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Lessons from Research with Language-Minority Children

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Lupita, a third-grade student, pulled up a chair to a table and sat next to some classmates. She was doing research on the Sioux as part of a broader classroom project studying Native Americans, and had spent part of the morning selecting books from the school library with information about that cultural group. The students themselves had selected Native Americans as the general topic of study and were doing independent and collaborative research on their particular groups of choice. Lupita had already written several questions about the Sioux that would serve to guide her study. These questions were all in Spanish, her first language; the books she selected were all in English, her rapidly evolving second language (Moll and Whitmore, 1993).

Eventually, with some assistance from the teacher, for the texts were difficult, Lupita was able to read portions of the books that contained relevant information to answer her questions, and she translated the information into Spanish so that she could incorporate it later into an essay summarizing her findings. Her classmate, Yolanda, doing research on the Yaquis, had developed a questionnaire in Spanish to interview a teacher aide who is Yaqui and trilingual in Yaqui, Spanish, and English. She would also write her report in Spanish but other children chose English, for they had the option of using either language as needed to complete their tasks.

In yet another activity within this same classroom, a group of children decided to read a set of story books the teacher had assembled about the topic of war and how they affect people's lives (Moll, Tapia, and Whitmore, 1993). As the children read the books and discussed them among themselves and with the teacher, they struggled in understanding realistic but fictional accounts of events about other people, at other places, and in other times. They borrowed from each other's experiences in making sense of the stories, relating them to their own lives, and evaluating the worthiness of the books.

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All of the books were in English; however, they could have easily been in Spanish.

Lupita, Yolanda, and several of their classmates in this bilingual third-grade classroom are well on their way to becoming literate in two languages. Furthermore, they are becoming competent in specific literate practices that will help them to consciously and intentionally use their bilingualism as a means to accomplish personal, academic, or intellectual tasks. These third-grade children can formulate their own research questions, search for and document their sources of information, abstract relevant information from multiple texts, conduct interviews to supplement their readings, and produce texts that summarize and communicate what they have learned.

They can also read novels and stories and discuss the events, characters, styles, even the writer's craft, and relate the stories to their own experiences to make sense of them, or to reevaluate their experiences (Moll, Tapia, and Whitmore, 1993). And they can do this at will, and if bilingual, they can do it in two languages. In brief, these children are developing the wherewithal to access not one but two social, cultural, and literate worlds as resources for their thinking and development (Moll and Dworin, 1996; Moll and Whitmore, 1993).

To be sure, the literacy practices sketched above, and the classroom dynamics which support them, are not very common with working-class students. They clash with the constraints of the instructional "status quo" for working-class children in the United States, bilingual or otherwise, and the limiting perceptions of their intellectual or academic capabilities. We have reviewed these issues elsewhere (e.g., Moll, 1992; Moll and Dworin, 1996), especially the limitations imposed by an educational system stratified by social class (Oakes, 1986), the lack of access to rigorous academic work (e.g., Olsen and Minicucci, 1992), and the narrow uses of literacy typical of these settings (for related issues, see Allington, 1994). Rather than concentrate on these constraints, however, in this paper we present projects that are challenging the status quo, that are shaping these constraints by creating alternative conditions for these children to use literacy and learn in either their first or second language.

These studies (among several that we could include), conducted independently in different regions of the United States and with different ethnolinguistic and age groups, highlight both teachers and children as active learners using language and literacy as tools for inquiry, communication, and thinking. The role of the teachers is to enable and guide activities that involve students as thoughtful (and literate) learners in socially and academically meaningful tasks. Central to each of the studies and the point we want to emphasize in this article is the strategic use of cultural resources for learning. These resources may include parents participating as knowledgeable "informants" in a lesson or project, a community location as a key research site, or addressing through reading and writing social issues of importance to the students and teachers. This emphasis on active research and learning leads to the realization that these children (and their communities) contain

ample resources, which we term "funds of knowledge," that can form the bases for an education that addresses broader social, academic, and intellectual issues than simply learning basic, rudimentary skills.

Given this broad scope and emphasis, the research is by necessity interdisciplinary, and in the specific studies reported here, it involves close collaboration between teachers and researchers in questioning how children are being taught and in proposing alternative methods of instruction. Although these studies relied primarily on qualitative (Jacob, 1987) or interpretive (Mehan, 1992) approaches to educational research, including ethnographic methods of study, the researchers departed considerably from the detached, passive spectator stance that usually characterizes these approaches (cf. Ely, 1991) by participating actively in developing new arrangements for learning.

We begin with work that we have conducted with Latino (predominantly Mexican) and African-American households and classrooms in Tucson, Arizona (e.g., González et al., 1993; Moll and Greenberg, 1990; Moll, Amanti, Neff, and González, 1992). Here we define what we mean by funds of knowledge and how we are using this concept in our work. In particular, we will emphasize the teacher's research on household dynamics. We then summarize the research of Warren, Rosebery, and Conant (Warren, Rosebery, and Conant, 1989; Warren, Rosebery, and Conant, 1994) with Haitian children in the Boston area, and their use of collaborative inquiry in the teaching and learning of science. We follow with the work of Mercado (1992) on the forming of research "teams" with Puerto Rican and African-American students in New York City, and conclude with the research of McCarty and colleagues (McCarty, Wallace, Lynch, and Benally, 1991; see also, Lipka and McCarty, 1994; McCarty, 1989) with Navajo children in Arizona that challenges the common and stereotypical notion of Native American children as somehow passive, noninquisitive learners.

As we review these studies, our focus will not be on reading and writing processes per se but on how broader classroom conditions can be created that shape what it means to be literate in these settings. And in each case, becoming literate means taking full advantage of social and cultural resources in the service of academic goals.

A "Funds of Knowledge" Perspective

The centerpiece of our work is the collaboration with teachers in conducting household research (González et al., 1993; Moll et al., 1992). We start with the assumption that there are important (cultural) resources for teaching in the school's immediate community, but that one needs both theory and method to locate, identify, and document these resources. Furthermore, we also assume that it is one thing to identify resources but quite another to use them fruitfully in classrooms, so that collaboration with teachers (and pedagogical theory) is indispensable.

In contrast to other efforts at teacher-research (e.g., Lytle and Cochran-Smith, 1990), we do not start with the classroom as the unit of study, although that is our eventual goal. We take a "mediated" approach, starting elsewhere, usually by studying households. There are some compelling reasons for taking this approach. For one, having strangers scrutinize one's teaching is not a very good way of creating a working relationship between teachers and researchers. Goodson (1991) has made a similar point by arguing that making classroom practice the starting point of a research collaboration can deflect the participatory process:

> I wish to argue that to place the teachers' classroom practice at the centre of the action for action researchers is to put the most exposed and problematic aspect of the teachers' world at the centre of scrutiny and negotiation. In terms of strategy, . . . I think it is a mistake to do this. I say it is a mistake to do this—and this may seem like a paradox—particularly if we wish to ultimately seek reflection about and change in the teachers' practice. (p. 141)

The initiation of teacher-researchers into household, rather than classroom, analysis provides the context for collaboration in a number of overlapping arenas. In the first place, teachers are presented with a body of social theory that allows them to reconceptualize the households of "minority" children (more on this issue below). In addition, by approaching these households as qualitative researchers, teachers are offered a nonevaluative framework that helps them to go beyond surface images of families. Secondly, the household analysis also serves as a sort of "rite of passage" as the teachers study unfamiliar settings which they cannot assume they know or understand. The contrast between the familiar (the classroom) and the unfamiliar (the household), especially when teachers do not live in the community in which they teach, is analogous to an anthropologist entering an unknown community. This contrast becomes an issue even when the teachers are themselves members of the community. In such cases, the task becomes that of "making the familiar strange" in order to observe and document processes that are less salient or "visible" to the "insider." All teachers, minority or otherwise, have found that entering the households as researchers, rather than as "teacher," produces a discernible reorientation to household dynamics and processes (González and Amanti, 1992; González et al., 1993).

The theoretical orientation of our "fieldwork" is toward documenting the productive activities of households and what they reveal about families' funds of knowledge. Particularly important in our work has been the analysis of households as "strategizing units": how they function as part of a wider economy, and how family members obtain and distribute their material and intellectual resources through strategic social ties or networks, or through other adaptive arrangements (see, e.g., Vélez-Ibáñez, 1988; Vélez-Ibáñez and Greenberg, 1992). We have learned that in contrast to classrooms, households never function alone or in isolation; they are always connected to other households and institutions through diverse social networks. These social networks not only facilitate different forms of economic assistance and labor cooperation that help families avoid the expenses involved in using

secondary institutions, such as plumbing companies or automobile repair shops, but serve important emotional and service functions, providing assistance of different types — for example, in finding jobs, with child-care and rearing, or other problem-solving functions.

It is primarily through these social networks that family members obtain or share what we have termed "funds of knowledge." We have defined funds of knowledge as those historically accumulated and culturally developed bodies of knowledge and skills essential for household or individual functioning and well-being (Greenberg, 1989; Moll and Greenberg, 1990). As households interact within circles of kinship and friendship, children are "participant-observers" of the exchange of goods, services, and symbolic capital which are part of each household's functioning (see, e.g., Andrade and Moll, 1993).

The knowledge and skills that such households (and their networks) possess are extensive. For example, many of the families know about repairs, carpentry, masonry, electrical wiring, fencing, and building codes — in general, knowledge related to jobs in the working-class segment of the labor market. Some families have knowledge about the cultivation of plants, folk remedies, herbal cures, midwifery, and first aid procedures, usually learned from older relatives. Family members with several years of formal schooling have knowledge about (and have worked in) archeology, biology, education, engineering, and mathematics. From the documentation and (theoretical) analysis of funds of knowledge, one learns not only about the extent of the knowledge found among these working-class households, but about the special importance of the social and cultural world, and of social relations, in the development of this knowledge (Moll, Tapia, and Whitmore, 1993).

What is the source of these funds of knowledge? We have concentrated primarily on documenting the social and labor history of the families. Much of a household's knowledge is related to its origins and, of course, to family members' employment, occupations, or work, including labor specific to household activities. To make this discussion more concrete, consider the following case examples drawn from one of our studies (adapted from Moll and Greenberg, 1990; names are pseudonyms):

> The Aguilars and the Morales are typical cross-border families with rural roots, part of an extended family — Mrs. Aguilar is Mr. Morales' sister — that came to Tucson from the northern Sonoran (Mexico) towns of Esqueda and Fronteras. The Morales had a parcel of land on an *ejido*. Mr. Aguilar's father had been a cowboy, and had worked on a large ranch owned by the descendants of a governor of Sonora in the nineteenth century. Like his father, Mr. Aguilar is a cowboy. Although he worked for a time in construction after coming to the United States, he is currently employed on a cattle ranch near Pinal, Arizona, where he spends five to six days a week, coming home only on Tuesdays. Like Mr. Aguilar, Mr. Morales initially found work in construction, but unlike his brother-in-law, he eventually formed his own company: Morales Patio Construction. This family concern also employs his son as well as his daughter-in-law as their secretary/bookkeeper. Nevertheless, the Morales' rural roots remain strong, even idealized. In their backyard, the Morales have recreated a "rancho" complete with pony and other animals. Moreover, the family owns a small ranch north of Tucson which serves as a "recreation center" and locus for learning. They take their children and grandchildren not just to help with the chores, running the tractor, feeding animals, building fences, but more importantly to teach them the funds of knowledge entailed in these old family traditions which cannot be learned in an urban context.

A second example is from a family with an urban background:

> The Zavalas are an urban working class family, with no ties to the rural hinterland. They have seven children. Their eldest daughter, however, no longer lives at home, but with her boyfriend and son. Mr. Zavala is best characterized as an entrepreneur. He works as a builder, part-time, and owns some apartments in Tucson and properties in Nogales. Mrs. Zavala was born in Albuquerque, New Mexico, in 1950 but came to Tucson as a young child. She left school in the eleventh grade. Mr. Zavala was born in Nogales, Sonora, in 1947, where he lived until he finished the sixth grade. His father too was from Nogales. His father had little education, and began to work at the age of nine to help support the family. His family, then, moved to Nogales, Arizona, where he went to school for another two years. When he was seventeen, Mr. Zavala left home and joined the army, and spent two years stationed on military bases in California and Texas. After his discharge, he returned to Nogales, Arizona, and worked for a year installing television cable and heating and cooling ducts. In 1967, Mr. Zavala came to Tucson, first working as a house painter for six months, then in an airplane repair shop where he worked for three years. In 1971, he opened a washing machine and refrigerator repair shop, a business he had for three years. Since 1974, Mr. Zavala works in construction part time, builds and sells houses, and he owns four apartments (two of which he built in the backyard of his house).

Everyone in the Zavalas' household, including the children, is involved in informal sector economic activities to help the family. Juan, for example, who is in the sixth grade, has a bicycle shop in the back of the house. He buys used bicycle parts at the swap meet and assembles them to build bicycles, which he sells at the yard sales his family holds regularly. He is also building a go-cart and says he is going to charge kids fifteen cents per ride. His sisters, Carmen and Conchita, sell candies that their mother buys in Nogales to their schoolmates. The children have used the money they have earned to buy the family a video recorder.

Teachers have reported to us the transformative potential of viewing households from a funds-of-knowledge perspective (González et al., 1993). One implication, and a most important one, is debunking ideas of working-class, language-minority households as lacking worthwhile knowledge and experiences. These households, and, by implication, these communities, are

often viewed solely as places from which children must be saved or rescued, rather than places that, along with problems (as in all communities), contain valuable knowledge and experiences that can foster the children's development.

A second implication is in understanding the concept of culture from a more dynamic, "processual" view, not as a group of personality traits, folk celebrations, foods, or artifacts, but as the lived practices and knowledge of the students and their families. As Rosaldo (1989) notes, "from a processual perspective, change rather than structure becomes society's enduring state, and time rather than space becomes its most encompassing medium" (p. 103). The fact that many minority students live in ambiguous and contradictory circumstances favors a perspective in which attention is directed toward the interaction between individual agency and received structures. In this way, the actual and everyday experiences of students' lives are privileged over uniform, integrated, and standardized cultural norms. Cathy Amanti, one of the teacher-researchers in the project, explains it as follows:

> Participating in the project helped me to reformulate my concept of culture from being very static to more practice-oriented. This broadened conceptualization turned out to be the key which helped me develop strategies to include the knowledge my students were bringing to school in my classroom practice. It was the kind of information elicited through the questionnaires that was the catalyst for this transformation. I sought information on literacy, parenting attitudes, family and residential history, and daily activities. But I was not looking for static categories, or judging the household's activities in these areas according to any standards—my own or otherwise. . . . If our idea of culture is bound up with notions of authenticity and tradition, how much practice will we ignore as valueless and what will we say to our students? But if our idea of culture is expanded to include the ways we organize and make sense of all our experiences, we have many more resources to draw upon in the classroom. (González and Amanti, 1992, p. 8)

In addition to providing evidence of the repositories of knowledge found in these homes, teachers have drawn on the insights gained from household visits and analysis in a number of ways. For example, one teacher learned that many of her students' households had extensive knowledge of the medicinal value of plants and herbs. She was able to draw on this ethnobotanical knowledge in formulating a theme unit that reflected local knowledge of the curative properties of plants. Another teacher, after visiting a household that regularly participated in trans-border activities in northern Mexico, discovered that her student commonly returned from these trips with candy to sell. Elaborating on this student's marketing skills, an integrated unit emerged which spun around various aspects of candy and the selling of candy. Students adopted an inquiry-based approach to investigate the nutritional content of candy, a comparison of U.S. and Mexican candy, sugar processing, and developed a survey and graphing unit on favorite candies. In both instances, individuals met during the household visits became participants, visiting the classrooms to contribute (in either English or Spanish) their knowledge or experiences (González, Amanti, and Floyd, 1994; Moll et al., 1992).

In other cases, the involvement of the parents has followed an unexpected trajectory. In one special case involving an African-American household, the research visits revealed that the father, in addition to his regular job as a gardener, had a wealth of musical and theatrical knowledge that was tapped for the production of a full-scale musical in the school. This father wrote lyrics and composed music and script that featured eight original songs, described by the teacher as "songs that these children will carry with them for the rest of their lives" (Hensley, 1994). Other than the skills learned in staging the musical, a unit on sound and music was developed that focused on the acoustical properties of sound, the construction of various musical instruments, and ethnomusicology. Interestingly, a written survey sent by the school inquiring about household skills had not been returned by this family, but the personal and interested contact of the teacher was key in revealing and using this storehouse of talents.

One further development marks this case study as illustrative of the "catalytic" potential of this method. During an initial interview, the Johnsons (a pseudonym for this family) had indicated disinterest in the school's PTA. However, as Mr. Johnson became a frequent school visitor (on his weekly day off, we should add), carrying his musical instruments, other teachers noticed him and asked about his presence. Soon they were requesting that he visit their classrooms, and his visibility extended into other areas of school life. By the end of the school year, Mr. Johnson had been elected PTA president, proposing an ambitious agenda of community involvement in school matters. This case example effectively points out yet another area of potential that can be harnessed by transcending the boundaries of the school and making inroads into the funds of knowledge of the community.

Another teacher sought to build on the inquiry process itself, involving students themselves as "ethnographers" and developing a survey of the languages spoken in the school (Craig, 1994). The students prepared the questionnaire, piloted and revised it, and organized themselves into teams that would collect the information from teachers in the school. They also tabulated the data and, noticing inconsistencies in the results, revised the questionnaire to obtain additional data that would confirm (or not) earlier results. They also prepared a report to communicate to others in the school their findings.

Doing Science in Haitian Creole

Inquiry-based instruction is also the central theme of the research reported by Warren, Rosebery, and Conant (1989, 1994). The goal of the work was to develop a collaborative approach to science for students in a Haitian Creole bilingual program in Boston. As the authors pointed out, science instruction for working-class language-minority students, when offered at all, takes the

most limited and traditional forms, and it is often subordinated to the goal of developing the students' English language. In contrast, their approach, called Cheche Konnen ("search for knowledge" in Haitian Creole), involved the students in the conduct of science, especially in developing investigations and scientific ways of thinking, talking, and action: "students are encouraged to pose their *own* questions, collaboratively plan and implement research to explore those questions, collect analyze and interpret data, build and revise theories, draw conclusions, and make decisions based on their research" (Warren et al., 1989, p. 2, emphasis in original). In developing and implementing these activities, oral and written language (in Creole and English) and mathematics played indispensable mediating roles in communicating ideas and in thinking scientifically. Central to their approach was the work of the teachers in guiding, facilitating, and supporting the students' research activities and discussions.

In one of their case studies, for example, the students and the teachers (with the help of the researchers) in a seventh-grade classroom designed and conducted an investigation into aquatic ecosystems, the goal of which was to "develop an understanding of the concept of an ecosystem through observation and analysis of the physical, chemical and biological forces and relationships affecting aquatic life in a local pond, stream, or river" (Warren et al., 1989, p. 34). As part of their research, the class decided to carry out a field study of a local pond near the city's reservoir. Several class sessions were spent planning a "Field Guide" for the conduct of the study, and the students (with the teacher's assistance) generated a set of questions about the pond that they wanted to investigate, such as the depth of the pond at different places, the animals that live there, whether the water is safe to drink, the cleanliness of the pond, and whether the pond had always been the same size (p. 35).

These questions motivated their inquiry and led to theory development, collection and analysis of data, revisions of theory, and further research questions and follow-up activities. The students met in language groups (Creole and English) to discuss their research, divide the labor and responsibilities, plan experiments, decide on the kinds of data needed to answer their questions, and develop instruments to record their findings. For instance, some of the students collected temperature readings at various depths and at different locations in and around the pond, recording the various temperatures on the board for discussion and the generation of hypotheses. In doing so, they noticed a discrepancy between the air and the water temperature at different depths. The following trilingual discussion ensued among children and adults:

TEACHER ASSISTANT (*in English*): O.K. These were the results Martine (one of the students) found. Can anybody explain why they think? What the changes were about? Why weren't they the same?

MARTINE (*in Creole*): Why above the water was, where when I first came the air was 20 was because it was a bit warm out and also the air. . . .

TEACHER ASSISTANT (*in English*): O.K., what Martine is saying, she's saying that when we came to the pond it was pretty warm outside and that's why she thinks it was 20. What do people think? Why would the water be, I don't understand why the water would be different from the air.

MARTINE (*in Creole*): Because the water, the sun doesn't hit the bottom of the water.

MARIO (*in English*): The sun wasn't going to the bottom of the water.

LORENZO (*in Spanish*): The water on top is hot, because the sun hits it, but the water in the bottom is . . .

ESL TEACHER (*in English*): Alright! Lorenzo got, just got that. See if you try to get it! The temperature, can I translate for Lorenzo. He told me in Spanish. The water on top of the pond is warmer than deeper down because the sun heats up the water on the top.

TEACHER ASSISTANT (*in English*): O.K., that's just what Mario was saying. O,K., great. Is that true? Did anybody measure the water down below?

STUDENT: We did.

(from Warren, Rosebery, and Conant, 1989, p. 38)

The discussion continued as children and teachers shared ideas, made sense of the data, and developed new questions, especially when their data revealed that the water 5 feet under was warmer, not colder than the water on the surface. How could this be? The teachers and children proposed new ideas for the discrepancy in temperatures and designed a new experiment to obtain more precise data to answer their questions. During the activity, the students also wrote (in addition to the Field Guide) their findings and interpretations, displaying more sophistication in their interpretations as the research progressed (for details, see Rosebery, Warren, and Conant, 1992; Warren, Rosebery, and Conant, 1989).

Researching the Research Process

This third example borrows from a project conducted with sixth-grade Puerto Rican and African-American students in New York City (Mercado, 1992). As with the two studies summarized above, it represents a collaborative effort, in this instance between a single researcher and a teacher, involving students in "authentic," real investigations about issues that matter to them and to the community. A key, and unusual, component of this work is that the students and teacher not only conceptualized and conducted research projects, but presented their work at research conferences, an often overlooked aspect of student inquiry. As part of the work, the class designated Friday "Research Day," and devoted two 90-minute sessions, one in the morning and one in the afternoon, to the activities and discussions related to their projects. The initial question posed to the students was straightforward: What would you like to learn about in this research project? (p. 170). The students responded with a long list of questions, including

sues such as where and how to obtain resources to help the poor and the omeless, questions about drug and alcohol abuse, the etiology of diseases, ime and child abuse, early pregnancies, women and employment, and food ıortages (and one student who wanted to know about lava). They then or-ınized themselves into research teams and gave their teams names that re-ted to the issues under investigation (e.g., Teen Pregnancy Association).

The Friday meetings were also used to discuss the work of other re-archers in the field (not summaries or condensations, but their actual arti-es) or specific topics of concern (e.g., writing bibliographic references) and demonstrate or model how research is done. Mercado (1992) described it follows:

> By showing students how I am documenting the research activities of this class, we have the opportunity to reflect on and discuss what occurred during our previous meeting, as well as to explore how ethnographic procedures may be used by the students in their own work. In addition, bringing in copies of my typed field notes/logs and data summaries for their examination, allows me to validate my recorded data and obtain additional perceptions of and reactions to occurrences I had noted. The significance of this procedure had been discussed and students are well aware that ethnographic researchers must verify the accuracy of their information. In fact, they enjoyed "correcting" my data, as they refer to it. (p. 171)

e students also functioned as collaborators by serving as "scribes" and tak-notes on the proceedings. These meetings, then, served as a research dy group, where the student-researchers discussed issues raised by their rk, examined the literature, and used each other and the adults (including ımunity members) as consultants in developing their investigations. They o submitted written summaries of their activities and plans for future ac-ı.

Particularly striking are the insights the students developed through r participation in research. Among the most important is an ongoing re-nition of themselves as learners. Although some are reluctant to label nselves researchers, they have come to understand that through their in-ries they have access to special information that others might lack, and they are indeed capable of doing the intellectual work necessary to con-t an investigation and deal with the problems and frustrations of the k. The students (with the help of the researcher and teacher) have also sented their work and ideas at professional research conferences (includ-a conference in another state) and to students in teacher-education pro-ns, experiencing the anxieties and satisfaction of sharing one's work with rested others, and benefiting from comments about their work. In turn, students have helped the researcher and the teacher realize more clearly importance of social relationships in developing, conducting, and sus-ng a research effort, that is, in creating a social context for thinking and nquiry.

The students' work on the project contrasts sharply with the type of schooling that they most frequently encounter, the rote-like instruction characteristic of their experiences in classrooms. The students are quite aware that this type of instruction helps define school for them; that teachers simply, as two students expressed it, "put work on the board, and we do it" (p. 187). As Mercado (1992) describes it, "This [perception of schooling] was brought out in early January when, in preparing for our first presentation, I asked students to tell me what was so different about our work together, as they had been insisting. Rebecca [one of the students] explained that Marcy [the classroom teacher] and I give students 'the idea and let (them) find out the information and say how (they) feel.' In other words, we allowed them to 'discover' for themselves, a word she also used, and we respected their views" (pp. 187–188). As the author concluded, these students have learned to work, talk, and make presentations like researchers and, in doing so, learned that they are fully capable of more advanced work than they are usually allowed to perform in schools.

Challenging the Notion of Native American Styles of Learning

This challenge of the typical view of students is also central to the final example, which we borrow from the analysis of McCarty and her colleagues in the Navajo bilingual program in Rough Rock, Arizona (McCarty, Wallace, Lynch, and Benally, 1991; see also, Lipka and McCarty, 1994). This program has a long history and has played an intricate and critical role in the development of the community it serves, including becoming its chief local employer (McCarty, 1989). McCarty and others (1991) describe the introduction into the program of a bilingual social studies curriculum emphasizing open-ended questioning, analytical reasoning, and active student participation and verbalization. A major aim of the curriculum was to develop the children's concepts and problem-solving abilities in the context of culturally salient experiences and topics, while promoting competency in Navajo and English. For example, an organizing concept in the curriculum was that of *K'é*, meaning kinship and clanship in Navajo. In the first two grades the students examined this concept in relation to their interactions with family and relatives, progressing in the third and fourth grades to the analysis of the interactions of people in the community and with the natural environment, and in the older grades encompassing a critical understanding of the concept in relation to other groups of people, nations, and governments.

As the authors report it, within this framework the students could examine the development of Navajo society from local, tribal, and national perspectives, exploring in increasing complexity the concepts of interaction, change, and causality. Throughout, the students were encouraged to do research, use reading and writing as tools of inquiry, and contribute their ideas as part of classroom discussions. Interestingly, several Navajo teachers resisted the introduction of the curriculum on the basis that Navajo students would not respond to an inquiry-based curriculum and that they needed

scripted drills to develop basic skills. It was only after a successful demonstration of the curriculum in action, with the students actively participating, that the teachers agreed that the curriculum was feasible and useful, and decided to implement it.

The teachers reported that the emphasis on inquiry generated active participation and verbalization in both languages from the children — that it allowed the children, through their own interactions and explorations, to use their knowledge to solve new problems, in ways that are very similar to the other studies summarized above. The authors point out that the activities in the curriculum were also analogous to other Navajo community-based experiences that support and expect experimentation on the part of the children, as well as the sharing of knowledge.

What about the often-documented passive responses of Navajo and other Native American children in schools? McCarty and her colleagues suggest that these are responses to constraining (and ubiquitous) forms of instruction that are also, as we have pointed out, common with working-class children in other locations, not indications of a general (context-free), culturally based, nonanalytical "style" of learning. In these researchers' words, in contrast to passive students, "in classrooms where talk is shared between teachers and students, where the expression of students' ideas is sought and clearly valued, where students' social environment is meaningfully incorporated into curricular content, and where students are encouraged to use their cultural and linguistic resources to solve new problems. Native American students respond eagerly and quite verbally to questioning, even in their second language" (p. 53).

The Mediating Roles of Literacy

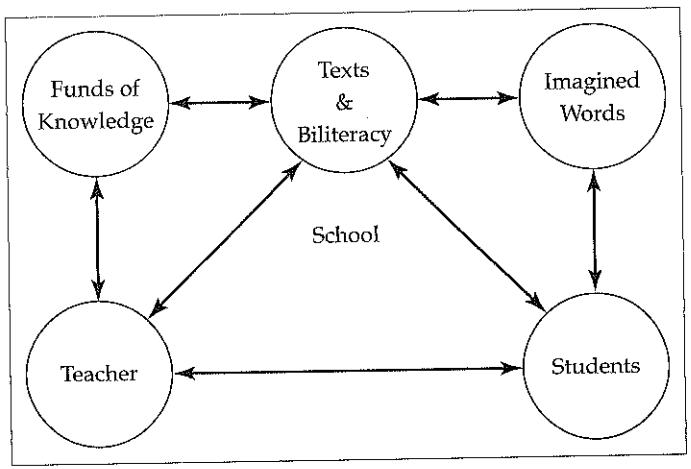
All of the projects summarized above seek to build, each in a very different way, on the cultural resources of the students and their communities, on their funds of knowledge, if you will. In this final section we want to return to the literacy practices with which we started this paper to propose a model of how these practices are essential in gaining access to funds of knowledge for academic learning and, conversely, how transcending the classroom is essential in maintaining these literate classroom practices within working-class settings. In brief, our point is as follows: None of these innovations will last unless teachers are able to overcome the intellectual limits of traditional schooling for these children. A major limitation of most classroom innovations is that they do not require (or motivate) teachers or students to go beyond the classroom walls to make instruction work. Consequently, sooner or later, the classroom comes under the control of the status quo — in the case of working-class students, the status quo means rote-like, low-level instruction. Capitalizing on cultural resources for teaching allows both teachers and students to continually challenge the status quo, especially in terms of how the students are using literacy as a tool for inquiry and thinking, and to refurbish their learning with new topics, activities, and questions.

In Figure 1 we depict the key elements of a transformed (mediated) model of classroom instruction. Clearly, as shown in the studies summarized above, the social relationships between teacher and students (and among students) are central to the success of such classrooms; thus they form the base of the triangle. They are also central in defining what it means to be literate within these classrooms, what Reder (1994) calls the "modes of engagement" with literacy. Of central concern with language-minority children is whether they are limited to learning only the rudimentary uses of reading and writing, as is typically the case, or whether they are supported in developing various modes of engagement, especially what Wells (1990) refers to as "epistemic" engagements with text: where text is treated to create, develop, or interpret knowledge or new meanings (see also Wells and Chang-Wells, 1992).

Thus, as shown in Figure 1, the relationships between teacher and students always mediate the students' engagements with texts, as well as what literacy comes to mean for them within the classroom. In most classrooms, especially with working-class students, those relationships are bounded, restricted, and often determined by the characteristics of commercial products, such as basal readers, worksheets, and exercises. So, in this sense, teacher-student relationships not only mediate but are mediated by the types of texts found in these classrooms, as well as by what students are asked to do with texts, whether in one or two languages.

We have suggested that a key element in fostering epistemic engagements with texts is developing the children's literate competencies in two languages, as done by Lupita in our example. But these positive outcomes of bilingualism (and literacy) are far from automatic. Consider that bilingual education in the United States is primarily a working-class phenomenon, so

FIGURE 1 Transformed Model of Classroom Instruction



that these classrooms form part of a broader, stratified system of instruction, with implications we have already reviewed. How can we overcome these constraints? One way is for teachers and students to use literacy to connect with resources outside the classroom. In all of the examples presented earlier, the uses of literacy were inseparable from collaborative interactions developed for appropriating and transforming cultural resources for learning.

Thus, our model portrays at least two ways (there are certainly many more) that we can establish these mediated relationships between texts and social world: by helping students to enter (access, manipulate, use) both "real" and "imagined" worlds. The connection to the "real" world is through the analysis of funds of knowledge. We highlighted the role of teachers, equipped with both theory and method, in visiting households and establishing the necessary social relationships to learn from the families. This "ethnographic" approach helps teachers confirm that there are indeed important cultural resources in the households that in great part constitute the school's community and, as important, it helps teachers develop a theory of how to identify and access them for teaching.

Certainly, the starting point for the use of funds of knowledge for teaching need not be the household visits; this connection can also be mediated. For example, it might be a specific classroom activity (e.g., a science lesson about plants) that motivates the search for resources (e.g., an expert) from the community. And certainly, not all classroom activities need make an immediate connection to household knowledge. But the point is that both teachers and students know and appreciate that the funds of knowledge are there and that their relevance for classroom learning, and for developing various modes of engagement with literacy, can be readily established.

Now, these connections to funds of knowledge may only take place in English, if need be, but that would certainly limit the view of what is available within the community, and limit the possibilities of involvement by parents and others. Monolingualism (and monoliteracy) can be an annoying constraint in these bilingual contexts. Biliteracy, in contrast, creates the expanded possibility of accessing funds of knowledge from the lived experiences of not only one but two (or more) social worlds, most pertinently the funds of knowledge of the immediate and bilingual ethnolinguistic communities of the school.

A second, mediated connection between text and the social world is through literature, by helping students enter an imagined (but still social and cultural) world (cf. Smith, 1985). Here, biliteracy also serves an important "amplifying" function, allowing teachers and students access to literate resources in not one but in two languages, be it English and Spanish, or Navajo and English, as the case may be. These literate sources allow students to access knowledge and experiences not found in the immediate community. But this connection can also be mediated in important ways. For example, as illustrated in Figure 1, students can learn how to make use of funds of knowledge from their communities to address new issues or problems found in the literature, or use the knowledge from the literature to rethink issues in the community, thus providing alternatives (and new mediated connections) for thinking that would otherwise not exist. Developing these imagined worlds facilitated by literature is an extremely important function of literacy, whether we are dealing with students experiencing vicariously the horrors of war (Moll, Tapia, and Whitmore, 1993; see also Crowell, 1993) or with science and the creation of theories (stories) about real life and possible worlds (Warren, Rosebery, and Conant, 1994).

Notice how the primary characteristic of our model has to do with the expanded possibilities facilitated by developing mediated and literate relationships. The educational emphasis is on the students' novel use of cultural resources, including people, ideas, and technologies, to facilitate and direct their intellectual work. A goal of the teacher within this social system is to teach the children how to exploit these resources in their environment, how to become, through literacy, conscious users of the funds of knowledge available for their thinking and development.

Conclusion

We have summarized four projects that attempt to make use of cultural resources for instruction, each in an unique way. And we have suggested that these projects also serve as "catalysts" to challenge the status quo by creating conditions and activities for novel uses of literacy by teachers and students. We have also highlighted the important mediating functions of literacy, especially in two languages, in helping learners establish novel connections between texts and social worlds to obtain or create knowledge and transform it for meaningful purposes.

To be sure, there is much that we left out of our discussion, such as the critical role of discourse in creating teacher-student relationships and what it means to be literate, or discussions about peer relations, outcomes, or assessment. But our purpose was to provoke thought about alternative arrangements for literacy, and expanded considerations of how to become literate in classrooms by considering mediated connections with other sociocultural worlds, whether real or imagined. In so doing, as Wallace (1989) puts it, one moves "beyond minimal interpretations of literacy as the ability to read and write to a view of literacy as a resource which offers possibilities of access to what has been said and thought about the world, of the kind which day-to-day spoken interactions can less readily offer" (p. 7).

We believe that the documentation of funds of knowledge, especially by teachers and students, provides the necessary theoretical and empirical base to continue this work. But, to be frank, we also lament that we have to spend so much of our careers documenting competence, when it should simply be assumed, suggesting that "language-minority" students have the intellectual capabilities of any other children, when it should simply be acknowledged, and proposing instructional arrangements that capitalize fully on the many strengths they bring into classrooms, when it should simply be their right.