

Linguistic Evidence of Cognitive Distribution: Quantifying Learning Among  
Undergraduate Researchers in Engineering

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The Research Communication Studio at the University of South Carolina nurtures undergraduate learning in engineering through guided interaction among student peers, near-peer graduate mentors, and faculty members. The RCS bases its pedagogical approach on Dorothy Winsor's concept of thought and knowledge as a network distributed among members of a group with shared goals. Possessing various levels and aspects of expertise, the RCS staff and students together construct knowledge by communicating their understanding—or gaps in understanding—of the participating undergraduates' research and related deliverables during the small, weekly meetings of interdisciplinary studio groups.

Through collaborative research, the RCS staff, which includes graduate students and faculty in linguistics and in composition and rhetoric, is developing means of analyzing how cognition is distributed among studio participants. This paper presents results of the current study. To closely investigate the communicative interface at which learning occurs, certain structural features indicative of cognitive development were isolated—for example, questions, responses, modals and epistemic adverb phrases, and cognitive and communicative verbs. The content of students' conversational turns was described in terms of explanations or references in the transcripts of the videotaped sessions; also, the content of the meetings was categorized in terms of whether the discourse topic concerned genre or core research.

The quantity and patterning of structural and content features in students' verbal interactions offer insights not only about how students learn in the studio environment, but also about how learning broadly occurs as a social phenomenon. As the significance of social interaction in life-long learning gains recognition, quantitative research on verbal communication in educational settings promises considerable insights into the learning process.

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