Interactions Between Latino/a Parents and Their Children When Doing Mathematics Together

José María Menéndez
The University of Arizona

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Background

• Traditional perspectives on parental involvement
  – Teacher-parent conference
  – Classroom “helper”

• New perspectives
  – Mathematics workshops
  – Parents as mathematics knowers and doers
  – Parents as teachers
    (Abreu, Cline, & Shamsi, 2002; Civil, 2002; Civil & Andrade, 2002; Ginsburg, 2006; González, Andrade, Civil, & Moll)
Data Collection

- Video recordings of
  - Mathematics workshop meetings
  - Workshop debriefings
  - Home interviews
Settings - the school

- Middle school (6th to 8th grades)
- Borderland city in the U.S. Southwest
- 94% Latino
- 87% low SES
- 25% English language learners
Redefining boundaries

Parental roles dictated by the school

Parental roles at home

Multiplication facts

homework

Mathematical games

Household chores

Area of blurring boundaries
Games with the family

Learning from dominoes

• Scoring during the game
  – Only count points that are multiple of 5 (adding all end points of the domino on the table)
  – Tally system: / X ⊗

• Scoring at the end
  – Add up other players’ points, rounded to the closest multiple of five

• Strategies
  – Which pieces are down and how many of each are there?
  – Multiple options: scoring and blocking
One example of new parental roles

- Participating in the mathematics workshops for parents
  - “So that my children see that I value learning mathematics”
  - “So that we learn to be able to help our children”
Recipes and proportions

• Task:
  – Come up with a recipe
  – List the amount of ingredients for a specific number of servings
  – Adapt the amounts to a different number of servings
Recipes and proportions

Horchata recipe:

I need ¼ kg of rice for 4 people,
How much rice do I need for 6?
Recipes and proportions

• Mathematics elements
  – Proportions
  – Basic arithmetic (subtraction, division, addition)
  – Problem solving
  – Making sense of the numbers
  – Measures and conversion of units (kilogram to grams)
Findings

• Parents as intellectual (invisible or ignored) resources
  – They have mathematical knowledge
  – They are willing to take on new roles in school

• Value of the workshops
  – Setting for mathematical interactions
  – Recognition of parents as intellectual resources by children
  – Improvement of relationships
Implications

• There is a need to refine the boundaries of parental involvement:
  – View parents as partners, not just allies
  – Increase opportunities for parents in the classroom:
    • Guest speakers about their jobs and home practices as learning opportunities
  – Increase opportunities outside the classroom
    • Mathematics family nights
    • Home visits
More implications

• Implications for mathematics education:
  – Procure more culturally relevant instruction (learning activities, homework/test items, textbooks/curriculum)

  – Acknowledge and take advantage of a blurring boundary between classroom mathematics and everyday (out-of-school) mathematics
References


Thank you!