



A Reflection on my Work with Latino Parents and Mathematics

Marta Civil

Abstract

This article describes research from different parental engagement projects in mathematics. Through Latino/a parents' voices, we learn about their beliefs and values about mathematics education and these findings can inform those who work with students or parents.

Discussion And Reflection Enhancement (DARE) Pre-Reading questions:

1. What experiences have you had or do you know of that involve families and mathematics teaching/learning?
2. Based on your prior experiences and/or readings, what are some resources (specific to mathematics learning) that Latino/a parents (and their children) bring to school?
3. What are some challenges that you think Latino/a parents (and their children) face in terms of the teaching and learning of school mathematics?
4. What is your definition of “parental involvement” for this context?

“DARE” Post-Reading questions appear at the end of the article. This article (without DARE questions) originally appeared in Spring 2007 *Noticias de TODOS*.

Marta Civil (civil@math.arizona.edu) is a professor in Mathematics at the University of Arizona. Her research in mathematics education spreads over two areas: teacher education and equity in mathematics education—in particular, on a socio-cultural approach to the mathematics education of ethnic and language minority school age students and adults.

A Reflection on my Work with Latino Parents and Mathematics

Marta Civil

I have been working on issues related to Latino parents' engagement in mathematics education for almost fifteen years. Research with parents is indeed one of the key areas of research in our NSF-funded center called CEMELA (<http://cemela.math.arizona.edu>; Center for the mathematics education of Latinos/as). Currently our main research study in this area is looking at Latino parents' perceptions of the teaching and learning of mathematics. In this reflection, however, I focus on some of the highlights of the work I did prior to CEMELA as a way to explain the background for our current work.

One of the original motivations for my current work was and continues to be the idea of mathematics teaching innovations that could help us bridge the gap between in-school and out-of-school learning. Our work takes place in Mexican / Mexican-American, working class communities in the Southwestern United States. Our efforts have been geared towards the development of learning environments that build on the students' and their families' knowledge and skills. But, how do we uncover that knowledge and those skills that all families have? Through the Funds of Knowledge for Teaching project and then later during the Bridge project, the teachers (sometimes accompanied by university researchers) visited the homes of some of their students. Using in-depth questionnaires (on family history, labor history, perspectives on education, uses of mathematics at home and at the work place), these teachers were able to uncover some of this knowledge and those skills/experiences that reside within the households. Our challenge

then was to use this knowledge in learning modules that would make mathematics more meaningful (both from a cognitive and from an affective point of view) for the school children. These household visits certainly had an impact on the teachers in that they saw the families and "the home as a real learning place, real learning environment, you know I didn't think it was so much a learning environment as it is" (teacher's interview).

But to me the most rewarding and eye-opening experience was another activity we developed towards this effort to bridge the gap between in-school and out-of-school, namely, our mathematics workshops for parents. Through these workshops, we do not only learn about the parents' ideas and perceptions about the uses of mathematics and about their children's mathematical education, but we engage in joint explorations that allow us to establish a two-way conversation grounded on the learning and teaching of mathematics. It is important to note that the success of this approach is in its continuity: these are not isolated workshops, but rather series of sessions with the same group of parents: sometimes we call them "math for parents courses", but our preferred term lately is "tertulias matemáticas" (mathematical circles). We (parents, university personnel, and sometimes teachers) come together to do and talk about mathematics. Our workshops are modeled after the work we have been doing for years in professional development for teachers. They are highly participatory, hands-on, and centered on what we view as meaningful school mathematics tasks.

What have we found out from these “tertulias matemáticas”?



Parents engaged in mathematics

Parents like being learners of mathematics

Although most of the parents originally come because they want to help their children, they soon become interested in the content as learners themselves. The parents in our projects have made it very clear that academic mathematics is important to them. They want to learn this type of mathematics to help their children, but also for themselves, as this excerpt from a mother’s reflection captures quite well:

I am so happy with all these mathematics workshops because I realize how to help my children understand mathematics in a different way, from a fun approach, all together as a family. ... And also for us, because one never knows when we may use it, and this way we move forward, and no one is going to mandate that it has to be the way they say, because we also think and solve problems.

Parents value teaching for understanding

Parents enjoy finding out the “why” behind the many things they had memorized as children in school.

[This project] has been very different from my previous experience (with math). I went through my whole life being told how things were not and not given any freedom to figure it out on my own. Being able to experiment with blocks or whatever is much more interesting.

I’m amazed because [I see] something that I didn’t see before, and it clicks in my mind and I understand why things are the way they are. I get excited because now I know, I’m not accepting it, now I know why that is the way it is.

We argue that if parents learn mathematics with an emphasis on understanding rather than rote memorization, they are more likely to become quite vocal about the importance of understanding for their children’s mathematics education. As one mother very eloquently said, “I don’t want them [teachers] to teach to the test. You have to be versatile in many things. If you don’t understand, what’s the point?”

Parents bring their own beliefs and values

Like everybody else, parents often have deep-rooted beliefs about the teaching and learning of mathematics. A clear example of this is with the algorithms for division. In all the workshops where we have parents who learned how to divide in México, this topic comes up. As they compare the methods traditionally taught in México and in the U.S., comments along the lines of “their” method being more efficient (because they write less as they do the subtraction in their heads) always come up. These differences in approaches are fantastic opportunities to engage in not only the mathematics behind the different methods but also in a conversation about issues related to the teaching and learning of mathematics. Another salient topic among immigrant parents is the

differences between the educational systems:

No, I'm not happy [with the system at her son's school]. I feel that there is repetition of a lot of things; I don't understand why the teaching is so slow, I don't like it, I don't like the system, I don't like it at all. When we go to México, my nieces and nephews or my husband's nieces and nephews, they are children that are more or less the same age as Jaime and I see that Jaime is behind. Here they tell me that Jaime is really excellent.

To me, this is not about discussing which system is “better.” But we have to be aware that parents are going to bring up these comparisons and that these perceived differences may lead to conflict between parents and teachers. We all bring our valorization of knowledge. But these differences may also lead to conflict between parents and children:

Last night my son said to me that school from México was not valued the same as school here, that is, it doesn't count. What I studied there doesn't count here. He knows that what is taught here is different from what is taught there and so he says, 'why would I ask my Mom for help if she's not going to know.' So, there is a barrier.

Parents have mentioned to us that when they try to help their children with the mathematics homework, they often run into two obstacles—the language (English / Spanish) and the mathematical approach. Several of these parents have mentioned how they know the content but they do not know it the way their children are learning it and then they (or sometimes their children) feel that they cannot help them:

He [her son] doesn't feel very sure that I am understanding him because the problem is

written in English. I don't know how to read it and he doesn't...know how to translate well for me because he speaks Spanish and reads Spanish, but we say different things for the same words and questions, I think he thinks I studied differently.

Parents value “confianza” (trust)

As I mentioned earlier, this kind of work requires time. It is not about isolated workshops but about establishing rapport and connections with the families. I want to end stressing the importance of the concept of “confianza” when working with parents.

When I joined this group, for me the most important foundation was the confianza that each one offered me.... I can say that all that I now know and have learned has been accomplished by means of the confianza (a mother reflecting on her experience with the math workshops).

At last, I also have someone that more than a teacher is a friend and most importantly inspires me: Confianza, the confianza that I in particular never had with any other teacher of mathematics. ...Thanks to the confianza that exists in the group we can work without problems and pose any sort of question without fear.

This concept of “confianza” is not only important for the parents in the workshops. The final excerpt below is from a fifteen-year old reflecting on the impact that these workshops had on his mother:

Now that she [his mother] is attending these workshops she is learning in a different way, understanding the why of the formulas and where they come from and how they can be applied in her life; she shares it with the entire family and we all get involved in a mathematical gathering that is

fun. We are all teachers and students at the same time, there is no difference and that there be much respect and confianza is most important.

Acknowledgement: The work reported here was supported by the Educational Research and Development Centers Program, PR/Award Number R306A60001, as administered by the OERI (U.S. Department of Education) and by the National Science Foundation (NSF) under grants ESI-99-01275 and ESI-0424983. The views expressed here are those of the author and do not necessarily reflect the views of the funding agencies.

Discussion And Reflection Enhancement (DARE) Post-Reading Questions

1. What are some experiences you could develop to engage with parents in a two-way dialogue?
2. The article's author believes in encouraging the sharing of different approaches to doing mathematics such as multiple algorithms for the basic arithmetic operations. What experiences have you had (e.g., with your students) in sharing different approaches? What are some benefits and challenges involved with this?
3. What strategies do you (or could you) use to help overcome "the language barrier" that parents who do not feel comfortable with English may encounter when it comes to helping their children with homework or other school-related issues?
4. What are some implications of the concept of "valorization of knowledge" for the teaching and learning of mathematics?
5. What strategies could you use to learn more about the knowledge and experiences that your students and their families have? What implications would this additional information have for your teaching of mathematics?

"DARE to Reach ALL Students!"

