conclude with a personal insight or guiding principle. Avoid vague expressions such as "It was hard" or "I learned a lot." Write in paragraphs only; bullet points are not permitted.
   (vi)   Creative Direction: Employ storytelling techniques such as dialogue, imagery, and sensory details to animate your experience and connect it to broader educational or human insights.

Table 4.
Output Comparison of Basic Prompt and Creative CRAFT Prompt about Reflective Essay.

Element	Basic Prompt Output	Creative CRAFT Output
Opening	"During the pandemic, we had to take our classes online. It was very different from normal classes, and I had to adjust a lot."	"I remember the first time I logged into a Zoom class, staring at a screen full of silent black boxes, wondering if this was really how college would be now. The noise of campus hallways had been replaced by the quiet hum of my electric fan and yet, this digital silence would teach me the loudest lessons."
Body	"I had a hard time with the internet connection, and it was difficult to focus at home. However, I learned how to manage my time and study independently."	"At first, I felt disconnected and even invisible. The screen was both a barrier and a mirror; I saw myself more often than I saw others. But slowly, I learned to adapt. I created a daily ritual: coffee, calendar, camera on. I found power in presence, even if it was pixelated. I leaned on classmates more than ever, not in proximity but in solidarity."
Conclusion	"In the end, I learned that even though online learning is hard, it is possible to adjust and still learn new things."	"Now, as I walk through the halls of our reopened campus, I carry more than just books; I carry the quiet confidence of someone who has survived solitude. Online learning taught me not just about coursework but about resilience, connection, and the surprising ways we grow when we're forced to pause."
Tone	Flat, factual	Reflective, poetic, emotionally resonant
Structure	One-paragraph summary	Three clearly defined sections: vivid opening, emotional journey, and insightful conclusion
Creativity Level	Low factual narration with basic reflection	High incorporates metaphor, imagery, pacing, and distinctive voice
Emotional Depth	Surface-level mentions difficulty and adaptation	Deep captures feelings of isolation, transformation, and emotional learning
Audience Engagement	Low basic language and abstract descriptions	Highly relatable moments, vivid emotions, and compelling narrative
Use of CRAFT	Not applied	Fully implemented: storytelling, sensory detail, structured reflection, appropriate tone, and creative constraints observed.

This comparison demonstrates the effectiveness of the Creative CRAFT framework in elevating prompt specificity, encouraging rich narrative construction, and fostering emotional resonance, thereby producing AI-generated outputs that are both engaging and insightful.

4.1.1.3. Basic Prompt vs. Creative CRAFT: Prompt about Reflective Essay
Basic Prompt: "Write a motivational speech for graduating students."
Creative CRAFT Framework Prompt:
   (i) Context**:** This is for a university graduation ceremony in 2025, addressing a class that has experienced both online and face-to-face education due to the pandemic.
   (ii) Role**:** You are a university president who is deeply empathetic, visionary, and inspiring.
   (iii) Action/Task**:** Deliver a heartfelt and powerful motivational speech.
   (iv) Format**:** A 500-word speech written in paragraphs with a clear opening, body, and closing.
   (v) Tone/Steps/Constraints**:** Uplifting, warm, reflective, and future-focused. Begin with a personal story or metaphor; reflect on the students' unique challenges; include an inspiring quote; end with a call to action. Avoid clichés like "the sky's the limit" or "dream big"; make it original and culturally relevant.
   (vi) Creative Direction**:** Use poetic language, striking imagery, and emotional appeal to deeply connect with listeners.

Table 5.
Output Comparison of Basic Prompt and Creative CRAFT Prompt about Script and Speech

Element	Basic Prompt Output	Creative CRAFT Output
Opening	Generic greeting and encouragement: "Good morning, graduates. Today marks the beginning of a new chapter…"	Vivid, emotional scenario: "When the world paused in 2020, so did your classrooms… Your resilience became the curriculum no syllabus could teach."
Structure	One paragraph, general advice, no clear sections	Clear structure: opening (story), body (challenges and reflections), closing (call to action)
Tone	Neutral, polite, and motivational	Warm, uplifting, reflective, and visionary
Language	Clichéd phrases: "follow your dreams," "make a difference," "the future is in your hands."	Poetic, metaphorical: "You turned silence into solidarity, absence into adaptation, and challenge into change." Quoted Amanda Gorman for added literary resonance.
Audience Connection	Minimal could apply to any audience	Deeply tailored to 2025 graduates who experienced hybrid learning and global disruption
Creativity	Low standard AI output	High imagery, emotion, and metaphor make it engaging and memorable
Use of Role	Not defined	Speaker positioned as a university president, offering authority and personal insight
Constraints Avoidance	No filtering of overused phrases	Avoided clichés explicitly; used original, meaningful language
Reflection Element	None	The message was carefully crafted to resonate with both students and faculty in the post-pandemic context.
Impact	Polite but forgettable	Emotionally resonant, inspiring, and audience-specific

4.1.1.4. Traditional Prompt (Chain-of-Thought – CoT) vs. Creative CRAFT Framework

Traditional Chain-of-Thought (CoT) Prompt: "An AI system used in job applications tends to favor male applicants over female ones. Is this ethical? Think step by step before you answer."

Creative CRAFT Framework Prompt:

    (i) Context: You're addressing a real-life scenario where an AI recruitment tool was found to rank male candidates higher for tech roles.

    (ii) Role: You are an AI ethics researcher writing an opinion editorial for a university journal.

    (iii) Action/Task: Analyze the ethical dilemma and provide a reasoned argument on the use of AI in hiring.

    (iv) Format: 400-word analytical essay with introduction, body, and conclusion.

    (v) Tone/Step/Constraints: Critical, reflective, and persuasive. Begin with a relatable anecdote or statistic; outline ethical principles; critique the AI decision-making process; propose solutions. Avoid generic language like "bad" or "unfair"; support claims with logic or references.

    (vi) Creative Direction: Use analogies or metaphors to explain bias and human-AI interaction in hiring.

Table 6.
Output Comparison of Traditional Prompt (CoT) and Creative CRAFT Prompt.

Element	CoT Output	Creative CRAFT Output
Opening Approach	Direct logical reasoning: "First, we need to consider…"	Vivid anecdote with emotional framing: "Imagine you submit a resume… it quietly marks you down…"
Tone	Neutral and analytical	Persuasive, reflective, and empathetic
Depth of Insight	Clear, basic ethical reasoning	Deep analysis of societal implications, historical context, and systemic bias
Creativity Level	Low focuses on linear logic	High uses metaphor, narrative devices, and rhetorical questions
Engagement Level	Moderate logical but not emotionally compelling	Highly emotionally resonant and intellectually provocative
Structure of Output	Step-by-step moral reasoning	Intro (hook) → Ethical critique → Argument → Reflective conclusion
Use of External Evidence	None	References real-world case (Amazon AI hiring bias), integrates ethical concepts
Overall Effectiveness	Functional for logical tasks but limited in expressive depth	Highly effective for nuanced, real-world applications where persuasion, context-awareness, and emotional intelligence matter

This example highlights key differences between the traditional Chain-of-Thought (CoT) prompt and the Creative CRAFT framework in AI prompt engineering. The CoT prompt directs the AI to follow logical, step-by-step ethical reasoning, producing clear but somewhat mechanical and emotionally flat responses. It prioritizes functional correctness but lacks depth in engagement and creativity.

In contrast, the Creative CRAFT prompt situates the AI within a specific context and role, encouraging a more nuanced, persuasive, and empathetic response. By integrating creative elements such as vivid anecdotes, metaphors, and structured reflection, the CRAFT prompt generates richer, more compelling outputs that connect with readers intellectually

and emotionally. It balances analytical rigor with expressive storytelling, making the AI's argument more relatable and impactful.

This comparison demonstrates how the Creative CRAFT framework enhances prompt quality by fostering creativity, context-awareness, and emotional resonance, key factors for addressing complex ethical dilemmas effectively.

4.1.1.5. Traditional Prompt (Tree-of-Thought - ToT) vs. Creative CRAFT Framework

Traditional Tree-of-Thought (ToT) Prompt: "Describe the research design for studying student engagement with AI tutors. Consider different approaches, outline each, and then select the most appropriate one."

Creative CRAFT Framework Prompt:

(i)   Context: You are designing a research methodology chapter for a thesis on student engagement with AI-powered tutoring systems in higher education.
(ii)   Role: You are a graduate researcher writing for an academic audience familiar with educational research methods.
(iii) Action/Task: Write a detailed description of a mixed-methods research design, justifying the choice and explaining data collection and analysis procedures.
(iv)   Format: Structured section with subheadings: research design, sampling, data collection, data analysis.
(v)   Tone/Steps/Constraints: Formal, clear, and academic. Start with the rationale for mixed-methods, describe quantitative methods, describe qualitative methods, explain integration, and conclude with the strengths of the design. Avoid jargon and overly complex sentences; use clear, concise language.
(vi)   Creative Direction: Incorporate examples of specific tools or instruments used; highlight how this design addresses gaps in previous studies.

Table 7.
Output Comparison of Traditional Prompt (ToT) and Creative CRAFT Prompt.

Element	ToT Prompt Output	Creative CRAFT Output
Explanation Style	"One approach is quantitative surveys to measure engagement. Another is qualitative interviews to obtain detailed feedback. We can combine both in a mixed-methods design."	"This study employs a convergent mixed-methods design to comprehensively explore student engagement with AI tutors. Combining quantitative surveys and qualitative interviews allows triangulation of data."
Depth of Detail	"The study will first survey 100 students, then interview 20 of them. Data will be analyzed statistically and thematically."	"A purposive sample of 100 undergraduate students enrolled in AI-assisted courses will complete standardized engagement surveys. From these, 20 participants will be selected for in-depth semi-structured interviews."
Tone	Neutral, somewhat informal: "We can combine both in a mixed-methods design. This allows capturing both numbers and experiences."	Formal and academic: "Integration of datasets will occur through side-by-side comparison to identify convergence or divergence. This mixed-methods design addresses limitations of prior studies relying solely on quantitative measures."
Organization	Presents methods sequentially without an explicit structure.	Clear subsections: "Research Design," "Sampling," "Data Collection," "Data Analysis," providing logical flow.
Justification	Limited justification: "This mixed-methods design provides a comprehensive understanding."	Provides rationale: "This mixed-methods design addresses limitations of prior studies that rely solely on quantitative measures, allowing for a richer understanding of how AI tutors impact student motivation and participation."

This example contrasts the traditional Tree-of-Thought (ToT) prompt with the Creative CRAFT framework in designing a research methodology section. The ToT prompt elicits a straightforward, somewhat informal overview of research approaches, presenting methods sequentially but lacking detailed justification and structured organization. While functional, its tone is neutral, and the explanation is basic.

Conversely, the Creative CRAFT prompt guides the AI to produce a more formal, academically rigorous output with clear subsections, precise sampling details, and a comprehensive rationale for method selection. It encourages the integration of specific examples and highlights how the chosen design fills gaps in existing literature, thereby enhancing the depth and clarity of the description.

This comparison illustrates how the Creative CRAFT framework fosters structured, detailed, and well-justified academic writing, moving beyond simplistic overviews toward sophisticated, audience-aware communication. It exemplifies the framework's capacity to improve clarity, professionalism, and critical engagement in scholarly AI-generated content.

4.1.1.6. Traditional Prompt (Reason+Act - ReAct) vs. Creative CRAFT Framework

Traditional ReAct Prompt: "Explain step-by-step how the ReAct method works for prompt engineering. Then write a research abstract about using ReAct to improve AI reasoning."

Creative CRAFT Framework Prompt:

(i) Context: You are writing a research abstract for an academic conference on advances in AI prompt engineering.

(ii) Role: Researcher specializing in AI and natural language processing.

(iii) Action/Task: Write an engaging, concise abstract explaining the ReAct method and its significance for improving AI reasoning.

(iv) Format: Abstract (approx. 250 words) with a clear introduction, method description, and implications.

(v) Tone/Steps/Constraints: Formal, informative, and persuasive. Introduce the problem, describe ReAct method's components, highlight key benefits, and conclude with future research directions. Avoid jargon and overly technical language; make it accessible to a broad academic audience.

(vi) Creative Direction: Use metaphors or analogies to clarify complex ideas and engage readers.

Table 8.

Output Comparison of Traditional Prompt (ToT) and Creative CRAFT Prompt.

Element	ReAct Prompt Output	Creative CRAFT Output
Output tone	Functional and straightforward	Formal, engaging, metaphorical, and persuasive
Depth of explanation	"First, the model reasons about the problem internally, then takes actions based on that reasoning… This cycle repeats to refine the output."	Much like a skilled detective alternates between pondering clues and interrogating witnesses, ReAct enables AI models to iteratively reason about a problem before executing informed actions.
Accessibility	"Using ReAct can improve AI reasoning by making it more structured and interpretable."	This synergy fosters outputs that are not only accurate but also interpretable and adaptable.
Creativity	Low; focused on factual steps	High; uses storytelling and vivid analogy to clarify abstract concepts
Justification	Limited justification: "This mixed-methods design provides a comprehensive understanding."	Provides rationale: "This mixed-methods design addresses limitations of prior studies that rely solely on quantitative measures, allowing for a richer understanding of how AI tutors impact student motivation and participation."

The comparison between the ReAct prompt and the Creative CRAFT framework highlights distinct differences in tone, depth, and presentation. The ReAct prompt delivers a functional and straightforward explanation, focusing on procedural clarity, detailing how the model reasons and acts iteratively. While informative, its tone remains neutral and primarily factual, with limited engagement or creativity.

In contrast, the Creative CRAFT prompt elevates the explanation by employing a formal, engaging style enriched with metaphorical language. For instance, it likens the AI's reasoning process to a detective alternating between clue analysis and interrogation, making an abstract concept more tangible and accessible. This approach not only deepens understanding but also enhances interpretability and adaptability.

Overall, the Creative CRAFT output demonstrates higher creativity and scholarly sophistication, offering a compelling narrative that communicates experimental findings with clarity and persuasive power. This reflects the framework's strength in producing nuanced, articulate, and impactful academic writing.

4.2. Comparison of Output Quality: Traditional vs. Creative CRAFT Prompting

Table 9.

Comparative Analysis of Output Quality Metrics Between Traditional and Creative CRAFT Prompting Methods (N=100).

Criterion	Traditional Prompt (Mean)	Creative CRAFT Prompt (Mean)	Mean Diff (d)	Improvement (%)	SD Trad (s_1)	SD CRAFT (s_2)	SD Diff (s_d)	SE Diff ($s\_d/\sqrt{n}$)	t-value (d/SE)	p-value (two-tailed)
Relevance to Task	3.8	4.5	0.7	+18.4%	0.7	0.6	0.512	0.0512	13.67	< 0.0001
Structural Coherence	3.6	4.6	1.0	+27.8%	0.8	0.7	0.588	0.0588	17.01	< 0.0001
Creativity/Novelty	3.2	4.7	1.5	+46.8%	0.9	0.7	0.646	0.0646	23.22	< 0.0001
Tone Fidelity	3.4	4.4	1.0	+29.4%	0.7	0.6	0.512	0.0512	19.53	< 0.0001
Format Accuracy	3.5	4.5	1.0	+28.6%	0.7	0.6	0.512	0.0512	19.53	< 0.0001

The paired sample t-test results, based on a sample size of 100, reveal that the Creative CRAFT framework significantly outperforms traditional prompting methods across all evaluated criteria: relevance, structural coherence, creativity, tone fidelity, and format accuracy, with improvements ranging from 18.4% to 46.8%, all statistically significant ($p < 0.0001$). Notably, the greatest enhancement was observed in creativity and novelty, with a remarkable 46.8% increase, underscoring the framework's strength in fostering original and imaginative AI-generated responses. These findings confirm that the framework's modular design, integrating context, role, action/task, format, tone/steps/constraints, and

explicit creative direction, effectively improves not only the accuracy and coherence of outputs but also their expressive depth. Qualitative feedback further supports these quantitative results, highlighting enhanced user clarity, usability, and creative flexibility. Collectively, the data affirm that the Creative CRAFT framework successfully meets the study's objectives by advancing prompt formulation strategies that enhance both the quality and creativity of AI responses, while improving overall user experience.

4.3. Analysis of User Perceptions on the Creative CRAFT Framework

Table 10.
Quantitative Summary of User Perceptions on Key Usability Dimensions of the Creative CRAFT Framework (N=100).

Dimension	Mean Score
Ease of Use	4.3
Clarity of the Framework	4.5
Creativity Enhancement	4.7
Satisfaction with Output Quality	4.6
Overall Experience	4.5

Table 10 presents the quantitative summary of user perceptions on key usability dimensions of the Creative CRAFT Framework based on a Likert-scale evaluation from 100 participants. The dimensions assessed include ease of use (M = 4.3), clarity of the framework (M = 4.5), creativity enhancement (M = 4.7), satisfaction with output quality (M = 4.6), and overall experience (M = 4.5). These high mean scores reflect a broadly positive reception, with the Creativity Enhancement dimension emerging as the highest-rated aspect. This finding aligns directly with the framework's core objective: to enrich the creative and expressive quality of AI-generated outputs through a structured yet flexible prompting method.

Table 11.
Thematic Analysis of Qualitative Feedback on the Creative CRAFT Framework (N=20).

Theme	Sample Participant Comment	Suggested Improvement
Learning Curve	"It took time to remember all the parts of CRAFT." (Educator, Interview #3)	Provide visual quick-reference cards or digital cheat sheets.
Over-structuring	"Sometimes I don't need all six elements." (Student, Interview #7)	Allow modular use of components based on task complexity.
AI Interpretation Variability	"Some AIs followed 'Creative Direction' better than others." (Student, Interview #12)	Provide AI-specific prompt examples or guidance.
Structured Creativity	"CRAFT made it easier to be both creative and specific, rare in AI work." (Educator, Interview #5)	Highlight this dual capability in training materials.
High Usability	"The template was clear; I just filled in what I needed for each part." (Student, Interview #8)	Emphasize simplicity in onboarding modules and demos.
Control vs Flexibility	"Loved the balance between structure and allowing imagination." (Educator, Interview #6)	Offer flexible presets for different writing genres or goals.
Need for Examples	"Tone and creativity could use more examples or guidance." (Student, Interview #10)	Expand the library of annotated prompt examples.

Note: Some participant responses originally in Filipino were translated into English for clarity and consistency.

This table synthesizes key insights from qualitative interviews and supports the study's broader aim: to assess the Creative CRAFT Framework's effectiveness in enhancing prompt design. The comments highlight not only strong acceptance of the framework's creative and structural value but also areas where usability and adaptability can be improved, especially for novice users or specific AI tools. These findings guided iterative refinement of the framework to make it more accessible and impactful.

The combined analysis of quantitative and qualitative data affirms the effectiveness of the Creative CRAFT Framework in meeting the study's core objectives: enhancing output quality, fostering creativity, improving user experience, and refining prompt formulation practices.

Quantitative findings establish the framework's measurable impact, but more importantly, these are complemented by strong user reception. Participants consistently rated the framework highly across usability dimensions, particularly valuing its ability to enhance creativity. This supports the framework's core intent not only to guide AI generation with structure but also to empower users to produce richer, more expressive content.

Qualitative feedback further enriches this perspective. Users emphasized how the framework promoted intentionality in prompt design, helping them move beyond generic requests. Themes such as "Structured Creativity" and "Control vs. Flexibility" reflect a shift toward deeper engagement with AI tools, particularly among educators and students. At the same time, comments about the learning curve and variability in AI responses point to the importance of adaptability and clearer onboarding resources, which the framework's refinement process actively addresses.

Together, these insights demonstrate that the Creative CRAFT Framework is not only effective but also adaptable, human-centered, and educationally valuable. It enhances how users think about and interact with generative AI supporting the development of AI literacy while producing more meaningful, creative outputs.

5. Conclusion

The study concludes that the Creative CRAFT Framework significantly enhances both the quality and creativity of generative AI outputs. This improvement stems not simply from adding more prompt components but from the thoughtful integration of structure and creative intention in a balanced, user-friendly manner. Central to this success is the Creative component, which transforms responses from mechanical to expressive, while the Reflection element encourages iterative thinking and self-evaluation by both AI and users.

Importantly, the framework fosters a notable shift in user mindset from passive querying to active co-creation with AI. This attitudinal change highlights how prompt engineering, when taught as a structured literacy skill, can bridge the divide between human creativity and machine generation. The findings challenge the common assumption that AI prompts should be purely functional or minimalistic; instead, layered, expressive, and modular prompts consistently yield richer and more meaningful outputs.

Despite these strengths, the study also identified some limitations. A minority of users initially found the framework overwhelming, underscoring the need for adaptability and potential scaffolding. Moreover, different AI systems varied in responsiveness to creative or abstract prompt elements, signaling a need for tool-specific calibration to optimize effectiveness.

Overall, the Creative CRAFT Framework offers more than just a method for crafting better prompts it introduces a new paradigm for human-AI collaboration grounded in structure, creativity, and intentional design. Its holistic approach integrates both functional and stylistic elements, accommodating logical and imaginative tasks alike. The framework's intuitiveness makes it accessible across a broad user spectrum, from technical experts to novices.

As such, CRAFT represents a significant and original contribution to prompt engineering literature, particularly valuable in contexts demanding creativity, clarity, and customization. It offers a replicable, modular structure applicable to diverse AI-driven workflows, including education, business communication, storytelling, and technical documentation. While this study focused on text-based prompts with GPT-4 and included a limited participant sample, future work could expand domain-specific testing and develop supporting tools, such as prompt generators or UI plugins, to further enhance usability and impact.

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