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Case Studies: The Experiences of Gifted Females in Mathematics

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Title: Case Studies: The Experiences of Gifted Females in Mathematics

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Abstract

This study sought to discover what gifted female students felt and experienced in both high school and college mathematics classes and whether these feelings and experiences had an effect on their choice of college major(s) or career field(s). A researcher-designed survey was used to prompt the participants to reflect on their experiences and feelings. Through a qualitative analysis of the data few themes emerged, therefore, a question-by-question analysis of each participant's responses was completed. Results indicate that most of the participants had good experiences in high school and college, in general, but their responses varied greatly in how they viewed those experiences.

Cross-case Analysis

Similarities based on gender of high school teachers

- Mara, Sara, and Katie all said their male teachers gave good explanations in class.
- All of the participants that used gender-specific pronouns had male teachers their junior and senior year.

Giftedness

National Association for Gifted Children: "Gifted individuals are those who demonstrate outstanding levels of aptitude (defined as an exceptional ability to reason and learn) or competence (documented performance or achievement in top 10% or rarer) in one or more domains."

This study: The criterion was female students who have excelled in mathematics, meaning they took Advanced Placement Calculus AB during high school, which indicates they were at least one grade level ahead in mathematics, and received a passing score on the Advanced Placement Calculus AB Test.

Similarities among participants' responses

Katie, Leanne, and Lorelai

- same high school
- no similar responses among all three
- two had similar responses for several questions, but not always the same two

Lorelai, Sara, and Alexis

- AYA Math Education majors
- Recognizing students' ability as a characteristic of a good teacher

Themes

No Gender Differences (4 out of 6 participants)

Support and Encouragement (4 out of 6 participants)

Enthusiasm (3 out of 6 participants)

Recognize Abilities (3 out of 6 participants)

Challenging (3 out of 6 participants)

Good Explanations (3 out of 6 participants)

Similar Advice (3 out of 6 participants)

	Katie	Leanne	Lorelai	Sara	Alexis	Mara
No gender difference	X	X		X		X
Supportive		X	X	X		X
Enthusiastic	X		X	X		
Recognize Abilities			X	X	X	
Challenging	X		X			X
Good Explanations			X	X		X
Similar Advice	X			X		X
Male	X	X	X	X	?	X
Size of High School	Large	Large	Large	Medium	Small	Large