College Students' Positions in Interaction with ChatGPT

Nuodi Zhang, Jiabei Xu, Zhongyu Wang & Vanessa Dennen

Florida State University

Background and Context

- Artificial intelligence as a learning tool

- ChatGPT and learning in higher education
  - personalized learning
  - real-time support (Dempere et al., 2023; Rudolph et al., 2023)

Problem Statement

- ChatGPT is an interactive entity, playing diverse roles as interaction unfolds.

- The roles and dynamics are less known.

Research questions

Employing positioning theory as an analytical framework, this study is guided by:

1) What types of interaction do students use to complete in-class learning activities with ChatGPT?

2) How do these interactions differ based how the student positions themselves and ChatGPT?

Method

- Descriptive, multi-case study (Yin, 2017)
- Participants
  - n=14 (5 had experience with ChatGPT)
  - 10 female, 3 male, 1 non-binary
- Data collection
  - On-site data collection with chat output, lesson plan, survey.
- Data analysis
  - A hybrid approach: deductive & inductive

Table 1. Codebook for Interaction Acts

Categories	#	Codes	Descriptions
Initial	A	Complete_imperative	Initiate an imperative in a complete sentence form. E.g., "Give me 3 ideas about …"
	B	Complete_interactive statement	Initiate an interactive statement in a complete sentence form. E.g., "I would like to …"
	C	Question	Inquiry as a question in a complete sentence form.
	D	Incomplete*	Inquiry in an incomplete sentence form. E.g., "lesson plan."
	E	Provide context	Provide expectations, requirements, or examples that guide ChatGPT.
Following prompts	F	Add details	Revise initial prompts to add details. E.g., from "English lesson plan" to "2nd grade English lesson plan"
	G	Decompose	Break down initial prompt into specific ones. E.g., from "new year resolutions" to "improve time management skill"
	H	Evaluate/Feedback	Evaluate ChatGPT input in various ways, such as commenting on its errors. E.g. "all of these sound great!"
	I	Follow up	Ask questions or comment on specific aspects of ChatGPT response. E.g., "tell me more about …"
	J	Appreciation*	Express appreciation to ChatGPT's input.

Note. * indicates the codes adapted from Han et al., (2023)

Findings

Ways of interaction

- Query types
  - Questions (n=23) and interactive statement (n=17)
  - Imperative (n=7), incomplete (n=8)
- Initial and Following queries
  - Context (n=23)
  - Follow-up (n=22)
- Different interaction pattern
  - Explorer vs. problem solver
  - Rich context vs. increasing detail

Findings

Positions

1. Information provider

   a. Search engine ("first grade English lesson")

   b. Individualized consultant ("lesson plan targeted to a 2nd audience who has some general background")

2. Human conversational partner

   a. Showing empathy and appreciation ("All of these sound great")

Findings

Positions

3. A machine, computer, or tool
   a. Digital Servant ("make me a training plan")
   b. Intelligent Engine("lesson plan targeted to a 2nd audience")

- The fluidity of positioning
  - on average 2 distinct roles across participants
  - Information provider: "What are five fun and creative activities to do indoors with my dog?"
  - Digital servant: "Make me a training plan to run a 5K."

Discussion

- Limited exchange with ChatGPT
  - the need for **guidance and support**
  - the need to **develop adequate AI literacy**

- Students demonstrate different ways of interaction, teachers should consider **individual differences** when integrating ChatGPT.

Discussion

- Most participants position ChatGPT as an **Information Provider**, which aligns with the primary function of AI language models as information-generating tools (Brown et al., 2020).

- Some students position ChatGPT as a **Human Conversational Partner**, indicating a tendency to anthropomorphize AI technologies.

- Future research should investigate the influence of anthropomorphizing AI technologies.

Conclusion

- The findings contribute to our understanding of how college students relate to and position ChatGPT in solving learning problems.

- The findings highlight the potential of utilizing ChatGPT as a learning tool in higher education and the need to improve college students' AI literacy.

Contact

Nuodi Zhang

email: nzhang4@fsu.edu

Twitter/Linkedin: Nuodi Zhang