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### Algebra Students' Mental Models Regarding the Use of Teacher-Generated Feedback: A Grounded Theory Study

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# Algebra Students' Mental Models Regarding the Use of Teacher-Generated Feedback: A Grounded Theory Study

## Abstract

This purpose of this qualitative research was to gather a better understanding of the mental models that ninth-grade algebra students use when responding to or not responding to teacher-generated feedback. The study used a Straussian grounded theory design to elicit the mental models of 10 ninth-grade algebra students by conducting semi-structured interviews.

The study generated an emerging theory titled Algebra Student Feedback Use Theory. This theory can be utilized by algebra teachers, math department leaders, and preservice teacher preparation programs as a framework to improve feedback practices in mathematics courses. The results of this study showed that students make decisions when responding to teacher-generated feedback based on the students' desired benchmark grade for achievement, and the students seek to minimize the amount of required effort they expend to maintain their desired grade. The findings provide the rationale for several recommendations for practices and future research. Some of these recommendations for stakeholders include (a) use digital platforms that auto-generate feedback, (b) ongoing professional development on feedback, and (c) including best practices for giving effective feedback in preservice teacher coursework.

## Document Type

Dissertation

## Degree Name

Doctor of Education (EdD)

## Department

Executive Leadership

## First Supervisor

Guillermo Montes, PhD

## Subject Categories

Education

## Comments

Only the abstract of this dissertation is available, on the author's request.

Algebra Students' Mental Models Regarding the Use of Teacher-Generated Feedback:  
A Grounded Theory Study

By

Christopher Callahan

Submitted in partial fulfillment  
of the requirements for the degree  
EdD in Executive Leadership

Supervised by

Guillermo Montes, PhD

Committee Member

Linda McGinley, EdD

Ralph C. Wilson, Jr. School of Education

St. John Fisher University

May 2023

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