

## **Stepping Out of the Classroom: Building Teacher Knowledge for Developing Classroom Practice**

**By Mary Q. Foote**

This study presents the case of one kindergarten teacher who, in order to reflect on and address her classroom practice in mathematics, conducted an in-depth examination of a single child in her classroom. This examination took place within the context of a Professional Study Group of elementary school teachers, all of whom were White, and all of whom were studying an African-American child from their own classrooms.

The growing diversity of students in United States classrooms is met with a teaching force that continues to be over 80% White and middle class (Howard, 1999; Nieto, 2004). Research indicates that White teachers often have difficulty relating to children who are not White and middle class (Nieto, 2004). This may be due in part to differences in lived experiences that exist from one cultural group to another. Know-

ing the middle-class White experience may support middle-class White teachers in validating that experience. Knowledge of and respect for lived experiences that are *not* middle class and *not* White, therefore, may provide a base from which White middle-class teachers can develop a sensitivity which can support them in better understanding and relating to the students who come from backgrounds different from their own.

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Because children's thinking, mathematical and otherwise, develops in the multiple contexts of their

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lived experience both in and out of school, careful consideration of children's thinking and the multiple social contexts in which it develops may support teachers in becoming better teachers of mathematics for all children including those students from non-dominant groups. As several researchers have pointed out, teachers need to know children as well as subject matter in order to teach them well (Ball, Lubienski, & Mewborn, 2001; Ladson-Billings, 1994a; National Research Council, 2001). This suggests that attention needs to be directed to issues concerning students as well as issues concerning mathematics content in developing effective mathematics teaching practice. Reaching beyond the confines of the classroom may enable the teacher to access competencies and knowledge that the child possesses but that have not been taken up in the classroom in a way that supports that child's learning.

Ladson-Billings (1994a; 1994b; 1995) proposes that it is necessary to understand and to build on the community practices that children bring with them into the classroom. She argues that in addition to being mathematically substantive, instruction must also be culturally relevant. Echoing this notion, Villegas (1993, as quoted in Zeichner & Hoeft, 1996) contends that "making home visits, conferring with community members, talking with parents, consulting with minority teachers, and observing children in and out of school" are ways in which teachers can begin to understand the cultures of the children in the classrooms who are not like themselves (p. 538). These methods have supported teachers in making deeper connections with students' lived experiences.

In reviewing the work of a number of researchers, Banks (2004) concludes that "thick descriptions of the learning and cultural characteristics of students of color are needed to guide educational practice" (p. 20). In other words, research suggests that it may be profitable to consider whether a close and deep investigation of children in the multiple contexts of classroom, school, and community can provide teachers with a repertoire of knowledge to draw on to better support children's learning.

#### ***Examining Student Thinking in Mathematics***

There is significant professional development work that has been done within mathematics education around using a close examination of student work (Carpenter, Fennema, Franke, Levi, & Empson, 1999; Gearhart & Saxe, 2005; Kazemi & Franke, 2004). This study built on the work of Carpenter and his colleagues (Carpenter et al., 1999; Carpenter, Fennema, & Franke, 1996; Carpenter, Fennema, Peterson, Chang, & Loef, 1989) who supported teachers in a close examination of student thinking in mathematics in order to change classroom teaching practice. Other work outside of mathematics education, such as the Descriptive Review Process (Himley & Carini, 2000) which will be discussed in more detail below, has used child study as a route to improving teaching practice more generally. While this work has most often been limited to school based examinations, the present study, building on the funds-of-knowledge for teaching project (González, Andrade, Civil, & Moll,

2001) expanded this important work to include a study of a child's experience and knowledge base outside of the school setting as well.

#### ***Funds-of-Knowledge for Teaching***

Moll and associates (González et al., 2001), through their research program known as the "funds-of-knowledge for teaching" project, propose that understanding the context in which a child operates outside of school and the expertise and competencies that she or he shows in that context can be a powerful insight for a teacher that can support him or her in establishing a connection to that child which can in turn support the teacher's growth and development. From the onset, the funds-of-knowledge project had as one of its explicit goals to reject a deficit theory model for the education of minority students (Moll, 1992). It adopted as its premise that it is possible to capitalize on students' and their families' experiences. In other words the project was based on a belief in the student as a person with a broad base of valuable experiences and resources.

As part of the funds-of-knowledge project teachers went as learners into students' homes. One of the byproducts of these visits was that the usual dynamic between parent and teacher was changed and the knowledge that the family possessed was honored (Civil, 1995). Instead of the deficiencies that are often expected, teachers were supported in seeing the positive aspects of the families; parents were now seen as resources for their children. Civil points out the importance of delving into the particular in order to address the needs of each student. She notes, "A key aspect of our work is to get to know as much as we can about each individual student" (1995, p. 13). In the context of this study, knowing as much as possible about the individual student included observing his demonstrations of knowledge and competencies in both the home setting, and in school settings beyond the classroom.

#### ***Photography: An Alternative Methodology***

Photography is an alternative to home visits that researchers and teachers have used to access the homes and lives of children and families. The PhOLKS Project was a professional development effort that built on the funds-of-knowledge project, substituting photography for home visits as the mechanism for documenting the home and community funds-of-knowledge (Allen et al., 2002). Students took photographs of important people and events in their out-of-school lives; the teachers' views of the children were enriched by seeing them in relationship to adults in their home lives. Not only was the community of the classroom extended to include the children's home communities, but also teachers saw children assuming roles and identities other than those the children typically demonstrated in school.

The use of photography supported the teacher-researchers' access to more families than the home visits of the original funds-of-knowledge work had allowed. Along with being less time consuming and possibly less intrusive, the locus of power was shared with the family as they became the active agents in documenting the

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funds-of-knowledge in their homes and communities. Photography also served as a language neutral manner in which to document these funds-of-knowledge, obviating the need for translators to accompany teachers or researchers on home visits.

#### ***Professional Development that Examines the Case of an Individual Child***

One professional development approach that has supported teachers in learning about particular children so as to become better teachers of those children is called the Descriptive Review Process (DRP), and involves taking an in-depth look at an individual child (Himley & Carini, 2000). The DRP is a ritualized close look at a particular child that generally happens within the context of an on-going study group of teachers. The study groups that use the DRP operate in consistent ways. At each session one of the teacher members presents a portrait of a student to the group for review. The goal is for the teacher to present an informed picture of the child, to ask questions and raise concerns about the child, and to receive feedback from the other members as to next steps that the teacher might take in supporting the child's learning. The focus of the study groups is most often not of a content specific nature; it is each teacher in turn who identifies an area to address in relation to work she wants to do with a particular child. This could be an academic area such as learning to read, or a social area such as integrating a child more successfully into the life of the classroom.

The Descriptive Review Process is similar in many ways to the funds-of-knowledge work. In both these cases the emphasis is on the particular student and a belief in the particular as a helpful entry into issues of practice. The type of examination engaged in during the DRP, supports teachers in seeing children's strengths and thus identifying the locus of control and possibilities for change within themselves and not within the child or his environment.

#### **Introduction to the Study**

The goal of this particular Study Group was to support a group of elementary school teachers in becoming better teachers of mathematics. The Descriptive Review Process was used as a vehicle to focus specifically on the development of mathematics teaching practice. The focus also included a consideration of other aspects of the child, in addition to mathematical thinking demonstrated in the classroom. The teachers reached beyond the mathematics classroom into the greater school context and beyond into the home and community in order to access interests and competencies that the child possessed and which might be used in the service of his or her learning of mathematics.

This study then, included an exploration of alternatives that have been used outside of mathematics education such as the Descriptive Review Process, and the use of photography to access home and community funds of knowledge, while at the same time addressing issues of student thinking in mathematics by using the Cog-

natively Guided Instruction framework to examine student thinking in mathematics within the classroom (Carpenter et al., 1999). For the purposes of this article, the activities that the teachers engaged in which focused their attention outside of the classroom to learn about their target students, are the ones which are discussed.

Study Group activities included (a) shadowing the student in school contexts to which the teacher does not typically have access, and (b) meeting with the student's parent to become informed about out-of-school interests and competencies that could support changes in mathematics teaching practice. One contribution of this study is that it built on the methods of the DRP in two ways: first, it used a focus specifically on mathematics teaching and learning to reflect on and inform classroom practice in mathematics, and secondly it expanded the spaces into which teachers looked for evidence of a child's experiences and competencies. Teachers literally stepped outside of the classroom in order to inform their classroom teaching practice of mathematics. After providing a brief description of the Study Group, I present the case of one particular teacher as an example of learning that happened as a result of her participation in the Study Group, and changes in practice she was able to implement based on that knowledge gained.

## Methods

### **Setting and Participants**

Six teachers (all of them White) from a single elementary school in a moderately sized Midwestern city participated in a semester-long Professional Study Group. The experience of the teachers ranged from eight to 17 years of teaching. They taught various grades from kindergarten through fourth grade. This article focuses on the experiences of one of the Study Group participants, a kindergarten teacher I call Ellie.

### **Researcher Position**

I was the facilitator of the Study Group and used it as a site where I could both support and research the teachers' efforts. In the Study Group the teachers each examined the in-school and out-of-school experiences of a child from their respective classroom who both struggled in mathematics and came from a background unlike their own. I was and continue to be interested in how White teachers can be supported in becoming multicultural or culturally relevant teachers. A question that I was examining as I engaged in this study was: How does participation in a study group in which teachers explore the in and out-of-school experiences of an individual child contribute to a teacher's growth and development as a teacher of mathematics?

### **Data Gathering**

The study group met for 12 two-hour sessions over the course of one semester. Ten of the 12 study group sessions were devoted to a Descriptive Review (Him-

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ley & Carini, 2000) of one of the target children. These 10 sessions were divided into two rounds of five sessions. In this way each teacher made two presentations about her student (with the two kindergarten teachers presenting at one session to accommodate the time available). Forty-five minutes to one hour of each of the 10 Descriptive Review meetings was devoted to the presentation of one target child by one teacher. The balance of time during each of the 10 meetings was devoted to (a) questions, comments, and recommendations from the other participants about the presentations just made, and (b) informal updates by the other participants on their own target students. Teachers were also given a number of optional articles to read that addressed such issues as culturally relevant pedagogy, the Descriptive Review Process being used in the Study Group, and parental perspectives on children's learning. These articles were not explicitly discussed during the Study Group sessions.

The teachers accessed information about the target child in out-of-classroom contexts within the school by shadowing the child. Parents of the target children were also enlisted to participate in the study. They were asked to meet with their child's teacher to discuss their child's interests, experiences, and expertise outside of school. The parents were asked to bring to this meeting, photographs of their child in home and community settings engaged in activities they enjoyed and/or at which they were particularly competent. Cameras were provided to the families and the cost of developing and printing the photographs was covered by the study. The photographs were used to support the discussion between parent and teacher (Allen et al., 2002; Spielman, 2001). These experiences of shadowing and conferring with parents proved crucial in supporting changes in practice that addressed the needs of individual learners.

The data in the study were generated before, during, and after the Study Group sessions. Before the Study Group began, I conducted structured interviews (Glesne, 2006) with each of the teachers. During the Study Group sessions, the presentations and the responses to them were audio-taped, and the researcher took field notes. At the end of each session, teachers generated written reflections. In addition, I met with each teacher before her presentation to the Study Group in order to assist her in preparing the portrayal of her target child. These sessions were also audio-taped. After the conclusion of the Study Group meetings, I again conducted structured interviews with the teachers. At the conclusion of these interviews, the teachers produced a final piece of reflective writing. Both initial and final interviews were audio-taped. Field notes were made during meetings between teacher and parent, although these meetings were not audio-taped. All audio recordings were transcribed and thus the data record that was analyzed consisted of transcriptions, teacher writing, and field notes.

### **Data Analysis**

In order to attend to the growth and development of the teacher's thinking about the target student's mathematical thinking and the teaching of mathematics,

data analysis began with the onset of the study and was an ongoing process. As transcriptions of all audio-recordings were finished, these data along with other written data were available for beginning analysis. As soon as the data resources for a week were complete, they were read through several times. I then constructed a narrative data record of the week, attempting to generate a rich description of the events of that particular week (Erickson, 1986; Graue & Walsh, 1998). In this way I was interacting with the data on a continuing basis. I broadly categorized (or coded) the data as to whether they pertained to issues of the particular target students, issues of other students, or issues of teaching practice. I also was sensitive to themes that emerged directly from the data, such as the participants' views of the home environment of the target children.

When the data record was complete, the data were reviewed and analyzed by data source. As I looked across the data sources, several themes emerged on which I focused my examination. Two of these themes were (a) the relation of in and out-of-school mathematics; and (b) how knowing an individual child supported the teacher in focusing on that child's learning. The data were analyzed in two broad ways, (a) aggregated data were analyzed, and (b) individual case narratives (one of which is presented in this article) were written (Clandinin & Connelly, 1995, 2000; Connelly & Clandinin, 1995). The narrative provided a view of the degree to which this teacher was able, not only to learn significant new information about her target child that could support the teaching of mathematics to that child, but also the degree to which this teacher recognized this learning and was able to act upon it.

What follows is the story of what this Kindergarten teacher, whom I call Ellie, learned about a young boy in her classroom, and how that supported her in examining and ultimately adapting her practice to be a better teacher of mathematics (for a complete report on the original research study see Foote [2006]).

## Results

### *Initial View of the Child*

When Ellie presented her target student, Evan (both teacher and student names are pseudonyms), to the Study Group, she portrayed him as someone who was easily distracted and had difficulty attending to the activities and conversations in the classroom. In addition, because he seemed hesitant to talk in class, she had difficulty knowing what he was thinking. Ellie's understanding of his lack of attention and focus in the classroom was initially reinforced when, during the course of the day she spent shadowing Evan at school, she observed him working in a small group in a pull-out reading program.

I learned that I think I had a pretty accurate read on his activity level and his amount of participation.... [In the reading group,] at the time when most children were being drawn into the group and participating in activities that kind of ground them....you could tell that he was not engaged. He was not attending to the person

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who was speaking. He did not seem to be using the materials that the rest of the kids were using. And when he *was* using them, [the other kids] were using an alphabet chart. When he was going through the alphabet chart, they were playing a game finding letters.... So when you looked at him you could not see that he was connecting with anything going on.

What Ellie observed in the reading group coincided with her experience of Evan in the classroom. Evan was someone who was seemed continually “out of step” with the flow of the classroom activities, rarely connecting with the classroom program. Although one can read Evan’s behavior in the reading class, not as a lack of engagement, but rather as simply being a step or two behind the others, Ellie reads it as another example of a more generalized difficulty in attending to classroom activities.

#### ***Discovering Knowledge in Other Spaces***

When Ellie went out onto the playground to observe Evan later that same day, she found evidence that he indeed had connected with what had gone on that morning in the classroom.

When I did my observation of him, I found that I was underestimating what he was taking in and what he was doing during all these different kinds of times when we were doing math.... I discovered that all the stuff that had been going on in the morning was very, very meaningful to him. He was out on the playground telling anybody and everybody who would listen, “I’m doing this because we have a new mouse in our class and his name is George and he’s brown and he’s silky and he’s got four little feet,” and he’s going through the whole thing about one event, and then he’s starting to share more information. And if you would have asked me if he was even aware of the mouse in the room I would have said no. And so what I came to appreciate across the day as I watched him in different situations was that he gives his feedback when he’s not involved in [classroom] activities.... He has social conversations, [but] you don’t hear the processing going on as much.

Ellie described the significance of these observations of Evan for addressing her classroom practice by saying,

So one of the real key things for me is trying to figure out ways that I can get that feedback from him, to find out what kind of meaningful stuff is going on in his brain, and what kind of meaningful math is going on in his brain because he doesn’t seem to do much sharing at all during our work times.

As a result of this experience, Ellie began to interrogate her teaching practice. She now saw that Evan had a knowledge base she had not been aware of. She recognized verbal strengths that Evan demonstrated in this out-of-classroom setting and she began to explore ways to bring those strengths out in the classroom.

Ellie recognized the importance of verbalization for mathematics learning because as she said, “I’m going to be relying on him to communicate problem solving.... The big question for me is how do I get information from him about

what he's doing when he's problem solving." Ellie spoke of changes she had made in her classroom structure in order to build on Evan's interests while supporting him in having a place in the classroom to verbalize his understandings.

I've been thinking about his love for play and how I'm not getting a lot of verbal feedback and so I've been trying to do some more structured play in the classroom. I've been trying to create situations where there are certain kinds of things to use to see if we can build some language and context of different activities to support him starting to talk a little bit more about things. Because I watch him, and I see him being an observer. And I'm looking for more kinds of thing to try to get that kind of feedback into the classroom so that I have a better sense of what kind of learning is taking place.

Ellie's solution to supporting Evan in being able to explain his thinking in mathematics included restructuring her classroom program to support story telling and verbal interactions in a variety of classroom settings. Her thinking was that if she could create safe spaces for Evan to begin to participate in class discussions, this verbalization within the classroom could then be extended to include discussion around mathematics.

#### ***Problem Solving in the Wild***

Before engaging in the experiences of the Study Group, Ellie thought of Evan as a child who was slow to engage socially with other children. She connected this with her perception of his lack of verbal engagement with classroom activities.

I see him playing with other kids, but I don't always see him doing a lot of interactive play. I sometimes see more of a parallel play.... And I was thinking that maybe it's just part of the verbal exchange piece not being there.

Once again, what she observed on the playground shed new light on Evan.

Out on the playground at lunch time he was having a racing game with a friend. And they were going from one end of the fence to the other.... At one point I saw the little guy he was racing with sitting down [with] his coat up over his head and he was sad.... I had noticed that Evan had won every lap that they had taken. And so I watched and Evan went back to the [end of the] fence and [the other child] went [ahead] about a quarter of the way and I heard Evan say, "On your mark, get set, go." And he gave him a handicap and they took turns and one time [the other child] would have a handicap and win. And the next time they'd both start at the fence and then Evan would win. And they took turns going back and forth.

So in the social sphere as well, Evan performed in ways that exceeded Ellie's expectations. She later talked about how, in the classroom, she had been able to build on Evan's fine tuned sense of empathy and justice, calling on Evan to support other children in need of comfort. In addition, this playground observation allowed Ellie to see Evan as a competent problem solver, and she began to think about enlisting this skill in the service of mathematical problem solving.

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### ***Honoring the Parent's Perspective***

Her meeting with Evan's mother to review the photographs the mother had taken was also a significant event for Ellie. Parents participated in the study by photographing their children in the home and community when the children were engaged in activities which interested them, or which they were good at. Parents were asked to pay particular attention to activities that involved number. The parents then used these photographs in a meeting with the teacher as an artifact to support discussion of the child's strengths. In this way, the power dynamic between teacher and parent was reversed, with the teacher going to the parent for information about the child. The parent knowledge base was privileged. After Ellie met with Evan's mother, she discussed one photo in particular which had informed her understanding of Evan's performance in mathematics.

The picture that impressed me most from a math point of view was the picture of him counting the jewels on a transparent plastic belt that he was looking at.... I bet [the belt is] about 40" long and I bet there are five jewels to an inch practically.... His mom mentioned that he got to 30. That surprised me a little.

Ellie analyzed the interaction around this particular photograph in several ways. At first, she thought that the mother was overstating the child's ability since she had not seen evidence of this counting ability in the kindergarten classroom. Later she decided that the child's success in the context of counting the jewels on the belt might indeed exceed what he had shown in the school setting. She wondered if Evan's success in the belt context might be due to the stationary nature of the objects. She speculated that perhaps the organizational challenge of using counters that move around the table and fall onto the floor inhibited the child's ability to count them accurately. With this in mind, Ellie gave Evan a counting frame to use to practice his counting skills. Although the beads in the frame do move, they are captured in groups of ten on metal rods. They cannot fall on the floor and double-counting or miscounting is more easily avoided.

Indeed, with the support of this particular tool, Evan performed as a more competent counter than he had previously demonstrated in school. This is not to say that Evan should always use a tens frame to support his counting or be limited to counting with particular materials, but rather that certain tools may enhance or constrain performance, and that a child may be best supported by a teacher who keeps a keen eye out for the contexts in which that child's performance is enhanced. An important point is that Ellie moved from dismissing Evan's mother's estimation of his counting abilities to considering more carefully that her own experience was one that should be open to examination. She considered seriously and acted upon information from the parent that was at odds with her own experiences. The parent became a true partner with the teacher in supporting her child's school experience.

Observing Evan on the playground and discussing with his mother the photograph of Evan counting the jewels on a belt allowed Ellie to know Evan in new

ways. It allowed her to appreciate the ample knowledge base that Evan drew on for verbal expression and problem solving in spaces outside the classroom. For Ellie, the problem was no longer an inattentive, unfocused child with few academic or social skills, but rather the problem was her classroom which did not provide the opportunities for Evan to demonstrate what he knew. In the process she was able to shift the locus of responsibility for Evan's school success from depending on changes being made by the child himself, or by his family, to something over which Ellie had some control.

### **Discussion and Implications**

The classroom offers teachers particular opportunities for observing children's academic and social performance. Because the teacher both structures and processes these classroom observations the system becomes closed: the planning, implementing, and observing of activity are all directed by the same person—the teacher. Interacting with a parent about mathematical competence at home provides the teacher with information about the child acting in circumstances that are structured by someone else and that is not viewed through a school lens (Anderson & Gold, 2006). In a similar way, observing a student in spaces outside of the immediate classroom, such as the playground, also offers the teacher a window into the child's activities and interactions in a space that is self-structured or structured by someone else. In addition to engaging in activities in spaces outside of the classroom which allowed the teacher access to additional information about the student, the Study Group itself was a forum for reflection on these activities. Ideas were also provided by other Study Group members as to next steps that might be taken in the classroom to support teaching mathematics well to this particular student.

As we see in this example, participating in the activities of shadowing the child in out-of-classroom spaces and conferring with the mother provided Ellie with access to knowing Evan in a new way and supported her to change her stance toward Evan. At the beginning of the study the problem was located within Evan. By the end of the study, due in part to the interaction with Evan's mother as well as her own observations of Evan, Ellie saw much to build on in teaching Evan. She saw him as possessing a knowledge base that she had previously not recognized. She began to see the classroom environment as one which did not provide the opportunities for Evan to demonstrate what he knew, and she began to make changes in the classroom environment and in her practice in order to build on strengths and competencies that the child possessed. She identified Evan's specific abilities outside of the classroom, she linked those demonstrations of competence to mathematics, and she brought that learning into the classroom. She identified verbal and problem solving competencies that Evan demonstrated and that she felt she could enlist in supporting his learning of mathematics. Ellie not only learned things about Evan, she learned things about herself as a teacher as well.

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Ellie also made plans for adapting her practice to address the needs of other children in her class. She planned to carve out more time in the school day to learn more about individual children and then to structure the learning environment based on her findings. Finding time in the school day to implement new practices is often difficult for teachers (Hargreaves, 1994). But Ellie had a plan. She intended to do this by restructuring what she called her “workshop time.” It was at this time of day that children would have the opportunity to explore and make choices as to what to work on. She thought that during this “choice” time, that she would be able to learn more about the individual children in her class. Ellie’s plan went beyond structuring a time to work with individuals; she had plans to build on what she learned during that time as well.

The story of Ellie speaks to the power of what knowing an individual child well can do to support reflection on and adaptation of practice (Carini, 2000). It speaks to the importance of professional development such as the Study Group where teachers can build an understanding the uniqueness of children and what they bring to school. Seeing and understanding the competencies and expertise of children and their families and understanding the potential that this holds for a child’s in-school learning, may support this kind of movement among teachers.

Although Ellie learned that her classroom environment could and should be adapted to meet Evan’s needs, her learning was also of a more general nature. She learned that she could access valuable information about children outside of the classroom that could inform the nature of her mathematics teaching practice. She learned that she could look to her own classroom organization to find solutions to issues of children’s underperformance. Grossman & McDonald (2008) have recently called for researchers to, “... move their attention beyond the cognitive demands of teaching ... to an expanded view of teaching that focuses on ... the relational as well as the intellectual demands of teaching” (p. 185). In this study, we can see that a focus that includes the relational has supported Ellie in making changes in her stance toward Evan in particular and in her stance toward teaching more generally. To teach all learners well, it may be effective to begin to know them all, one at a time.

The study contributes to our understanding of what might be effective practice in addressing the needs of children who struggle in mathematics (or another content area). While many study groups use the Descriptive Review Process (Abu El-Haj, 2003; Himley & Carini, 2000), teachers largely draw on children’s experiences within the classroom. This study demonstrates that examining spaces outside the classroom also proved to be important for discovering competencies that had not been observed by the teacher in the classroom. Civil and her colleagues have shown that learning about family and community funds-of-knowledge can provide teachers with rich sources to draw on in the classroom (Civil, 1998a, 1998b; Civil & Bernier, 2004; González et al., 2001). This study extends those spaces to include some within the school setting, but outside of the classroom. In these spaces also, teachers can learn about children and have that knowledge available to build on in the classroom.

Consulting with the parent to examine practices outside of school was also important as a part of the process of uncovering competencies. The positioning of the parent as an expert to whom the teacher went for information about the child validated the parental voice and the out-of-school space in which learning also occurs. This validation of parent knowledge stands in opposition to literature that indicates that the parental voice, particularly that of non-dominant parents, is often marginalized within the school (Martin, 2006), or that little is known of the parent perspective (Gutstein, 2006). The use of photography facilitated the interaction between parent and teachers as it provided an artifact to support the discussion. This paper, then, presents some promising practices of examining an individual child from multiple perspectives focused toward supporting his teacher to become a better teacher of mathematics for him and by extension for other children.

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