

## A STUDY ON THE RELATIONSHIP BETWEEN TUTOR'S CONTENT KNOWLEDGE AND THEIR TUTORING DECISIONS

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When studying mathematics education and student success, most research tends to study the in-classroom teaching aspect. Another important aspect of mathematics education occurs outside the traditional classroom with tutors. While it has been shown that tutoring leads to student success (Xu, Hartman, Uribe, & Mencke, 2001), research has not necessarily focused on what tutoring is or what makes it effective. In recent years, efforts have been made to expand research in this field. Two major themes are the study of the types of knowledge necessary for effective tutoring and the interplay between these domains of knowledge to better understand the tutoring process.

### Mathematical Knowledge for Tutoring

Burks and James (2019) began to create a theoretical framework for what constitutes “Mathematical Knowledge for Tutoring (MKTu)” (Burks & James, 2019) derived from Mathematical Knowledge for Teaching (MKT; Ball, Thames, & Phelps, 2008) model. What they determined is that a MKTu model would differ slightly from MKT in that the MKTu would include two overarching domains of *affect* and *self-regulation*. Additionally, certain domains shared by MKT and MKTu may not necessarily be implemented in the same manner. For example, while a classroom teacher is typically expected to be a master of their subject, a tutor is not, and thus, their common content knowledge tends to be more general, with a focus on *solving* problems rather than conceptual understanding. This new framework prompts a number of new avenues for research.

### The Study

One such avenue is research into the relationship between a tutor's content knowledge and the pedagogical decisions they make while tutoring. In this poster, we present the results of a study in which we develop and facilitate mock-tutoring scenarios for tutors at a generalist-model tutoring center, and analyze their interactions with an actor-student (Jose Saul Barbosa) through the lens of MKTu, with consideration given to the dimensions for tutoring centers laid out by Byerly et al. (2019). In a generalist model, tutors are not experts in a single content area, rather they have a more general knowledge on a variety of subjects (Byerly et al. 2019). This variation provides an excellent opportunity to study how one's content knowledge interacts with the other domains of MKTu. In addition, we present the results of analyzing brief content assessments associated with the scenarios to draw comparisons between a tutor's content knowledge and the choices they make while tutoring. This study has implications not only for understanding the ways in which a tutor's content knowledge informs their tutoring, but also the ways it interacts with the other domains of MKTu. In studying this, we hope to contribute to future research into determining what factors and decisions can lead to effective tutoring.

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A study on the relationship between tutor's content knowledge and their tutoring decisions

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