

Positioning Multilingual Learners for Success in Elementary Mathematics

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Thank You

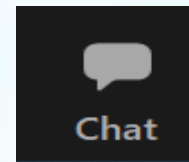
NCTM and Chonda Long
for creating this opportunity!

Welcome

- I look forward to interacting with you.
- Thank you for investing your precious time.

Throughout the session:

- Type questions in the Q&A.
- Enter thoughts or reactions in Chat.
- Generate a list of ideas you want to consider in the future.



Grateful for Teachers

Grateful for those who have opened the doors to not only their classrooms and practices, but especially their private thoughts and feelings. They approached our relationship with humility and a deep desire to learn. They were willing to make their practice and thoughts public so that others could learn from them. I have found that type of authenticity rare and laudable. We need to honor them.

Session Overview

- What are the critical components of positioning?
- Why is it important to consider positioning in mathematics classrooms? Especially for multilingual children and families?
- Why is positioning critical to consider in every role that we play (e.g., educator, community member, parent, leader)?
- What are strategies that teachers can use to position multilingual learners (MLs) in positive ways in mathematics?

Our Memories

- When I was a student in high school...
- When my daughter was in high school...

Answer in the Chat

1. When were you positioned in a positive or negative way in mathematics?
2. Are some children positioned in different ways based on their race? Wealth? Health? Language? Other aspect?

Studying Positioning With Student Cams



Positioning MLs for Success

- What happens when MLs are positioned for success in mathematics?

- Two examples:

Ms. Martínez, “In conclusion, this **challenge** problem was solved by a **very good thinker** in our classroom. Violetta, thank you very much.” [Class applause.]

Violetta's Writing in September

Mis. Chav

I know your thinking
it is that the triagle it
dose not. Look like a
Rright triage. Because 4 and 6
it could no be togeter beacuas
4 is it to smalle for it.

(Chval & Khisty, 2009)

Violetta's Writing in April

Going Around in Circle

I did a challeng pblem and I got it. I went in Front of the class to exclaim it. This is how I solved it. I am going to exclaim how to find the perimeter of three quare circles. First I took $100 \div 3$ to find the area of a quarer circle. Next I multiplied by 4 to get the area of a whole circle. Afther this I divided by π to get area of a square build on the radius. Then I took the \sqrt{x} to get the radius or side length of the sq. built on the radius. Next, I multiplied by 2 to get the diameter. Then I **sto** because that is the two straight lines. After this I multiplied by π to get the circumference of a circle. I divided by 4 to get the curve of a quare circle. Next I multiplied by 3 to get the three curvy parts of a 3/4 circle. So then I **sum** to the memory. I **exc** to get the perimeter of the three quarter circle. I think I did well in how I exclaimd it.

$$\begin{aligned}
 100 \div 3 &= \times 4 \\
 &= \div \pi = \sqrt{\quad} \\
 \times 2 &= \text{sto} \times \\
 \pi \div 4 \times 3 &= \\
 \text{sum exc} &
 \end{aligned}$$

Alonso-December

Ms. Bristow: “I scanned in Alonso’s work because I thought that he did a nice job of explaining this a few different ways. [Turns to Alonso] Do you mind showing us one way to explain it for us?”

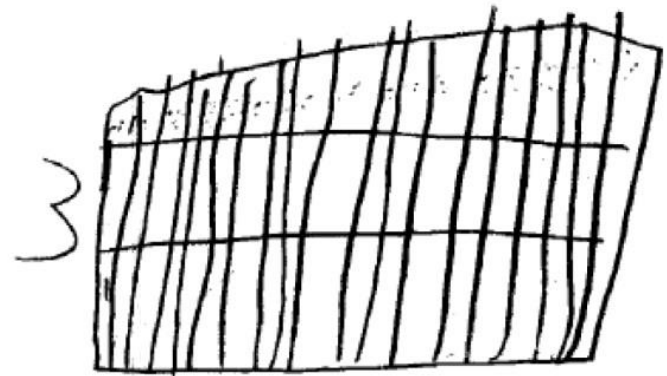
[Addresses the class] And then he might share other ideas because he did an awesome job of explaining it to Carly.”

Alonso's Work

1. There are 3 baskets of puppies. There are 19 puppies in each basket. How many puppies were there in all? 57



$$3 \times 19 = 57$$
$$\begin{array}{r} 19 \\ + 19 \\ + 19 \\ \hline 57 \end{array}$$



Alonso's Results

	Pre-test	Post-test
English	19% $\left(\frac{4}{21}\right)$	95% $\left(\frac{20}{21}\right)$
Spanish	33% $\left(\frac{7}{21}\right)$	86% $\left(\frac{18}{21}\right)$

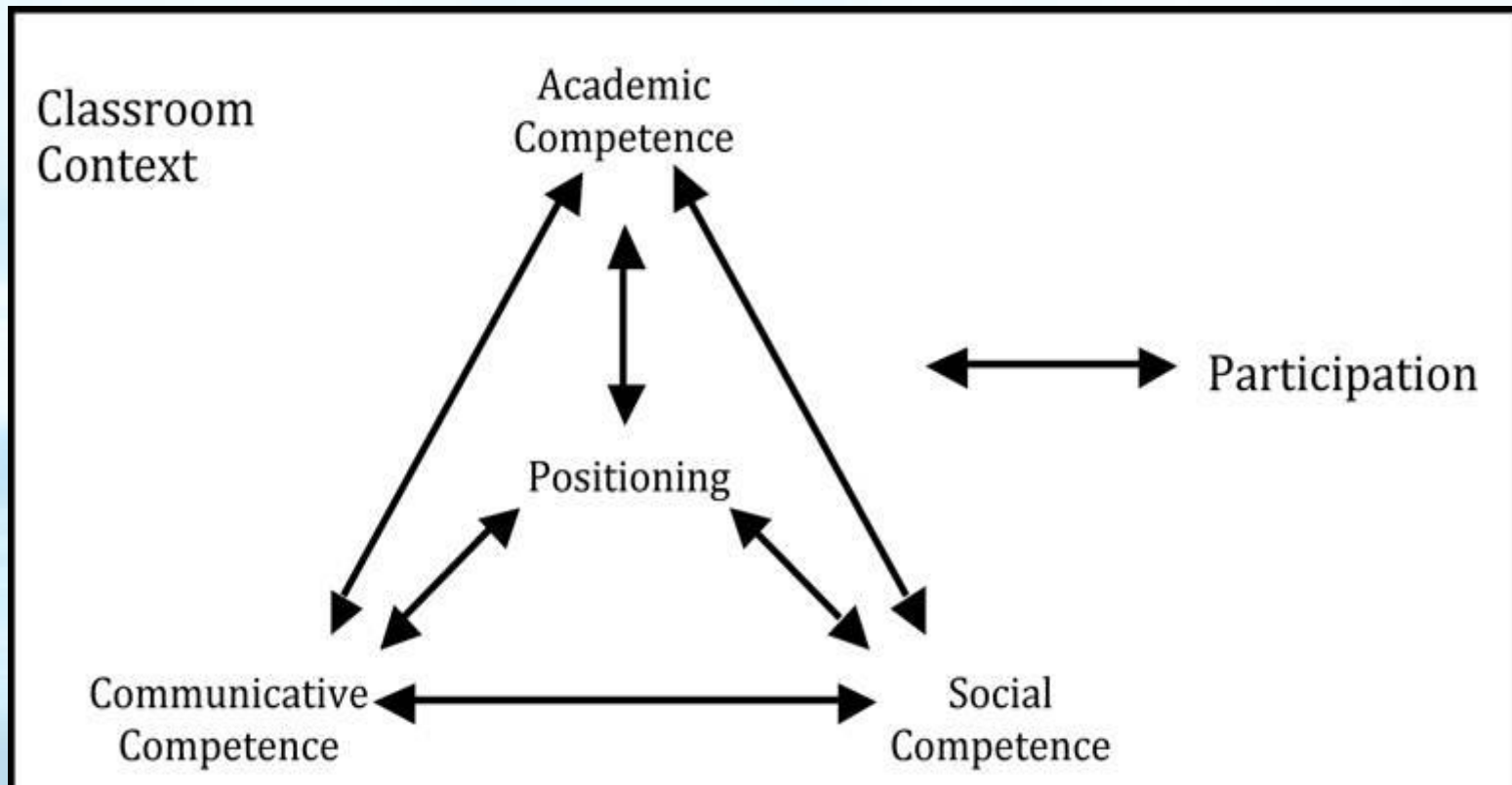
21 Item Test

11 Multiplication items

4 Division Items

6 Fraction Items

Positioning is Critical



(Pinnow & Chval, 2014)

Starting with Our Perspective

Positioning starts with how we view others. A deficit perspective results in a limited view of MLs' potential and this thinking will be present in our words and actions toward these learners.

Perspectives Can Change

Beth: At the beginning I didn't really expect a lot from Javier just because he was so quiet and I wasn't really sure if he knew what was going on for the most part... I never imagined that he would be able to be one of the students that I am going to ask to help other students.

Chval: Why?

Beth: I think that's because of him being Hispanic. I have never had a [Latino] student in my room be able to do that.

Chval: What do you learn from this?

Beth: That I am wrong.

Communication Acts

- “Andrea, you **help** José.”
- “Now go a little slower. Work with the second one (pulls Janessa’s paper closer to Rob’s), You’re (referring to Rob) going to go **Janessa’s speed today**, okay?”
- “I’ve talked to Alonso about this because we’ve had a conversation about, “Oh have you, did you share your work like at your old school? Did you go up and share your thinking about things?” He goes, “No, we would do our work.” And I said, “Oh, like we do? And so I said, “Well what did you do like for sharing?” And he said, “**Well we always worked by ourselves, we didn’t have partners—we worked by ourselves.**” And I said, “Well did you go and show your work? And he said, “**No, we didn’t do that.**”

3. How would these communication acts position MLs?

Imagine If Students Thought:

- I must not be able to do it because they don't ask me to do it.
 - It is easier to sit back and watch.
4. What would you think if your teachers did not call on you? What emotions would you feel?

Communication Acts

Verbal talk, actions, gestures, other non-verbal communication, and even silence are used to position oneself or others (Harré, 2012).

- Positioning can be as much about what the teacher **does not do**, as it is about what acts they do take.
- An absence of appropriate acts can do the same damage as outright negative acts.

Consequences

Yoon (2008) argued, “The main reason for [MLs’] anxiety, silence, and different positioning has much to do with being outsiders in the regular classroom context” (p. 498).

Storylines Are Circulated

- Within each social interaction, there are multiple storylines at play, drawn from participants' cultural, historical, and political backgrounds and experiences.
- *Storylines* occur on different scales, such as individual, class, or school. For example, a storyline about a child who is not motivated to learn that gets passed from one grade level to the next. This storyline can get perpetuated over time across teachers and classrooms.

Davies & Harré, 1990; Harré & Van Langenhove, 1999;
Harre & Moghaddam, 2003; Herbel-Eisenmann et al., 2015

5. Identify statements or messages that you have heard about MLs in the chat.

Influence of Storylines

6. How can different storylines influence how multilingual learners are treated by their peers?
7. Are there storylines about MLs you want to alter? If so, how will you alter them or promote new ones?

What Research Says

To facilitate participation of MLs, teachers must provide opportunities, promote active student participation in discussions, and recognize the resources that MLs use to express mathematical ideas.

(Brenner, 1998; Brown et al., 1993; Moschkovich, 2002, 2013, 2015; Turner, et al., 2013; Zahner, 2012)

Role of the Teacher is Critical

Research examining classroom interactions emphasizes the role of the teacher in promoting ML academic success and participation (DaSilva Iddings, 2005; Verplaetse, 2000; Yoon, 2008).

When teachers position MLs as powerful, their participatory behavior and the way they are treated by their peers changed (Yoon, 2008).

Positions

- Positions: A role or identity that a person can take on or have applied to them by others.
- A person may position, or be positioned, along a continuum of categories in any given interaction (e.g., decisive or tentative, dominant or submissive, competent or incompetent).
- *Positions* in classrooms are social in that they can be viewed as the rights and duties that participants are required to carry out in specific social interactions.

Positions

Ms. Martínez Positioned Students As:

- Family Members
- Teachers
- Listeners & Contributors
- Role Models
- Experts

Family Members-Day 3

1. *Ms. Martínez:* Matthew, we care about you, so what can we do to help you out? Because this is a family right here. We spend lots and lots of hours together, don't we?
 2. *Matthew:* Yes.
 3. *Ms. Martínez:* **So we are a family**. When you do something, it affects all of us, doesn't it? ...Do you **care** about us?
 4. *Matthew:* Yeah.
 5. *Ms. Martínez:* How are you going to show us that you care about us?
- Ms. Martínez:* We have to share things. That's how we learn. That's how we show people that we **care** for them.

Teachers-Day 3

1. *Ms. Martínez:* Can we go down to the purple rule?
2. *Students:* Encourage participation.
3. *Ms. Martínez:* Encourage participation. Are you allowed to move around the room quietly?
4. *Students:* Yes.
5. *Ms. Martínez:* Yes. So Dalia was asking Alejandro, and Alejandro didn't know what to do. Alejandro wasn't participating because he never asked for help. So somebody over here. Anybody. You move around. I'm only one person. Move around quietly and ask each other. **You can teach each other. Walk around. Help each other. I can't help all of you at the same time.**

(Chval, 2012)

Listeners & Contributors

Day 6

Ms. Martínez: How do I know you're listening carefully? How does anyone know that you're listening carefully? What must you do when you are listening carefully?

Students: By looking at the person.

Ms. Martínez: You look at the speaker and you focus your attention on the speaker completely. You're not playing with anything inside your desk. You're not looking through a folder. You're not chatting with a neighbor; you're listening.

Day 11

Ms. Martínez: You're going to be a good listener. So you are going to look at whoever answers, or whoever completes an answer. Because sometimes people have part of the answer, and **another person helps out and completes an answer.**

(Chval, 2012)

Positions

8. What positions do you want to see for MLs in mathematics classrooms?
9. What rights and duties do you want MLs to have in mathematics classrooms?

Strategies

- a) Recognize your role in positioning.
- b) Recognize the resources that MLs use to express mathematical ideas.
- c) View MLs as assets to the classroom and challenge deficit-based storylines.
- d) Support ML participation in whole-class discussions so they are not relegated to spectators.
- e) Work with MLs over time to equip them for success. Be specific about ML contributions.
- f) Encourage MLs to “teach” peers.

Strategies

- g) Ask MLs before they present so they can prepare their thoughts (Verplaetse, 2000).
- h) Project MLs' work on the screen so they can use gestures & refer to it while they present.
- i) Learn from MLs by encouraging them to share their thinking and approaches to math problems.
- j) Assess student competencies before making comments in front of others.
- k) Watch MLs solve problems in real time to assess their mathematical understandings.
- l) Analyze MLs' mathematical work.
- m) Identify how MLs are interpreting text in problems.

Strategies

- n) Use your authority to ensure that MLs have opportunities to share their insights.
 - Maintain direct eye contact with MLs as they speak.
 - Ensure MLs “gain the floor” and don’t allow other students to steal the floor from MLs.
 - Remember MLs may need “wait time.” (Gibbons, 2015).
 - Give MLs space and time to process their thoughts and speech.
- o) Assign ownership of mathematical ideas or strategies to MLs, such as “Lorena’s strategy.”

Positioning Can Change Interpretations

Antonio walked $\frac{3}{10}$ of a mile in the morning. He then walked $\frac{2}{5}$ of a mile after school.

Antonio said he walked $\frac{5}{15}$ of a mile. Is he correct? Explain your thinking.

Student A

No, walked $\frac{2}{5}$ and $\frac{3}{10}$
 not $\frac{5}{15}$.

Student B

$$\frac{9}{30} + \frac{12}{30} + \frac{10}{30} = \frac{31}{30}$$

Student C

$\frac{5}{15}$ less $\frac{2}{5}$.
 No he rong.

Student D

$$\frac{3}{10} + \frac{2}{5} = \frac{5}{10}$$

yes.

Final Reflections

10. What are new ideas that you will consider as you examine positioning of MLs in your classroom, school and community?
11. What are discussions your community needs to have about first impressions?



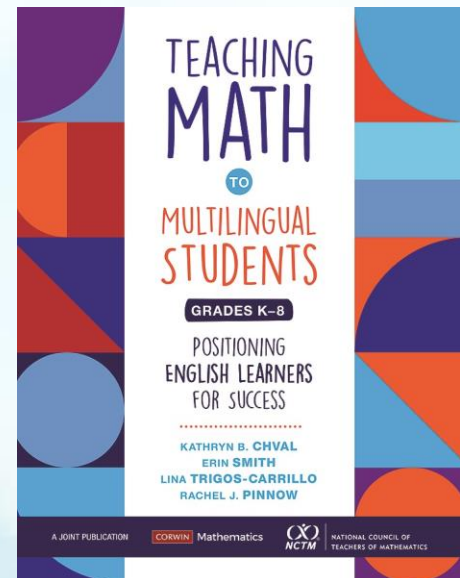
Thank you!

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Poll

Which topic, in relation to MLs and mathematics, would you like to invest time to discuss in more depth?

1. Facilitate MLs' Participation
2. Facilitate Partnerships Between MLs & Peers
3. Use Culturally-Relevant Contexts
4. Use Visuals and Gestures
5. Analyze Mathematical Work of MLs
6. Enhance Language Development
7. Use Teacher Discourse
8. Foster Writing
9. Enhance Curriculum Materials
10. Engage with Parents and Families



Resources

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