

Report from the Field

Prompt Engineering and Empowerment: A Report on the Spring 2024 Roundtables at North Dakota State University**Shiva Mainaly**

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Introduction

The rapid advancement of AI technologies, particularly large language models, such as GPT-4, ChatGPT, Gemini, Claude 2, Perplexity, and Midjourney, has profoundly impacted various fields, including education. The English department at North Dakota State University (NDSU) recognized the need to address these changes proactively, leading to the organization of a series of roundtables focused on prompt engineering and its implications for teaching and learning. This initiative stemmed from the department's commitment to staying at the forefront of technological advancements and ensuring that both faculty and students are well-equipped to navigate the evolving landscape of AI in academia.

The primary objectives of these roundtables were multifaceted and ambitious. First and foremost, they aimed to enhance understanding of prompt engineering techniques. This involved what Sidney Dobrin (2024) called, “delving into the intricacies of crafting effective prompts that could elicit desired responses from AI systems, a skill increasingly valuable in both academic and professional settings” (p. 70). Second, the roundtables sought to explore the potential of AI for augmenting critical thinking skills, recognizing that when used thoughtfully, AI tools could serve as “powerful catalysts for deeper analysis and reflection” (Wu, 2024, p. 2).

Ethical considerations surrounding AI use in academia formed another crucial aspect of the discussions. Participants grappled with questions of academic integrity, the boundaries of AI assistance, and the importance of maintaining what Gilberto Marzano (2022) called human creativity and original thought in an increasingly AI-driven world. These questions led to rich debates on how to strike a balance between leveraging AI's capabilities and preserving the essence of human intellectual endeavours.

The roundtables also focused on developing strategies for integrating AI tools into curriculum design. Faculty members shared insights on how to incorporate AI-assisted learning experiences that could enhance student engagement and understanding, while still maintaining rigorous academic standards. These conversations involved exploring innovative assessment methods that could accurately evaluate students' skills in an “AI-augmented learning environment” (Eager & Brunton, 2023, p. 2). This environment leverages artificial intelligence to personalize and optimize educational experiences by analyzing student data, adapting content to individual needs, and providing real-time feedback. It enhances engagement through interactive tools, automates administrative tasks, and identifies learning gaps, fostering a more efficient and inclusive educational ecosystem. This approach empowers both educators and learners by integrating advanced analytics, adaptive technologies, and immersive resources.

Ultimately, the overarching goal of these roundtables was to empower both faculty and students to leverage AI responsibly in their work. By fostering a deep understanding of AI's capabilities and limitations, the English department aimed to

cultivate a community of informed and critical users of AI technology. This empowerment extended beyond mere technical proficiency, encompassing a holistic approach that encouraged participants to view AI as a tool for enhancing human creativity and critical thinking rather than as a replacement for them. Through these objectives, the NDSU English department positioned itself at the intersection of traditional humanities education and cutting-edge technology, anticipating a future where “AI and human intellect could coexist and complement each other in the pursuit of academic excellence” (Mainaly, 2024, p. 1).

Roundtable Sessions

The roundtable series consisted of eight weekly sessions, each lasting two hours. Participants included faculty members from various departments, graduate students, and select undergraduate students. The sessions were structured as follows:

1. Expert presentation (30 minutes)
2. Guided group discussions (45 minutes)
3. Hands-on exercises (30 minutes)
4. Reflection and Q&A (15 minutes)

Data for this report included

- pre- and post-series surveys,
- session feedback forms,
- and analysis of artifacts produced during hands-on exercises.

Week 1: Introduction to Prompt Engineering

The inaugural session of the roundtable series set the stage for a comprehensive exploration of prompt engineering and its far-reaching implications in academia. Dr. Marohang Limbu, an AI ethics researcher at Michigan State University, presented on the burgeoning field of “conversation design” (Moore et al., 2023, p. 169) and its critical role in extracting meaningful, nuanced responses from AI systems. Dr. Limbu began by demystifying the concept of prompt engineering, explaining it as the art and science of crafting input queries that elicit desired outputs from AI models. He emphasized that effective prompt engineering goes beyond mere question formulation; it involves a deep understanding of the AI's architecture, its training data, and potential biases.

Through a series of examples, Dr. Limbu demonstrated how subtle changes in prompt structure could lead to dramatically different AI responses, highlighting the importance of precision and context in human-AI interactions. As the session progressed, participants engaged in lively discussions, drawing parallels between prompt engineering and traditional rhetorical strategies. Many noted that the skills required for effective prompt engineering, such as clarity, persuasiveness, and audience awareness, closely mirror those taught in rhetoric courses, making prompt engineering a natural extension of rhetorical education.

As faculty went on to discuss the potential applications of prompt engineering for writing assignments, Dr. Limbu shared his vision of using them to enhance student engagement. He proposed an assignment where students would craft prompts for AI systems to generate rough drafts, which the students would then critically analyze and refine. This approach, he argued, would not only teach students about AI interactions but also deepen their understanding of writing processes and revision strategies,

establishing prompt engineering as “a new frontier in rhetorical practice” (Ein-Dor et al., 2024. p. 7).

Week 2: Critical Thinking and AI Interactions

The second week of the roundtable series delved into the intricate relationship between critical thinking and AI interactions, a topic of paramount importance in higher education. Dr. Lisa Arnold led this session with a presentation of her research on the bidirectional impact of AI engagement on critical thinking skills. Her study, which involved over 50 undergraduate students across diverse disciplines, revealed how interacting with AI systems can simultaneously challenge and enhance cognitive processes. She presented evidence showing that students who regularly engaged with AI tools, particularly in prompt engineering tasks, demonstrated a 27% improvement in their ability to formulate complex arguments and a 32% increase in their capacity to identify logical fallacies in both AI-generated and human-authored texts.¹ In the discussion that followed, students reported a notable increase in their metacognitive awareness when crafting prompts for AI systems, as they found themselves critically evaluating the assumptions and biases inherent in their prompts. This metacognitive boost extended beyond AI interactions, with students noting improved self-reflection in their traditional writing and analytical tasks.

Faculty members then engaged in a lively brainstorming session to explore innovative strategies for incorporating AI interactions into their teaching methodologies. Lecturer Ben Melby from the English department shared his success in using AI-generated arguments as case studies for teaching critical analysis. He reported a 40% increase in student engagement and a 35% improvement in their ability to construct counterarguments when using this approach. He measured the 40% increase by tracking metrics such as participation rates in discussions, completion of interactive activities, and time spent using AI tools. The 35% improvement was assessed through pre-and post-intervention evaluations of the quality, depth, and frequency of counterarguments in student essays or debates. These metrics were further validated by comparing results with control groups and incorporating feedback from both students and educators. The session concluded with a collaborative exercise where participants worked in small groups to design AI interaction modules aimed at enhancing specific critical thinking skills. These modules ranged from using AI to generate multi-perspective debates on complex issues to creating AI-assisted peer review systems that prompt students to engage in deeper, more critical evaluations of their peers' work. “In the dance between human intellect and artificial intelligence,” Dr. Arnold concluded, “critical thinking is both the music and the choreography. It's up to us to ensure that this dance elevates both partners.”²

Week 3: Ethical Considerations in AI-Assisted Writing

For the third week of the roundtable series, I guided participants through an exploration of the ethical implications surrounding AI use in academic writing. The session began with an examination of authorship in the age of AI, challenging participants to reconsider traditional notions of originality and intellectual property. I presented several case studies, including a controversial incident where a student's AI-generated essay won a prestigious writing competition, sparking a debate on the boundaries of human creativity and machine assistance.

The discussion then shifted to the thorny issue of plagiarism, in which I highlighted the blurred lines between inspiration, collaboration, and outright copying

when AI tools are involved. I introduced the concept of “AI-augmented plagiarism,” where students might use AI to paraphrase or restructure existing texts in ways that evade traditional plagiarism detection tools. The concept led to a debate on how to adapt academic integrity policies to address this new challenge.

The most provocative portion of the session focused on AI's potential to perpetuate and amplify biases. I presented examples of how AI writing assistants, trained on biased data sets, could subtly reinforce stereotypes or skew arguments, further reinforcing dominant perspectives. I stressed the importance, therefore, of diverse training data and the need for ongoing scrutiny of AI-generated content.

As the session progressed, participants began to reconceptualize AI from being a threat to human creativity or a shortcut to be avoided to a sophisticated tool that, when used ethically and critically, could augment human intelligence and creativity. This nuanced perspective led to the collaborative drafting of an ethical framework for AI use in academic settings. The framework, tentatively titled “The NDSU Principles for Ethical AI Integration in Academia,” emphasized transparency in AI use, critical evaluation of AI-generated content, and the primacy of human judgment in academic work.

The session concluded with faculty participants brainstorming innovative ways to incorporate these ethical considerations into their curricula. Ideas ranged from creating “institution-specific” and “department-bound” AI ethics modules for writing courses to developing new assessment methods that evaluate students' ability to critically engage with AI tools.

Week 4: Prompt Engineering for Research and Inquiry

This session explored the potential of prompt engineering to revolutionize academic research. Dr Anastasia Andrianova, Director of English Studies in the Department of English at NDSU, shared her techniques for harnessing AI to formatively shape research ideation and forge interdisciplinary connections. In her demonstration, Dr. Andrianova used a carefully crafted prompt to generate a provocative research question linking climate change to medieval literature. This unexpected pairing led to a fascinating discussion on how environmental anxieties might be reflected in works like Chaucer's *The Canterbury Tales*, opening new avenues for eco-critical analysis of historical texts.

Participants then volunteered how they integrate similar techniques into curricula. For example, Dr Ajay Shaha, a computer science professor, conveyed his success in using prompt engineering exercises to teach algorithmic thinking in his research methods course. Students in his class developed prompts that led to interdisciplinary projects, such as using machine learning to analyze archaeological data for insights into ancient trade networks. Sarah Chen, a sociology Ph.D. candidate, used prompt engineering to explore intersections between social media algorithms and urban gentrification patterns, resulting in a research proposal that secured a highly competitive grant.

Week 5: Revolutionizing Peer Review: AI as a Catalyst for Enhanced Writing Feedback

This session focused on strategies for integrating artificial intelligence into academic writing processes. Dr. Stephen Disrud, Director of the Center for Writers at NDSU, presented evidence supporting the use of AI-generated feedback as a foundational tool for more comprehensive peer reviews. Dr. Disrud's presentation highlighted a pilot study conducted across three departments: English, biology, and political science. The study revealed that 87% of participating students reported a significant increase in confidence when providing peer feedback after comparing their insights with AI-

generated suggestions. Notably, the quality of student-generated feedback, as assessed by faculty members, improved by an average of 42% over the course of the semester.³

Professor James Chen from the Department of Rhetoric showcased how AI-generated structural analyses could transform the teaching of effective argumentation techniques. By using AI tools to deconstruct exemplary essays and speeches, he provided students with detailed breakdowns of rhetorical strategies, such as Toulmin's model of argumentation (claim, evidence, warrant), and classical structures such as *ethos*, *pathos*, and *logos*. For instance, students analyzed Martin Luther King's Jr.'s "I Have a Dream" speech, where the AI highlighted the use of repetition, parallelism, and emotional appeals to strengthen the argument. Similarly, in dissecting scientific papers, the AI identified how hypotheses were supported by data and logical reasoning. This method enabled students not only to identify these structures but also to replicate them in their own writing, leading to marked improvement in their ability to craft coherent and persuasive arguments. The tangible outcomes were evident in their essays, which demonstrated a deeper understanding of argumentative frameworks and a more sophisticated use of rhetorical techniques. Dr. Disrud emphasized that AI should not replace human feedback but rather serve as a complementary tool. He presented a framework for integrating AI feedback into writing center consultations, with the expectation that it would cause a noticeable increase in the depth and specificity of peer reviewer comments.

Week 6: Prompt Engineering for Creative Writing: Unleashing Creativity Through AI Collaboration

Jamee Larson, a professor of creative writing at NDSU, led a session on the potential of prompt engineering for reimagining the way writers approach their craft. This workshop challenged skepticism among participants about the role of AI in the sacred realm of creative writing, inviting them to consider how traditional creative boundaries may be transcended through "the synergistic potential of human imagination and artificial intelligence" (Ramirez & Esparrell, 2024, p. 35). Through a series of meticulously designed exercises, Larson demonstrated how prompt engineering could generate innovative texts, suggesting a future where, according to David De Cremer and Garry Kasparov (2021), AI serves not as a replacement for human creativity but as an invaluable collaborative partner.

Week 7: AI and Multimodal Composition: Redefining the Boundaries of Digital Rhetoric

In this penultimate session, Anna Marie Kinney, who specializes in digital rhetoric at the University of North Dakota, facilitated an exploration of the symbiotic relationship between prompt engineering and multimodal composition. Part of Dr. Kinney's presentation focused on how digital software has already started integrating AI. She exhibited, for instance, how Adobe Creative Cloud incorporated AI into its tools, rebranding them as Adobe Firefly. As AI affordances are grafted onto Microsoft Sway, Adobe Illustrator, and other digital platforms, users can effortlessly transmute abstract concepts into visual metaphors, transform mundane soundscapes—the hum of a refrigerator, the rhythmic ticking of a clock, the distant murmur of traffic, the rustling of leaves in the wind, the faint buzz of fluorescent lights—into emotionally resonant auditory experiences, and weave disparate media elements into cohesive narratives. Dr. Kinney showed how a simple textual prompt metamorphosed into a dynamic infographic with real-time data and how another command conjured a soundscape that perfectly encapsulated the emotional tenor of a poem.

Dr. Kinney stressed the democratizing potential of AI-assisted multimodal composition, aptly stating that this technology doesn't just level the playing field; it completely reinvents it, empowering students who may lack traditional technical skills to express themselves with unprecedented sophistication and nuance.

At the end of the session, efforts were made to collect some of the best digital creations and artifacts of NDSU students and faculty members to create a digital repository for future use.

In a post-roundtable session, faculty participants brainstormed assignments that could potentially interweave traditional writing with AI-generated multimodal elements. Faculty with expertise in digital archiving and creative minimalism—twin theories prevalent in digital humanities—proposed a project in which students would craft immersive, AI-enhanced virtual reality experiences to complement their research papers, thereby creating multidimensional arguments that engage not just the intellect but also the senses. The proposal involved exploiting multi-sensory rhetoric in an attempt to harness “alpha persuasion” (Knowles & Linn, 2004), a strategic communication technique that leverages authority, confidence, and logical structuring to influence decision-making or change perceptions effectively. It relies on establishing credibility (*ethos*), presenting well-reasoned arguments (*logos*), and subtly appealing to emotions (*pathos*) to guide an audience toward a desired outcome. For example, in a corporate setting, a leader using alpha-persuasion might present a data-driven proposal for a new initiative, citing industry benchmarks and success stories, while exuding confidence through assertive body language and tone. A credible case is Steve Job’s 2007 iPhone launch presentation, where he combined his authoritative reputation, a clear narrative about revolutionizing technology, and emotional appeals to excitement and innovation, persuading both consumers and investors to embrace the product. This approach convinced the audience of the iPhone’s value and reshaped the smartphone industry.

Week 8: Integration and Future Directions: Pioneering an AI-Informed Pedagogy for 21st-Century Rhetoric and Composition

In the culminating session of the roundtable series, Dr. Amy Gore, a professor of paratextual rhetoric at NDSU, advocated for an interdisciplinary project exploring how AI-enhanced multimodal composition might reshape students' neural pathways, potentially revolutionizing our understanding of literacy and equity in the digital age. Dr. Gore explained how AI enhances the acquisition of literacy by providing personalized, adaptive, and interactive learning experiences tailored to individual needs. For instance, AI-powered tools like speech recognition and natural language processing can offer real-time feedback on pronunciation, grammar, and vocabulary, helping learners improve their reading and writing skills. Adaptive learning platforms, such as Duolingo or Khan Academy, use AI to analyze student performance and adjust content difficulty, ensuring optimal challenge and engagement. Additionally, AI-driven chatbots and virtual tutors can simulate conversational practice, fostering language fluency and comprehension. Furthermore, tools such as Grammarly assist in refining writing by identifying errors and suggesting improvements, while apps such as Readability Analyzer help learners gauge and enhance the complexity of their texts. By making literacy education more accessible, engaging, and effective, AI bridges gaps for diverse learners, including those with disabilities or limited access to traditional resources, promoting what Dr. Gore referred to as “AI citizenship” (Gao, 2021).

Impacts

On Faculty

The roundtable series had a significant impact on faculty members, empowering them to engage with AI technologies more confidently and critically. Key outcomes included

1. *Enhanced Technological Literacy:* Faculty members reported a considerable increase in their understanding of AI and prompt engineering techniques.
2. *Pedagogical Innovation:* The majority of faculty participants indicated plans to incorporate AI-assisted activities into their courses within the next academic year.
3. *Research Opportunities:* The series sparked several collaborative research projects, with three faculty members securing internal grants to study the effects of AI integration on student learning outcomes.
4. *Interdisciplinary Collaboration:* The roundtables fostered new connections between the English department and other disciplines, particularly computer science and philosophy.
5. *Professional Development:* Faculty members expressed increased confidence in their ability to guide students in the ethical and effective use of AI tools.

On Students

Student participants, both graduate and undergraduate, reported significant benefits from their involvement in the roundtable series:

1. *Critical Thinking Enhancement:* Two-thirds of student participants reported an improved ability to formulate questions and analyze information.
2. *Technological Empowerment:* Students demonstrated increased proficiency in using AI tools, with a noticeable improvement in their ability to craft effective prompts.
3. *Research Skills:* Graduate students reported an increase in their confidence in using AI to assist with literature reviews and hypothesis generation.
4. *Creative Exploration:* Students involved in creative writing courses noted that prompt engineering techniques helped them overcome creative blocks.
5. *Ethical Awareness:* Students demonstrated a nuanced understanding of the ethical implications of AI use, with a majority of them able to articulate clear guidelines for responsible AI integration in their academic work.

Challenges and Considerations

Despite the overall positive outcomes, several concerns emerged during the roundtable series:

1. *Technological Access:* Ensuring equitable access to AI tools for all students, particularly for those with limited technological resources, was a concern.

2. *Overreliance*: Some faculty members expressed worry about potential overreliance on AI tools, emphasizing the need for balanced integration.
3. *Assessment Adaptation*: The need to adapt assessment strategies to account for AI-assisted work was identified as a crucial area for further development.
4. *Rapid Technological Change*: Keeping pace with the rapidly evolving AI landscape was recognized as an ongoing challenge for both faculty and students.
5. *Discipline-Specific Integration*: While the potential of AI was clear, participants noted the need for careful consideration of how to integrate these tools in ways that enhance rather than detract from discipline-specific learning objectives.

Future Directions

Based on the outcomes of the roundtable series, several initiatives are planned:

1. *Curriculum Integration*: A task force will develop guidelines for integrating AI and prompt engineering into the rhetoric and composition curriculum.
2. *Ongoing Professional Development*: Regular workshops will be organized to keep faculty updated on the latest developments in AI and their educational applications.
3. *Student AI Literacy Program*: A co-curricular program will be developed to ensure all students have opportunities to develop AI literacy skills.
4. *Research Cluster*: An interdisciplinary research cluster focused on AI in humanities education will be established.
5. *Ethical Framework Development*: Work will continue on developing a comprehensive ethical framework for AI use in academic settings.

Conclusion

The Prompt Engineering and Empowerment roundtable series at NDSU has significantly encouraged critical thinking and developed technological literacy among faculty and students. Lessons from this series are expected to influence the ethical and effective integration of AI in academia, shaping future educational practices.

Notes

¹The research containing these findings is in the process of being published. Some findings were shared by her via her PowerPoint slides.

²I myself was a participant in the session. This line is from the note I had taken during the session.

³The source containing these findings is yet to be published.

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