

# DISCOURSE ANALYSIS IN ENGINEERING: INVESTIGATING PATTERNS IN BRAINSTORMING CONVERSATIONS

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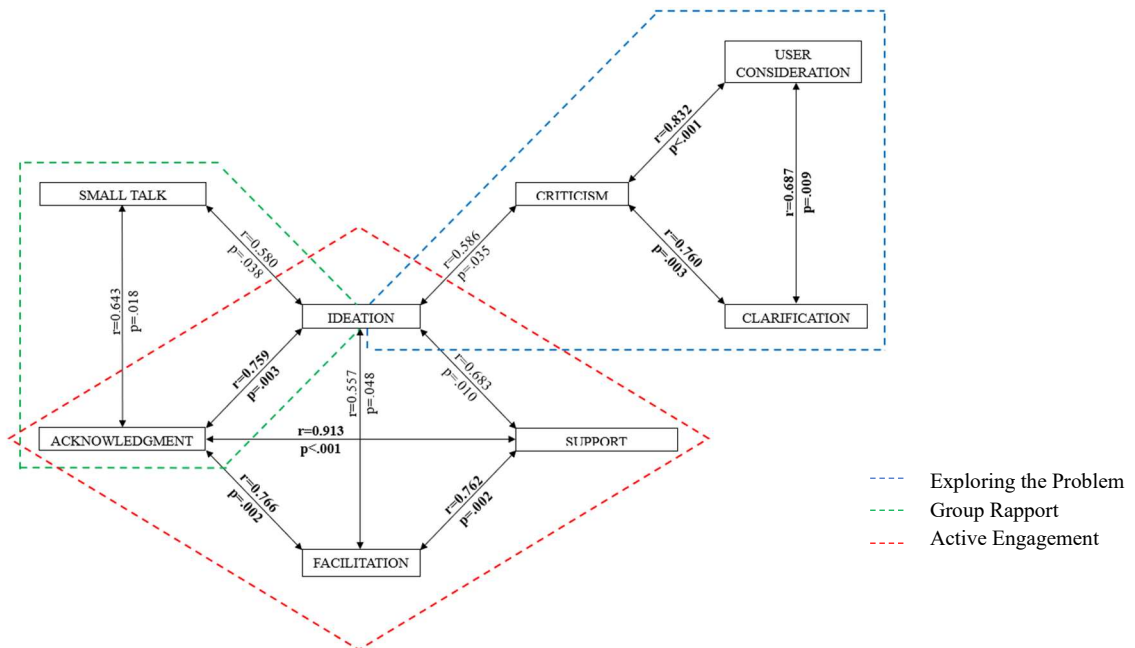
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Brainstorming is a critical part of the engineering design process and can have significant impact on the outcomes of the overall project. While research has studied the outcomes of brainstorming and the ideas that teams generate, the role that language and conversation plays in these activities is still relatively underexplored. Observing the different ways people use specific types of discourse can reveal how conversations can affect brainstorming itself. To that end, this research aims to answer the following questions:

- 1) What are the different kinds of discursive moves that students make during engineering brainstorming activities?
- 2) What patterns or themes emerge among these discursive moves?

We collected data by recording conversations that took place during team brainstorming activities with engineering students. These conversations were transcribed, and we used discourse analysis to code our data according to the intent of the speaker. We combined quantitative and qualitative analysis to identify and explore correlations patterns within these conversations.

Three prominent themes emerged from our analyses: Active Engagement, Group Rapport, and Exploring the Problem. These themes highlight the range of different conversational elements that work together to support effective brainstorming discussions. Engineers and engineering educators can be mindful of the way that they frame their brainstorming activities so that the team's discourse encourages more active engagement, stronger group rapport, and deeper exploration of the problem at hand.



A Thesis Defense in Mechanical Engineering

California Polytechnic State University, San Luis Obispo

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Zoom Link: <https://calpoly.zoom.us/j/89946977793>