Harnessing GPT for Interactive Learning: Explorations as a Storyteller in Prompt Engineering for Real-Time Exercise Development

Introduction

Make no mistake about it, artificial intelligence (AI) is dumb. It is anything but intelligent. But it doesn't have to remain that way. Through proper use of prompt engineering, educators can take the role of creator and storyteller of their worlds.

This session introduces attendees to the exploration, development, and utilization of GPT-integrated applications and systems for interactive learning. It begins with a brief guide on setting up bespoke GPT systems including anticipated costs (minimal), necessary GPT-based keys, integration into pre-designed modules, and, finally, engaging in and enhancing prompt engineering skills in developing real-time exercises within the session. Specifically, the session then highlights the critical nature of effective prompt engineering, showing how tailored AI interactions can enhance educational experiences and adapt to individual learning needs. The session emphasizes the real-world benefits of students mastering prompt engineering - a critical skill to develop in our students in preparation for the inevitable AI-integrated workplace. The session is interactive, with attendees engaging in real-time exercises to design their own educational experiences using prompt engineering. This hands-on approach ensures participants leave with practical skills in implementing GPT effectively in their own teaching design as well as a greater understanding of how to educate their students with such critical knowledge in preparing them for a future augmented by AI.

Theoretical Foundation and Teaching Implications

As with most all things MOBTS-related, such experiential activities are grounded within Kolb's *Experiential Learning Theory* (1984) in providing participants with active learning, experimentation, observation, and reflection.

Active learning through artificial intelligence is largely unexplored at this stage. Assumptions can be made in terms of the richness it provides in exploring complexities of context and information; however, it has yet to be explored where it operates within the realm of *Media Richness Theory* (Daft & Lengel, 1984). A current empirical gap exists in just how rich artificial intelligence is and whether it mimics the richness of human-to-human engagements across digital media or whether human-to-AI is a form or scale of richness all to itself. Empirical evidence suggests a considerable gap between artificial intelligence and knowledge acquisition (Neches et al., 1991) leading to desired performance outcomes via knowledge sharing (Russell & Norvig, 2010). However, while these studies called into question the richness in such acquisition and sharing, they were conducted with an AI environment vastly different than the capabilities that are present at the

fingertips of our educators and students, and increasingly commonplace within the workplace today.

When it comes to prompt engineering the path toward richness is left up to the creator. The creator can be highly precise and structured in the development of the AI-mindset or can be an open world storyteller allowing the AI to explore the borderless world being crafted. Thus, even with the present gap in empirical findings, assumptions must be made that greater richness for highly complex and high context situations currently exist to assist in leading to desired performance (and learning!) outcomes.

Learning Objectives

The takeaway for participants includes:

- A greater understanding of GPT-based systems and their potential tie-in to external applications to enhance engagement as well as possibilities for quantitative and qualitative research.
- The technical prerequisites to install, design, develop, and execute live and evolving AI-based exercises.
- Knowledge of the benefits of prompt engineering to design exercise templates and adapt for real-time precision toward desired outcomes. Examples of how prompt engineering and be highly structured or an exercise in storytelling.
- The ability to engage with students on technology of current interest to them and to bestow upon them enhanced knowledge in preparation for the workplace.
- A greater understanding of GPT systems leads to a greater awareness of potential misuse of such systems, enabling faculty to spot misuses.

Exercise Overview

- The exercise will take approximately 60 minutes.
- *5-minutes:* A brief overview of the current state of GPT systems will be provided.
- *5-minutes:* A technical overview of the prerequisites of hosting GPT systems as well as the modules recommended for greater efficiency within prompt engineering.
- *10-minutes:* Examples and exercises in prompt engineering.
- *20-minutes:* Participants will break up into teams to engineer their own prompts that will be executed and tested within the session.
- *10-minutes:* Testing of groups' prompt engineered creations.
- *10-minutes:* Debrief and discussion of session.

Debriefing Overview

To ensure proper takeaway, the debriefing will be somewhat structured during the first half (five-minutes). The goal is to ensure the participants understand what they were creating, how they created it, and the impact that their structure or lack thereof had on the exercise they were creating through the 'personality development' of the AI systems.

Questions for the teams and participants will include:

- What aspects of your prompt engineering went as well or better than you expected?
- What went wrong or was misunderstood by the AI?
- How did your prompt engineering craft the tone of the AI? Was the AI inviting? Dismissive? Was there a humanesque layer of richness added through prompt engineering? Was it *too* human and did it cross the *Uncanny Valley?* Was it too cold and dismissive? Further, were *you* cold or dismissive because it was not human?
- What level of humanesque richness, if any, do you desire in AI engagements and how would that change your – and your students' - engagement?
- Finally, what control do you feel over AI as a creator and storyteller?

The second half of debriefing will be freeform and guided by the questions and interests of the participants.

Ideally, the exercises designed by the participating teams will be left on the designated server for future consideration and use.

Participants will be welcome to contact the presenter post-session for any future discussion and guidance given the potential complexity and technological nature and challenges of the session topic.

References

Daft R. L., and Lengel, R. H. "Information Richness: A New Approach to Managerial Behavior and Organization Design." In B. M. Staw and L. L. Cummings (Editors), *Research in Organizational Behavior*. Greenwich, Connecticut JAI Press, 1984.

Kolb, D. A. (1984). Experiential Learning: Experience as the Source of Learning and Development. Prentice-Hall.

Neches, R., Fikes, R. E., Finin, T., Gruber, T., Patil, R., Senator, T., & Swartout, W. R. (1991). Enabling technology for knowledge sharing. *AI magazine*, *12*(3), 36-36.

Russell, S. J., & Norvig, P. (2010). *Artificial Intelligence: A Modern Approach*. London.