

Student or Teacher? A look at how students facilitate public sensemaking during collaborative group work

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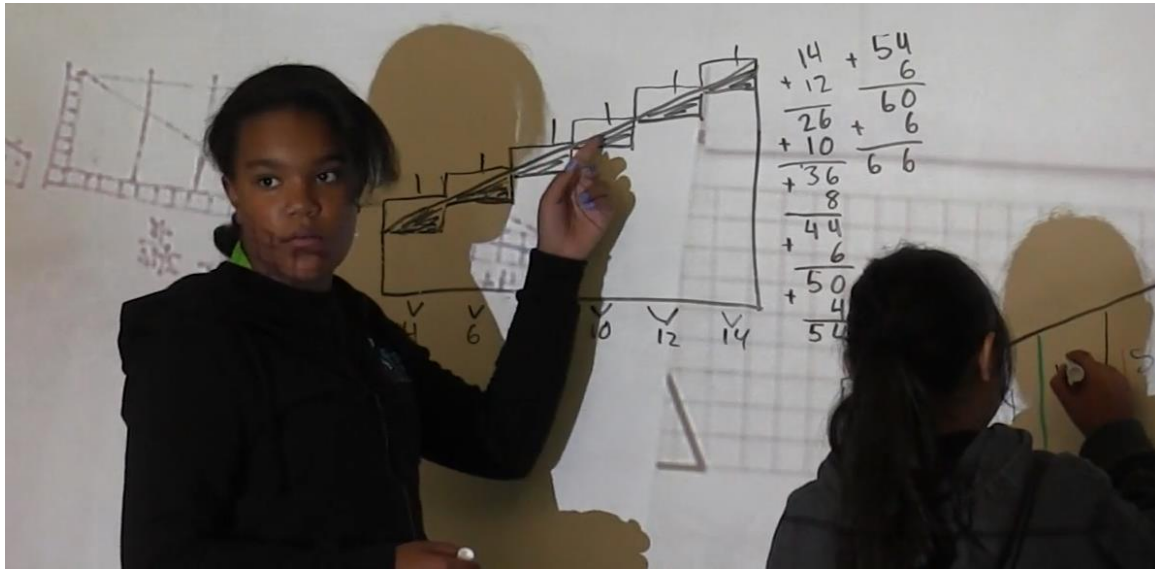
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Introduction

- feature of equitable classrooms is the equitable distribution of authority and agency among students
- **Authority:** amount of “given opportunities to be involved in decision-making” including “establishing priorities in task completion, method, or pace of learning” (Gresalfi & Cobb, 2006, p. 51)
- **Agency:** ability to carry out self-made decisions on a mathematical task



Introduction (Cont.)



- Authority & agency enhanced through public *sensemaking* (Ruef, 2016)
 - students participate in discourse as an active member of the classroom
 - seeks opportunities to understand & acknowledge other's ideas, take risks by sharing, present arguments, and grapple with mistakes (Ruef, 2016)

Conceptual Framework

- **Positioning theory:** utilizes speech & action to locate someone's rights, obligations, and duties (Van Langenhove & Harré, 1999)
- **Interactive positioning** happens when students position one another in relation to each other (Davies & Harré, 1999)
- **System of negotiation & moves:**

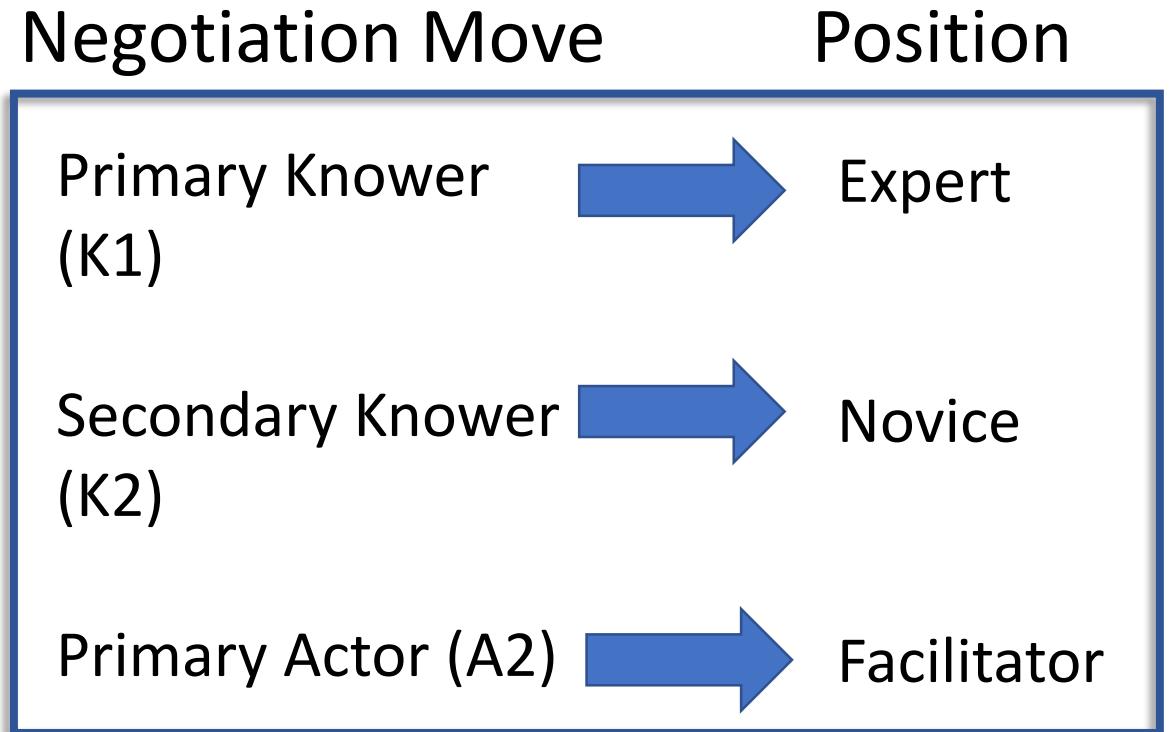
Negotiation Move	Definition	Example
Primary Knower (K1)	Provides information.	"Area is length times width."
Secondary Knower (K2)	Requests information.	"What's the formula for area of a rectangle?"
Primary Actor (A1)	Provides an action.	[reads the problem out loud]
Secondary Actor (A2)	Requests for an action.	"Can you read the problem out loud?"

- K1, A2 moves hold more agency and authority

(Berry, 1981)

Conceptual Framework (Cont.)

- Types of positioning
 - **Expert:** Often deferred to (mathematically), given authority to decide whether work was correct
 - **Novice:** Deferred to an expert (positioning themselves as less competent), often receiving help from others
 - **Facilitator:** Regulates group activity/participation from group members, actively gets group members to contribute to joint problem solving



DeJarnette & González, 2015; Esmonde, 2009

Research Questions

1. How are students positioned during mathematical group work in public sensemaking classrooms?
2. How does interactive positioning impact the distribution of agency and authority?

Methods

Context

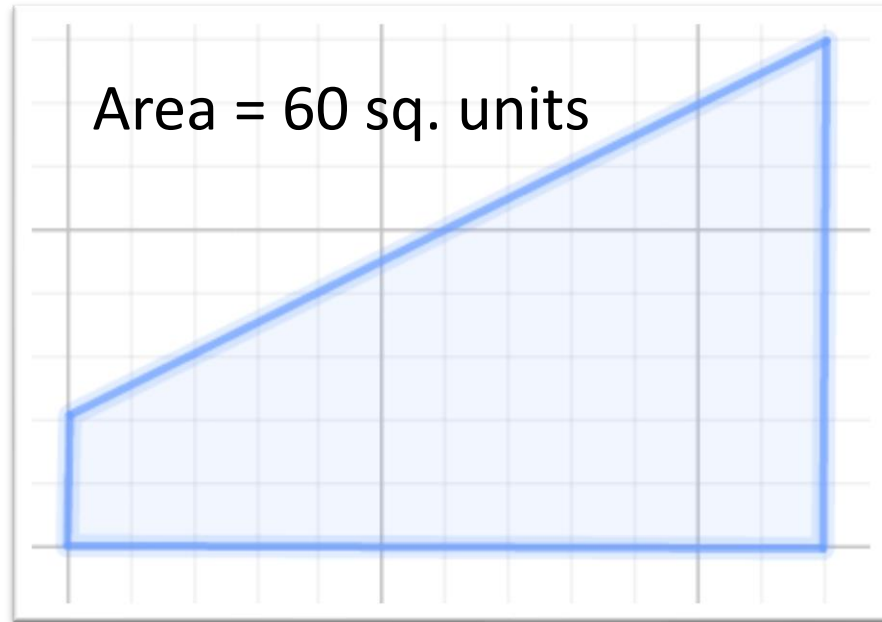
- 60 sixth grade students, primarily Latinx, attending public magnet school with focus on STEM and health sciences
- Ms. Mayen (teacher) is Latina
 - trained in facilitating public sensemaking

Data Sources

- Set of existing classroom video footage from Dr. Ruef

Qualitative Data Analysis

- Videos were transcribed & coded with MAXQDA software using a priori and emergent codes



*Brooklyn (top left), Kazaly (top right), Flor (bottom left), and Elena (bottom right) discuss how to find the area of the trapezoid (without formulas!).

*pseudonyms

Findings

Code Frequency of Negotiation Moves

Code System	Elena	Brooklyn	Kazaly	Flor	SUM
A1	2 (11%)	5 (29%)	2 (11%)	8 (47%)	17
K2	7 (19%)	13 (35%)	7 (19%)	10 (54%)	37
K1	25 (16%)	82 (54%)	14 (9%)	31 (20%)	152
A2	9 (28%)	17 (53%)	3 (9%)	3 (9%)	32

Duration of video footage: 26:52 over two days

- Brooklyn is positioned as expert-facilitator on the team; no clear novice

Evidence of Distributing Agency



Transcript

Elena: which one should we do?

Flor: Brooklyn, which one should we do?

Brooklyn: You guys are going up there, so you guys decide but remember you still have to count the little ones.

- Brooklyn distributes agency to Elena and Flor by letting them choose which method to present

Evidence for Distribution of Authority



Transcript

Brooklyn: I think you guys should do this one - and then explain - remember it's half? Half of two is one?

Elena: I don't know how to explain that. Or you should go.

Brooklyn: I'm not going!

Flor: I'll go up with you, Brooklyn.

Elena: Yeah.

Brooklyn: I don't want to go.

Elena: Everybody goes.

Brooklyn: I'm trying to show you.

- Brooklyn acknowledges others' ideas
- Elena refrains from risk-taking
- Flor demonstrates risk-taking
- Brooklyn redistributes authority to Elena and Flor

Conclusions

1. How are students positioned during mathematical group work in public sensemaking classrooms?
 - Clear expert-facilitator, no clear novice
2. How does interactive positioning impact the distribution of agency and authority?
 - Brooklyn redistributes authority & agency to other students by “refusing to be the source of authority” (Ruef, 2016), mimicking the role of Ms. Mayen
 - Encourages risk-taking for Elena and Flor
 - Maintains equitable groupwork through temporary positioning

Limitations/Next Steps

- Limitations: Did Brooklyn consciously distribute agency and authority? What were her motivations?
- Interview students about why they performed certain actions
- Next steps: analyze different groups of students, add additional negotiation moves to represent complexity of interactions



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Questions?

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