



A Comparative Case Study of Parental Math Homework-Helping Strategies and the Use of Productive Struggle



Salvador R. Vazquez and Jennie K. Grammer

UCLA Graduate School of Education & Information Studies, Human Development and Psychology

Introduction

- A general assumption in the U.S. is that all forms of parental involvement in a child’s education leads to beneficial outcomes.
- Parental involvement in the form of homework helping does not necessarily lead to improvements in a child’s grades or test scores (1).
- Other forms of involvement (i.e., home support and parental expectations) are less intrusive and have a positive impact on student math achievement (2).
- This study focused on:
 - comparing families with different socioeconomic status and the potential impact that has on math homework help
 - and parents use and understanding of Productive Struggle (PS) — expending effort to make sense of something that is beyond one’s current level of understanding — to get a sense of whether or not parents are using pedagogically effective strategies (3)

Research Questions:

- Analysis of the data was guided by the following three questions:
 - How do parents help with math homework?
 - What do parents know about productive struggle?
 - What goals do parents have when helping with math homework?

Methods

- Three families were recruited from the Los Angeles area.
- One participating parent completed a 30-45 min. semi-structured interview.
- Participating children completed a 10-15 min. semi-structured interview.
- Each family was observed and recorded while helping the child with math homework three times at their respective homes.
- Math homework assignments were photographed after completion.

Results & Discussion

Question 1: How do parents help with math homework?

L

“Sometimes I cannot help her and when I am alone with her she asks for help but I can’t help her. I need her sister to be here.”

M

“A lot of times all that I need to do is have them go over and read the question again. And then, the other thing we do is we look for careless errors.”

H

“Um, I always let him try it by himself but I make sure that he understands what it's asking.”

- Mother in family L would attempt to help but admitted not knowing what she was doing most of the time and having to rely on her older daughter to help with math homework.
- Mother in family M would often have her children explain or reread the problems aloud as an attempt to help the children remember what they had to do. Both parents would often be doing other tasks while children did their work.
- Mother in family H would sometimes begin by clearing a space and making sure the environment was suitable for doing homework. She would also read instructions and assist when called for help.

Question 2: What do parents know about productive struggle?

L

“I have heard the term used in meetings at school and I think it is important for advancing to the next level in school.”

M

“It sounds like, sometimes you progress or learn by having diff- Kind of, fight through something, um, like you have to go through the process to get somewhere.”

H

“A productive struggle would be ‘Ah, let me go back through the steps and check again’ or ask the teacher or my parents for help.”

- Although Mother M was the only participant who said she had heard of PS before, she explained it as being necessary for advancing in school. Her focus was primarily on having her daughter move to the next grade without any mention of understanding math.
- Both mothers M and H grounded their understanding of PS within the context of learning and understanding math but had no knowledge of PS itself nor had they ever heard it discussed at school.
- Only mothers M and H exhibited strategies that may elicit PS from their children.

Question 3: What goals do parents have when helping with math homework?

L

“I want her to have a good career in the future.”

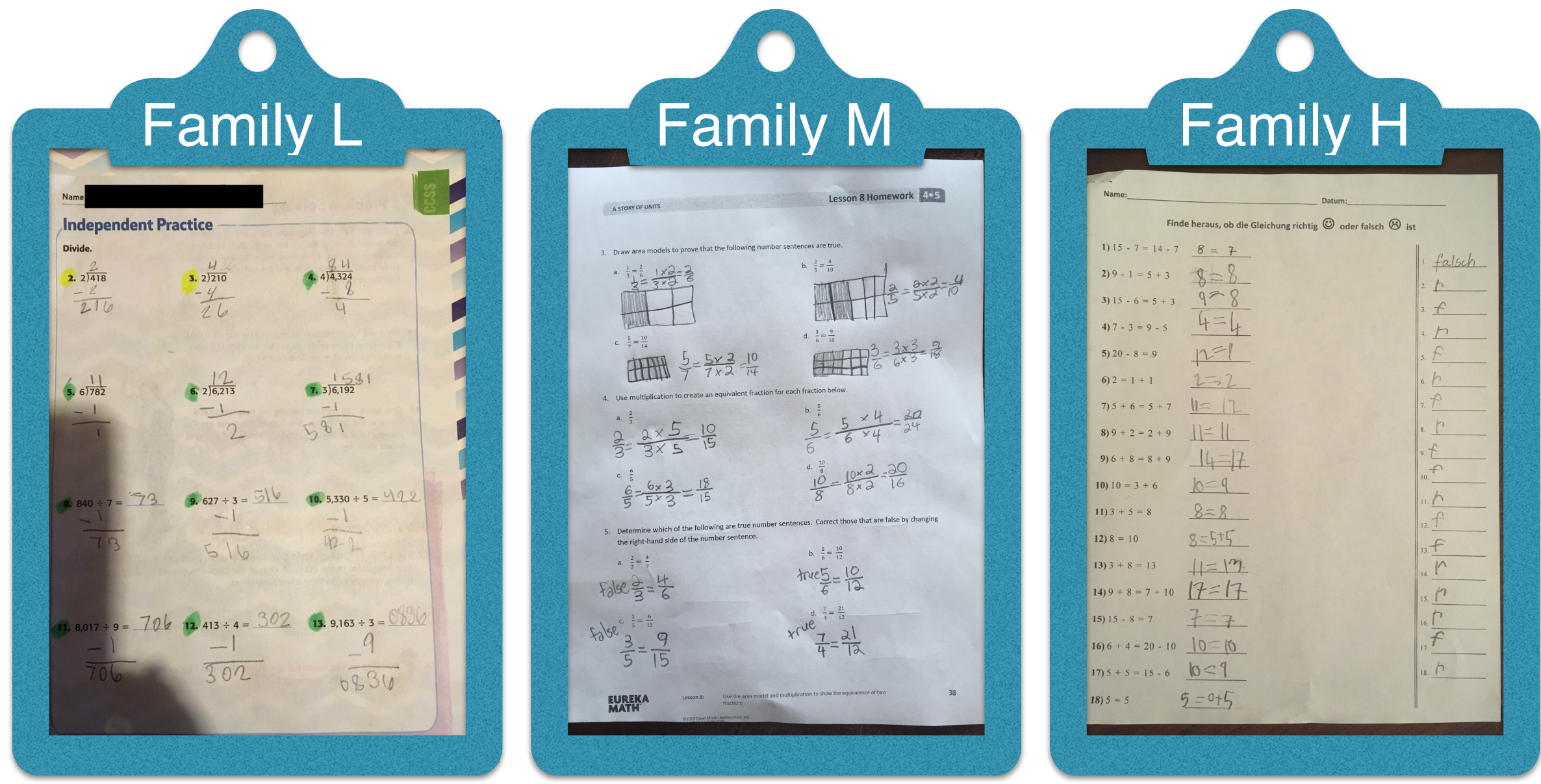
M

“I want them to do it. I think they do a really good job at school of preparing them for the homework. And so they sometimes just need a little direction.”

H

“I want him to be able to do it by himself.”

- Mother L viewed education as a means of having a better life and therefore often spoke in terms of doing well to have better outcomes later in life.
- Mothers M and H both viewed the ability to do math homework independently as a primary goal. It was difficult to discern if both mothers view independence as a necessary trait to perform well in school or if they are not confident in their own abilities to help with math homework.
- Concerns with Common Core and new types of math problems was also expressed by all parents



- The child from Family L would often complete her homework with many of the answers being incorrect even if the mother reviewed the answers.
- Children in Families M and H would always have their homework reviewed by one of their parents and mistakes were brought to their attention.

Conclusion

- All three families relied heavily on the child knowing how to do their math homework.
- Families M and H had more knowledge about math and how to help their children.
- There was a sense of angst among the mothers when discussing math. Mother L expressed a lack of confidence because she only achieved a 6th grade education and mothers M and H both expressed that math was not something they enjoyed doing.
- Goals with math homework in families M and H are in line with the idea of PS, however parents’ strategies for helping were very superficial. For instance, a child would be told they have the incorrect answer to a problem but were never asked why the answer was incorrect. Parents often assumed that mistakes resulted from carelessness and not from a lack of understanding.
- All parents agreed with the idea of PS but neither expressed an understanding of how to implement it in homework help.
- While PS may be beneficial for students learning math, parents need a basic understanding of the math their children are learning before being expected to help with homework.

References

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Table 1. Demographics			
	Family L	Family M	Family H
Income	< \$15k	\$50k - \$75k	> \$100k
Ethnicity	Mexican	White	White
Primary Helper	Mother	Mother	Mother
Mother's Education	6th Grade	Bachelor's	Ph.D.
Child's Grade Level	5th	1st and 4th	1st