JOB-REQUIRED LITERACY, HOME LITERACY ENVIRONMENTS, AND SCHOOL READING: Early Literacy Experiences of Immigrant Latino Children

Leslie Reese, Ronald Gallimore, Claude Goldenberg

Numerous studies have shown how the specific requirements of everyday subsistence activities create participation opportunities that foster development of skills which in turn affect cognitive development. Where family subsistence is based on literacy, and formal schooling is broadly available, it is expected that children’s early literacy development will be linked to adult uses of literacy in the everyday routines and “funds of knowledge” that characterize individual households. To explore the possible linkages between ecological/cultural variation and variations in everyday activity settings at the individual and family level, this paper focuses on parental uses of literacy in the workplace and home, home literacy environments, and children’s early reading development in a sample of working class, immigrant Latinos. The children in the study sample are concentrated at one particular school, yet there is a wide range of variability in performance. Findings from interview and observational data suggest that fathers who are required to use literacy in the workplace, and who themselves have relatively more education, live in households in which a richer learning and literacy environment is available to children. A richer literacy environment in turn is related to better reading achievement by the children, within whatever classroom program they are placed. This means that instructional program design and development can be made more sensitive to culture as it is manifest in all its variability in the lives of individual children. Although this implies a more complex task than treating children as a given group as if all were in need of similar instructional strategies and programs, it offers more hope that cultural analysts can contribute to the success and welfare of children who are presently underachieving in American public schools.

Disproportionate numbers of working class Latino youth are poorly served by U.S. public schools (Falbo and Romo 1996; Valdés 1996). Pitted many efforts by educators, aggregate test achievement test scores time to fall well below expected levels. Some explanations of between-

Job-Required Literacy

group variations highlight group-level differences on such factors as social discrimination practices. For example, ceilings on employment are presumed to lead parents in negatively affected groups to devalue education, which in turn dampens their children’s school motivation (Ogbu 1978; Ogbu and Matute-Bianchi 1986). Other studies cite generational discontinuities, concluding that with acculturation and acquisition of minority status come diminished expectations and ambivalence about school (Suárez-Orozco and Suárez-Orozco 1995). However, such efforts often fail to specify the mechanisms or processes in daily life through which such group-level differences translate into variable achievement of individual children, or why some children in negatively impacted groups defy the odds and achieve at or above expected levels.

Within anthropology, one approach to specifying these mechanisms or processes has been described as “uncocking” cultural factors thought to produce variations in individual-level child development outcomes (Whiting 1980; Weisner 1984). Numerous studies have shown how the specific requirements of everyday subsistence activities create participation opportunities that foster development of skills which in turn affect cognitive development as reflected in the researcher’s assessment of individual children. For example, Berland (1982) reported that particular observation and discrimination skills were essential functions required of those who earned livings as nomadic magicians and performers in Pakistan. Even simple domestic routines that are a byproduct of subsistence activities appear to influence higher order cognitive development. For example, children who weed, herd livestock, mind a shop, or run errands in a village or urban neighborhood are increasingly capable of a mix of self- and co-regulated activity (Nerlove, Roberts, Klein, Yarbough, and Habicht 1974). Other activities shown or hypothesized to affect development include pottery making (Price-Williams, Gordon, and Ramirez 1969), weaving (Greenfield 1974), and tailoring (Lave 1977).

In all of these examples, the subsistence base of families plays some role in creating and sustaining daily activities that influence children. Thus, it is expected that where family subsistence is based on literacy, and formal schooling is broadly available, children’s early literacy development would be linked to adult uses of literacy in the everyday routines and “funds of knowledge” that characterize individual households (Anderson and Stokes 1984; Gallimore and Goldenberg 1993; Moll and Greenberg 1990; Reese,
Goldenberg, Loucky, and Gallimore (1995; Rogoff 1990; Teale 1986). In literacy societies, children are apprenticed from an early age in the uses of language and text. Skills for the use of cultural tools such as literacy began to be practiced even before children have contact with the technology itself. Literate parents involve their children in "literate" forms of narrative in preschool discourse, as they embed their children in a way of life in which reading and writing are integral parts of communication, recreation, and livelihood (Rogoff 1990).

Literate parents are likely to "carry into" children's everyday routines two kinds of early literacy influences. First, whatever skills the job requires may directly or indirectly affect the kinds of experiences children have at home; for example, parents who read or prepare even simple documents on the job may generalize their skills to joint literacy activities with children at home. Second, it is likely that parents who use literacy as a subsistence tool will recognize its adaptive value, and therefore attend more systematically to their children's literacy development and experiences at home and school. Each of these is an example of "unpacking" group-level factors to identify the ecological/cultural sources of the specific processes through which children's development is affected (Weisner 1984).

Whatever the source and the process, parents who engage their children in literacy activities early in life can profoundly affect subsequent development. Early literacy experiences at home are known to be strongly related to early reading and writing development once formal schooling begins (Adams 1990; Teale 1986). There is consensus about home literacy elements which help children learn to read once they enter school: the availability in the home of a wide range of literacy materials, including books, writing materials, and plastic or magnetic letters; the presence of adults and older children who read with younger children; and frequent verbal interactions around books and other written texts. Sometimes adults and older children teach skills and knowledge directly; sometimes they answer children's questions and respond to their initiations (Anderson and Stokes 1984; Hess and Holloway 1984). Figure 1 depicts a model of developmental consequences of ecological/cultural opportunities.

The impact of job-related literacy on home environments has received little attention in prior studies of working class immigrant groups. To explore further the possible linkages between ecological/cultural variation and variations in everyday activity settings at the individual and family level, this paper focuses on parental uses of literacy in the workplace and home, home literacy environments, and children's early reading development in a sample of working class, immigrant Latinos. The children in the study sample, by a number of criteria, are considered at risk for underachievement in school. Yet, despite reading achievement that is significantly below average as a group, within the sample there is a great deal of variability in performance, with some students scoring well above and some well below national norms (Goldenberg, Gallimore, Reese, and Garnier 1998). A demonstrated wide range in children's reading achievement, observed beginning at entry to kindergarten, as well as the
Reese, et al.  
Job-Required Literacy

expectation of variability in family literacy uses prompted the following questions:

(1) What is the role of workplace literacy in the daily life of working class Latino parents and children?
(2) How are the activity settings associated with workplace use of literacy related, in turn, to specific academic outcomes for the children?

To answer these questions we draw on three studies in the same community of mainly low-income, Spanish speaking families; the three studies are part of a ten-year investigation of early literacy development of Latino children in urban Los Angeles that began in the early 1980s. The first study is a longitudinal study of 121 families that tracks the school performance of Spanish-speaking children. Because the larger study of necessity provides more data on more families at the cost of less depth, a subset of 32 case study families was selected from the 121. Study 2 consists of these 32 case study families who were visited 12 to 13 times over a four-year period. In addition, a limited number of classroom observations and contacts with teachers were available for the 32 children in the case study group. The third study on which we draw consisted of multiple home visits to observe ten families of kindergarten children.

Figure 2 provides a schematic summary of the three studies and analyses that we use to address our research questions. None of the studies on its own can provide evidence for all linkages in our model, from ecocultural influences to daily routines to developmentally sensitive settings to child outcomes. However, each study provides certain key links, which together make up the whole model of developmental consequences of cultural opportunity. Figure 3 illustrates the specific domains explored in each study.

Reese, et al.

Job-Required Literacy

Figure 2: A Schematic Summary of Three Studies and Findings Used to Address Research Questions.

<table>
<thead>
<tr>
<th>Study 1</th>
<th>Study 2</th>
<th>Study 3</th>
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<tbody>
<tr>
<td>Sample size</td>
<td>N = 121</td>
<td>N = 32</td>
</tr>
<tr>
<td>Design</td>
<td>Longitudinal</td>
<td>Case study</td>
</tr>
<tr>
<td>Empirical Findings from Each Study</td>
<td>Ecocultural variables correlated with children's achievement on early literacy assessments</td>
<td>Fieldworker ratings of home literacy environment &amp; support of school achievement correlated with workplace literacy use</td>
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</tbody>
</table>

Figure 3: Domain Linkages Explored in the Three Studies

<table>
<thead>
<tr>
<th>Study 1</th>
<th>Ecocultural Influences</th>
<th>Child Competences</th>
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</thead>
<tbody>
<tr>
<td>Study 2</td>
<td>Ecocultural Influences</td>
<td>Child Learning Settings</td>
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<tr>
<td>Study 3</td>
<td>Daily Routines</td>
<td>Child Learning Settings</td>
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Study 1: Longitudinal Survey Study of 121 Families

Study 1 makes use of data collected as part of a longitudinal study of children’s literacy development from ages five to nine. The focus of the study was not the ecocultural sources of their development; however, questions were inserted into the interview protocol (0–20) which allow us to explore the ecocultural correlates of home environment and children’s reading achievement at the end of kindergarten.

The longitudinal study includes 121 Latino families of kindergarten students randomly selected from classrooms in two school districts in the Los Angeles area. Analyses presented below were carried out at the end of the kindergarten year. During that year 10 of the original families were lost to the study when they moved and left no contact information. There were no significant differences between the remaining 111 families and the original sample on demographic or child characteristics.

The original sample was divided into four subgroups: Groups #1, 2, and 3 (N=91) are composed of Spanish-speaking immigrant families selected from the city of Laffine in the heart of the metropolitan area, in which school enrollment is approximately 95% Latino. With few exceptions, the children entered school as dominant speakers of Spanish and were enrolled in bilingual programs where early literacy instruction was in their native language. Each group attended a different elementary school in the same city, and their programs of early literacy instruction varied; teachers at one school employed a strict phonics approach to early reading, while teachers at the other schools made use of a balanced approach that incorporated whole language strategies. A final group (Group #4, N=30) is an immigrant Spanish-speaking group that resides in a racially mixed neighborhood (Sandy’s Beach) and whose children attended a single school in a large urban district. The children, although dominant in Spanish, were placed in either Spanish or English programs of early literacy, depending in part on parent desire and teacher availability.

Children were individually tested in the spring of their kindergarten year on a number of early literacy measures (see Goldberg 1990), grouped into two clusters:

(1) Upper and lower case letter names and sounds (possible range, 0–120); children were asked to give the name of each upper and lower case letter in the alphabet and its corresponding phoneme (letters presented out of sequence).

(2) Six subtests assessing a range of early literacy skills and knowledge (possible range, 0–69; number of words written): identification of rhymes and first syllables (0–20); reading phonetically regular words (0–10); writing words (0–number of words written); metalinguistic language production (e.g., when prompted, child says a list of letters are “letters”); 0–5; Concepts about Print (Clay, 1985; translated into Spanish, 0–24); and comprehension of a story read aloud (0–10).

Each item on each subtest counted one point; a child’s score was the raw number of correct items. For purposes of comparison and analysis, raw scores on this assessment battery were converted to factor scores using principal components analysis. For all analyses in this paper, children’s scores were standardized within the four groups that composed the longitudinal sample. Standardization of scores controls for differences among the four groups in school opportunities and experiences. In other words, test scores used in the analyses represented how individual children ranked among others in the same group.

Families in the longitudinal sample were interviewed in their homes in the fall of the school year by project-trained Spanish-speaking interviewers who followed a standard protocol. The interview included questions on family characteristics and demographics, parental views on their children’s projected academic progress, and their aspirations and expectations with regard to their children’s educational and occupational future. In addition, parents were asked about factors they considered important for student academic success and about the role that parents play in school achievement.

Description of the Longitudinal Sample on Variables of Interest

The following provides a brief description of the sample on certain key ecocultural and home environment variables which were hypothesized to be of potential significance in shaping home literacy experiences and in predicting school literacy achievement. These variables will aid
interpretation of the statistical relationships to be reported in the next section.

1. Origins of the population: The great majority of the parents in both communities came to the United States from Mexico. Cornelius (1989-1990) found that, in recent years, migration from the traditional Mexican sending states of Jalisco, Michoacan, Guanajuato, and Zacatecas has been falling off in favor of migration from the Distrito Federal itself and from rural areas, such as Oaxaca, which have not been among the traditional sending areas. Our families tend to follow the earlier pattern. In Groups 1, 2, and 3, Mexican parents come from 16 different states, with 53.3% of the women and 59.8% of the men from the states of Jalisco, Michoacan, and Zacatecas. In Group 4, an even higher percentage (59.2% of the women and 70.3% of the men) come from the same three states.

2. Child’s country of birth: Although the overwhelming majority of the parents in the sample are immigrants, the majority (75.2%) of their kindergarten-aged children were born in the United States. Of these children, 93.8% were born in California. Close to 22% of the children in both groups were born in Mexico. Interestingly, although Lattner includes close to three times the number of parents born in Central America than Sandy Beach does, the percentage of children born in Central America is identical for the two areas (3.3%).

3. Amount of time in the United States: The Sandy Beach and Lattner groups differ little with respect to the amount of time that they have lived in the United States. In the total sample, mothers have spent an average of 10.3 years (range = 2-34) in the United States. The difference in means between the two groups (10.5 years for Lattner and 9.8 for Sandy Beach) is not statistically significant. In comparison with the mothers, fathers tend to have lived in the United States longer. The means for the fathers’ length of time in the United States were 11.7 and 11.9 years for Lattner and Sandy Beach respectively.

4. Level of parental education: Mothers and fathers in both communities have virtually identical levels of education. The mean number of years of education for the Lattner fathers (7.0) is virtually the same as the mothers (7.1) and identical to the Sandy Beach fathers (7.0). The Sandy Beach mothers spent an average of 6.9 years in school.

5. Parent employment: Although all census categories are represented, the parents’ occupations in our sample tend to be clustered in the lower levels of occupation within each category. The majority of the fathers in the total sample work in the census categories of Service (36.4%), Repair (23.2%), and Laborer (34.4%). Only 3.2% of the fathers reported being unemployed. Parents with jobs in the service industries work as cooks, waiters, maids and housekeepers, janitors, gardeners, barbers, bus boys, parking attendants, childcare workers, cafeteria workers, and two teacher’s assistants. There were also such skilled workers, as mechanics, electricians, carpenters, welders, construction workers, as well as a dressmaker. The largest percentage of both men and women are employed as laborers in construction and factory work such as assembly, packing, machine operation, loading, and factory supervisor positions.

In both the Sandy Beach and Lattner groups, approximately 43% of the mothers work outside the home. Many who do not work cite the care of small children as a major reason for their not seeking employment at the present time. Of those employed in the Lattner area, 48% are found in service occupations and 30% in factory work. For Sandy Beach, the percentages are 23% and 5% respectively.

In this study, parental job status was coded based on parental descriptions of their jobs as part of the initial home interview. Categories included 1 = unskilled labor or homemaker, 2 = skilled labor, 3 = white collar/technical, 4 = managerial/professional. For parents who reported being temporarily out of work, the status of their latest job was used.

6. Parental use of literacy on the job: Parents were asked if they used literacy skills on the job and, if so, in which language were these carried out. They were then asked if literacy was a necessity for their work. Those who reported no job-related literacy were asked if they used numeracy on the job, or if they used literacy skills in some way not related to the job.

Responses were coded: 0 = no literacy used, 1 = literacy not used on the job itself but used for recreational reading, domestic use, or school help, 2 = read and write in Spanish and/or English on the job.

Of fathers in both Lattner and Sandy Beach, approximately 54% reported using reading and/or writing skills, in either English or Spanish, on both the job, and 27% reported no use of either literacy or numeracy either on the job or off. Of the mothers, however, the differences between the two groups were noticeable. Approximately 60% of Lattner mothers reported using reading and writing on the job and 16% reported no use of literacy or numeracy. In Sandy Beach the percentages were 30.5% and...
53.8% respectively. This may reflect the fact that service occupations, more heavily represented in Lattner, require more literacy skills of some level (e.g., reading a menu for fast-food tasks work.

7. Parental aspirations and expectations: Parents were presented with a hierarchy of educational levels and asked how far they hoped their children would go in school (aspirations) and how far they thought their children really would go (expectations). Responses were coded 1 = elementary school, 2 = middle school, 3 = high school, 4 = vocational/technical school, 5 = university attendance, 6 = university completion. Relatively high aspirations and expectations are held by most of the parents. Eighty per cent of the 121 families aspire to a university degree for their children. When asked what they expect to happen, 44% expect their child to finish college. These differences are common in most populations, in which parental hopes are always higher than what may be considered their more realistic expectations. Subsequent analyses carried out when the children were in middle school indicated that parental aspirations had remained high and relatively constant over the years, while expectations had declined somewhat, in part in response to children’s declining school performance (Goldenberg et al. 1998).

Parents were also asked what occupations they hoped their children would attain, and these were coded by status: higher level professional (e.g., lawyer, doctor), lower level professional (e.g., teacher), skilled worker (e.g., mechanic), office worker (e.g., secretary, receptionist), and laborer (e.g., factory worker). Similar to their educational aspirations, occupational aspirations of parents for their children were also high overall, with 75% aspiring to a professional career for their children.

8. Child’s preschool attendance and program of instruction: Although public school personnel often assume that Spanish-speaking children have few opportunities to attend preschool, the evidence for our particular sample indicates that 42.6% of all of the children attended preschool, and 80% of these completed a full year of preschool. In Sandy Beach a higher percentage of children attended preschool (63.3%), in part due to the existence of a pilot program at the local elementary school in which future kindergarten students were recruited to attend a preschool class with their parents. The same school also housed a Head Start program on its campus that some of the children attended.

In the Lattner groups (Groups 1, 2, and 3), 90% of the students were initially enrolled in Spanish reading instruction. Achievement tests and measures of literacy are therefore given in Spanish. In the Sandy Beach subset of our sample, only 38% of the Spanish-speaking and Spanish-dominant students were enrolled in Spanish reading programs and tested in Spanish. The remaining children were instructed and tested in English.

9. Children’s home literacy experiences: Despite limited educational levels, many of the low-income Latino parents in the sample reported engaging their children in literacy activities in the home. Parents were asked about specific types of literacy activities in which they engaged with their children: reading aloud to children, assisting them with learning letters and words, helping with homework, and reviewing schoolwork. "Reading aloud" included the reading of Bible stories as well as children’s books. In the majority of cases, reading was reported to be an occasional activity, rather than a daily occurrence. For the total sample, the percentage of parents who reported reading to their children at the beginning of kindergarten was 26.7%. Many more parents (61.7%) reported assisting their children to learn the alphabet and to write their name, and 37.5% reported helping with homework.

10. Religious influences on literacy activities: Because the Bible was often mentioned in connection with home literacy activities for both parents and children, parents’ responses were coded to reflect whether or not religious materials formed the basis for reading to children. The variable was coded: 1 = religious materials used, 0 = religious materials not mentioned.

Statistical Analysis of Study 1 Dataset

Table 1 presents the correlations of selected ecocultural and home environment variables discussed above with children’s standardized literacy scores at the end of kindergarten. Job-required father literacy was the only ecocultural feature which correlated significantly with child test scores ($r = .20, p < .05$). None of the following was significantly associated with test scores: parent education, occupational status, years living in the United States, and families’ use of religious texts.

In addition, job-required father literacy was significantly correlated with several other ecocultural and home environment variables (see Table 1 for values). These significant correlates included two ecocultural variables.
variables: father’s job status and job-required literacy for the mother. Job-required father literacy was also significantly associated with selected beliefs and aspirations for children. Fathers required to use literacy at work are from families that have higher hopes for their children’s job status as adults, and they hold higher educational expectations. In addition, those same fathers are from families that expressed the belief that it is important to help children with homework and to review the schoolwork that children have done. These results suggest a relationship between father’s work or subsistence activities and the home literacy environment.

Table 1: Correlations of Standardized Literacy Test Scores (n=111) with Ecocultural Features and Family Practices, Parent Expectations, and Parent Beliefs (n=121)

<table>
<thead>
<tr>
<th></th>
<th>Child’s Literacy Test</th>
<th>Father’s Job Required</th>
<th>Father’s Job Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Exocultural Features</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Literacy req. for Fa’s Job</td>
<td>0.196**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Father’s Job status</td>
<td>0.110</td>
<td>0.263***</td>
<td></td>
</tr>
<tr>
<td>Literacy req. for Mo’s Job</td>
<td>0.059</td>
<td>0.291***</td>
<td></td>
</tr>
<tr>
<td># Years Fa. Lived in U.S.</td>
<td>-0.096</td>
<td>0.092</td>
<td>0.233**</td>
</tr>
<tr>
<td>* Years Mo. Lived in U.S.</td>
<td>0.004</td>
<td>-0.131</td>
<td>0.205**</td>
</tr>
<tr>
<td>Father’s Education</td>
<td>0.049</td>
<td>-0.121</td>
<td>0.170*</td>
</tr>
<tr>
<td>Mother’s Education</td>
<td>0.104</td>
<td>-0.195</td>
<td>0.119</td>
</tr>
<tr>
<td>Religious Influence</td>
<td>-0.044</td>
<td>0.025</td>
<td>-0.148</td>
</tr>
</tbody>
</table>

| **Parents Hopes and Expectations** |                     |                       |                     |
| Hopes for Child Achievement | 0.016               | -0.099                | 0.168*              |
| Hopes for Child Job Status   | -0.128               | 0.203**               | 0.103               |
| Parents’ Educ. Expectations | 0.018               | 0.209**               | 0.160*              |

* p < .10; ** p < .05; *** p < .01; **** p < .001

However, there was no significant correlation of job-required father literacy with reported help provided the child at home. In other words, there is no evidence that subsistence-based use of literacy by father is transported to the home to affect the daily experiences of the child, at least, in the activities which formed part of the interview protocol (i.e., reading to children, assisting with homework, teaching letters and words).

It should be noted that one limitation of the results reported above is that the origin of reports was, in 76% of the cases, the mother alone. Not only was the mother reporting on her perception of what the “family” did...
to assist children at home and what “parent” values were regarding education, she was also the source for whether fathers were required to use literacy at work. Bearing in mind this caveat, we see that the father’s use of literacy in the workplace (as reported by either mother or father) emerges as a critical factor in predicting children’s literacy performance at school. This finding is in line with ecocultural theory which predicts that parents’ subsistence tools such as job-required literacy will have an influence on children’s activities in the home environment. However, the data provide no clear indication of the manner or process through which that influence occurs. Thus we are left with two questions: (1) how does the father’s workplace use of literacy manifest itself in the home activity settings that mold children’s literacy experiences, and (2) what is the roadway of indirect influences or effects of the father’s workplace literacy on the home environment which ultimately play themselves out in the family’s literacy activities?

To answer these questions, we rely on qualitative data from Study 2, with the case materials collected from a subset of 32 families drawn from the longitudinal survey of Study 1, and from Study 3, with observational data on ten families drawn from the same area (Lattner) and same schools from which Studies 1 and 2 are drawn.

**Study 2: Ecocultural Sources, Home Environments, and Early Literacy Development:**

**Study of 32 Case Study Families**

The statistical findings of Study 1 suggest that job-required father literacy is related to higher literacy test scores, as well as to parental expectations and beliefs about achievement-promoting actions such as helping with homework. Yet there was no relationship between job-required father literacy and reports of direct help to children, which leaves unanswered how the former affects child literacy development.

Before turning to qualitative data to examine these relationships, we first turn to Study 2 case materials for corroboration of the statistical results of Study 1. From the larger survey sample of 121 families, 32 were selected at random for more in-depth interview visits. During the children’s kindergarten year, these families were visited in their homes six times.
using a scale of 1 to 7 (1 = very little in the way of literacy experiences, 7 = very rich environment/multiple sources of literacy activity).

Second, we obtained a rating of the family's specific support of children's school achievement (Rating #2: "school support"), which includes such specific activities as assisting the child with homework, making sure that the child attends school regularly, and following through on teacher suggestions for home help. School support was also rated by fieldworkers using a scale of 1 to 7. In effect, these two ratings represent the cumulative impression of each family based on the full range of materials, observational, and interview data collected by each fieldworker over about six months during six visits to the family.

These ratings represent an alternative to the family reports of actions taken on two accounts. First, they were based on visits done throughout the kindergarten year in contrast to the Study 1 reports that were collected only in the fall of that year. Second, they are based on a combination of parent report and fieldworker observation as opposed to parent report alone.

How do the two "home environment" ratings correlate with children's school achievement? The rating of general home literacy environment correlated significantly \( r = .42, p < .01 \) with the literacy test used in Study 1, and it also correlated significantly \( r = .61, p < .001 \) with a teacher rating of the child's progress in reading during kindergarten (the test and teacher rating were significantly correlated, \( r = .56 \)). These results indicate that the general home literacy environment of the household is related to how well children performed in kindergarten. In that respect, results are consistent with previous studies of the impact of home environment on academic achievement (e.g., White 1982). The more specific rating of support of children's school achievement was only marginally related, \( r = .3, p < .08 \), but it was significantly correlated with teacher ratings of reading progress, \( r = .53, p < .001 \).

Not only is the home literacy environment related to child literacy performance in kindergarten, but we find that father's job literacy is a significant predictor—this time of general home literacy environment. The Study 2 results indicate that our rating of "general home literacy environment" was highly correlated with both job-required father literacy \( r = .67, p < .001 \), and father's education \( r = .63, p < .001 \). As in Study 1, mother variables were less strongly correlated; neither mother's use of literacy on the job nor mother's education were significantly correlated, with general home literacy environment.

The rating of specific support for school and academics was correlated significantly only with job-required father literacy and not to other mother or father variables and will not be considered further in this report since this more specific rating was highly related to the more general home literacy environment rating. \( r = .57 \).

We took the statistical examination of Study 2 data one step further and conducted a stepwise multiple regression. This analysis must be interpreted with caution since the sample size is less than optimum for the use of this procedure. Nonetheless, it provides a clue to the relative predictive power of the ecocultural variables. The stepwise analysis indicates that job-required father's literacy and father's education were the only significant (\( p < .05 \)) variables meeting the criterion for inclusion into the regression equation. The combined multiple \( R \) was .82, \( R^2 = .67 \), job-required father's literacy was the first to enter (\( R^2 = .76 \), \( R^2 = .58 \)). Father's education entered in the second step and accounted for an additional 18% of the variance in the rating of home environment. Neither mother's job-required literacy nor mother's education met the criterion for entry into the equation. Table 1 graphically presents the relationship and the R2 values.

Even with the caveat of small sample size, the predictive value of father's job-required literacy is clear. Since in two studies using different measures it has emerged as a predictor of both home literacy environment and children's reading achievement, we confident that it represents an effect of importance in the lives of the children in our study population.

Among the plausible interpretations of the statistical results of our studies is a pathway of influence from ecocultural sources to home environment to school achievement. Fathers who are required to use literacy in the workplace, and who themselves have relatively more education, live in households in which a richer learning and literacy environment is available to children. This richer environment in turn is related to better reading achievement by the children, within whatever classroom program they are placed (since we were using scores standardized within groups).
Mr. Moreno (Case #113) does not use literacy on his job as a loader at an oil refinery. He works long hours and is rarely available to help his daughter with her schoolwork, although he is the one in the family who speaks some English. The child was placed in an English-only classroom at school.

Mother asked him to write out phonetically some English words so that she could help the child. He did, but she was unable to read them well enough to use them. She commented, "Mi viejo casi no escribe bien." (My old man doesn't write very well.) Later, however, she asked him to write out phonetically the letters of the English alphabet. This she posted on the wall to help her as she worked with her daughter.

Mr. Rojas (Case #114) does not make use of literacy on his landscaping gardening job. He could not understand why the mother spent money on a set of encyclopedias. "¿Por qué compraste esto? Ed is busy; bastante caro," he is reported to have said ("Why did you buy that? It's pretty expensive."). The mother reported that the father was earning good money ($12/hr) as a gardener, compared to his brother who finished school and works in an office but only earns $6/hr. On one occasion, she suggested to the father that he should continue his studies, because as the children get older and brought home homework or questions that their parents don't know, they'd think "Mi papa no sabe" ("My father doesn't know"). The mother reported that father only laughed and said that he was doing fine on the job as it was and didn't need to study.

These cases provide some hint of the connections among job-related literacy, beliefs, and actions at home that directly affect children's experiences. Certainly one feature is the use of English by fathers at their workplace, which suggests an interesting puzzle since most of the children were in Spanish reading programs at school. However, subsequent analyses, conducted when the children were in middle school to determine the long-term predictive value of ecocultural variables, confirmed the importance of early English development to children's subsequent literacy.
Another characteristic of the case data above is the relationship between job-related literacy and attitudes. While families across the sample express high hopes for their children's education in a general sense, the fathers who use literacy on the job tend to act in ways which underscore the importance of literacy and learning to them. They purchase books; they take classes themselves in order to progress on the job. Fathers who do not use literacy tend not to see the need to do these things.

One of the most surprising aspects of the statistical data from Study 1 and from the analysis reported above of the Study 2 case study data was the lack of relationship between test scores and mother variables. While it is true that mothers' level of education is highly correlated with fathers' level of education ($r = .58, p < .003$), and mothers' work status is correlated with fathers' ($r = .29, p < .007$), the mother factors are not themselves directly correlated with child outcomes. However, in the cases already cited in which the children have both high literacy test scores and fathers use literacy on the job, there were strong indications from case materials of the role played by the mothers in their children's literacy development. For example:

Mrs. Frias (Case 33) completed the three years of secondary education in Mexico and has studied English and History in the United States. She now works as a bilingual teacher's aide in the school district. In this case, there is evidence of an active role for the mother in literacy learning. She draws on her own teaching background to construct games and materials with which her child practices his skills. For example, one time she had her son cut out the numbers 1 through 10 from a magazine and paste them on his fingers to practice counting. More recently, she designed a concentration game in which he had to match his reading words. The mother also encourages his father and sisters to work with the target child. In addition, she took control of his language learning situation early in kindergarten by having him retested and placed in an English reading program when there was a possibility they would be moving to an all-English district within the year. At that time, she accepted primary responsibility for providing English language support at home. She is critical of bilingual teachers who are not native speakers of Spanish and feels that her son will benefit from this early "push" toward the second language.

Some of the case data show direct links between the mother's job-related skills and children's home activities.

Mrs. Duarte (Case #111) is a cashier in a local supermarket. She verifies and cashes checks, uses a calculator and cash register on the job, and is responsible for payroll. Her children have often been to the market and observed her at work. One of their favorite activities at home is to play store, using a calculator and putting different prices on objects.

Mrs. Lomas (Case #112) was a secretary in Mexico but now works cleaning houses. Although literacy is not a requirement of her job, she does use it to leave and receive messages. She also takes a dictionary with her in case she does not understand instructions in English. She also uses a dictionary as a tool at home as she helps her daughter with English homework. If there is a word that she cannot identify, she looks it up and has her daughter assist her.

However, mother's use of work-related literacy does not always have an effect on the target child:

Mrs. Rojas (Case #114) takes written messages over the telephone for her brother-in-law's gardening business. She says that although her kindergartener-aged son observes her do it, he has never shown any interest or imitated her.

In summary, the singular statistical finding that job-required literacy of the fathers is related to children's literacy scores is reflected in some of the cases in ways that seem consistent with ecocultural and activity setting theory. However, we have no clear explanation for the absence of
significant correlations of test scores to mother variables such as education and job-related literacy. In fact, the case materials from Study 2 would suggest these ought to have appeared. It is possible that mothers' job-related literacy is not correlated with child outcomes because of the fact that the majority of the mothers do not work outside of the home. It is also reported by families that mothers are the ones who spend more time engaged in supervising schoolwork and assisting children with homework tasks. In some cases, when the child is experiencing difficulties in school, mothers redouble their efforts to assist the child. It is likely, therefore, that mothers' literacy usage and activities are important in children's lives but not related to literacy performance in school in a simple or linear way, with more activity being associated with higher performance.

Finally, the analyses in Study 1 suggested that it was not the use of literacy on the job by fathers per se that impacted children's literacy development, but rather it was the way in which job-related literacy impacted the home literacy environment where children's development was being fostered. Children's experiences differ, and mothers, clearly, are not homogenous to the home environment in general as well as engaging their children in various types of literacy activities. Their contributions are not reflected in simple correlations with level of education or work status.

It is not yet clear what the "pathway" or "pathways" are through which father's work literacy impacts child literacy development. The statistical data suggest that they might include monitoring homework and schoolwork. The case data presented above suggest, however, that another pathway of influence of father's job-related literacy on home literacy activities may be a more indirect one, with the father orchestrating family members' interactions with the child, providing additional literacy materials to support academic progress, and modeling literate behavior as he completes job tasks or his own night school homework. Study 3's observational data can be utilized to shed more light on the pathways of effect.

254
Data collected through both formal and informal interviews with parents as well as from the observations revealed broad similarities among the participating families. These similar characteristics form part of a common ecocultural niche within which the families live and raise their children. Ecocultural features common to the group include employment in low-paying and relatively precarious jobs, a deep belief in the value of education and the willingness to assist children with schoolwork, relatively scarce literacy resources in the home, and a strongly felt impact of the school on family literacy resources and activities. In all ten families parents had at least some schooling and were sufficiently literate to enable them to assist their kindergarten children with work sent home from school. In addition to being simply available, parents or relatives also monitored schoolwork, although with varying consistency and styles.

All parents expressed a deep belief in the value of education. A general belief in the importance of education was reflected in parents' monitoring of homework, at least at this initial stage of schooling when they feel they are competent to assist their children. The belief in the value of education and the broad goal of school success were largely invariant in the sample.

Just as families exhibited similarities in terms of availability of adult support and the educational goals for their children, they were also broadly similar in terms of types of tasks engaged in and materials used. All households participated, albeit marginally in some cases, in a literate society, and environmental print of some sort (e.g., labels, bills, ads, printed clothing) was observed in all homes. On the other hand, few books or magazines were observed in any of the homes. Opportunities for adults to read aloud to children or for children to observe adults engaged in literacy tasks were infrequent. While it would be incorrect to characterize homes in the present study as devoid of printed material, our overall impression is not one of homes infused with literacy or "filled with print," as Auerbach (1989) concludes about other inner-city households. In about 220 hours of observation in the households, approximately 28% of the time children kind of learning or literacy experience. In each of the homes, the school had a major impact on the children's home literacy experiences and as such was largely responsible for the consistency in types of tasks observed. Over 40% of all observed learning/literacy events involved use of materials from school. The majority of the events, particularly those that were school-based, was dominated by attention to "surface associations, that is, attention to letters, words, phrases and their shapes or pronunciation, without reference to meaning (Reese et al. 1995).

On the other hand, the families differed from one another with respect to several potentially significant ecocultural factors. Use of literacy in the workplace was one such variable. Five mothers and four fathers in the ten families reported using literacy skills on the job. In addition, in several households the children had opportunities to observe their parents make use of these job-related literacy skills at home as, for example, when the mother who was the manager of her apartment building kept rent records and wrote out tenants' receipts. Another mother sold Avon products out of her home, and her daughter was observed to make use of her order forms to mimic taking down a telephone order. These children, therefore, experienced or observed uses for literacy that were unavailable to the children whose parents did not engage in these work-related functions of literacy.

The four families in which neither parent went beyond elementary school were also those in which neither reported using literacy on the job. This suggests either that their work requires few literacy skills or that they do not perceive or utilize the opportunities for literacy that are present. Since we did not explicitly collect behavioral data on parents' workplace activities, either in or out of the home, we cannot discriminate between the two. In either case, what we can say is that in these four cases, parents' work-related literacy is less salient than in the other families, and children have no opportunities to observe their parents engage in work-related literacy tasks. In many events, parents' experiences with literacy are likely to be more limited, at least insofar as workplace literacy provides a range of experiences and opportunities not found elsewhere.

Was there any evidence that parents' education or use of literacy in the workplace had an influence on children's home literacy experiences and subsequently on their academic performance? To examine this question, Reese et al. (1995) grouped children into higher, middle, and lower achievers based on their performance on their scores on a battery of early literacy measures at the end of the kindergarten year (see Study 1 for description of measures). The four children who fell into the lower level group all had parents who had not gone beyond elementary school, who
reported no use of literacy on their jobs, and who therefore were not observed by their children engaging in work-related literacy activities. In fact, in only one of these homes was reading material of any sort, except that provided by the school, observed on more than three occasions over the course of the year.

By way of contrast, the families of children in the highest achieving group all had at least one adult in the home who had gone beyond an elementary school level of education. Their homes also appeared to contain more materials that children could incorporate into their own literacy activities. Furthermore, workplace or church, or both, impacted the literacy environment of all three of these homes by providing motives for literacy use and opportunities for children to see their parents model literate behaviors. These are the homes in which a father wrote reports on his maintenance jobs at home, a mother took telephone orders for cosmetics sales in the home, where women from the church met to read and discuss Bible lessons, and where children were read to from the Bible and encouraged to recite prayers and verses.

Families of children in the middle group exhibited some, but not all, characteristics of the higher group. Therefore, while no single characteristic could be used to predict a student’s performance, the presence of a cluster of characteristics including parental levels of education and the impact of the church and the workplace were associated with higher levels of child achievement.

Other Ecocultural Sources of Children’s Literacy Experiences

The case materials from Studies 2 and 3 suggest other important sources of literacy experiences including those that are an extension of or related to the job-related literacy finding. One such example has to do with the broader issue of the family’s subsistence base, of which job-required literacy is but a single component. Whether the father uses literacy at work pales in comparison to the larger context of the subsistence base on which all activity settings, literacy, and others, are based. Consider the following example in which the child’s entire schooling is affected by an unstable subsistence base, and perhaps to the family’s ultimate aim of returning to Mexico:

Mr. Moreno, described above, works at a refinery, but his employment is extremely precarious. For example, the mother described an incident in which a Latino worker fell asleep and did not leave during a fire drill. Management used the opportunity to fire all Latinos who could not speak English, although they had not been involved. During the child’s kindergarten year, the father lost his job and the family returned to Mexico for four months, during which the child did not attend school. The mother realized that this break in schooling would negatively affect her daughter but saw no other solution. She stated, “Yendo y viendo como vamos nosotros a la mejor ro va a aprender mucho, así pienso. En los cuatro meses que estamos allá se puede atrasar mucho.” (Going back and forth the way we do, she possibly is not going to learn much, that’s what I think. In the four months that we are over there, she can get far behind.”)

This same family, however, is saving the money that they make here in order to build a house in their hometown in Mexico. So, while they move back and forth due to father’s work situation, their moves are also motivated by their desire to make their permanent home ultimately in Mexico. As Mrs. Moreno says, “Es como si tuviéramos dos vidas, la de aquí y la de allá.” (“It’s as if we had two lives, the life here and the one there.”)

The significance of indirect effects of the subsistence base on fathers’ literacy activities with their children also emerged in a study conducted by Ortiz (1996) with second- and third-generation Latino immigrants residing in the Lattner area. Ortiz found that fathers who read more with their children were those who had constructed with their wives a shared participation in parenting tasks, as opposed to those who had a divided parenting style. The shared/divided style of parenting was in turn related to parents’ work. When both parents worked outside the home, fathers were more likely to share child care tasks with their wives, express support for a “fair” division of responsibilities, and involve themselves in reading and homework activities with their children. When the father was the only one to work and saw himself in the role of “breadwinner,” he was more likely to

258

259
to leave to his wife many aspects of child care, including literacy activities and school support.

The case above, together with Ortiz’s findings, remind us of the importance of taking many levels of the ecocultural niche into account in looking for sources of influence on early literacy development. In Study 3, as in Study 2, we found some examples which make this caution seem particularly compelling. For example, in both Study 2 and 3 we have examples of families in which religion plays a significant role in child literacy experiences. In one case, the father does not use literacy in the workplace, but the child had high scores on our kindergarten literacy test and multiple literacy experiences created by the family’s religious practices.

In Case 56, there is a strong religious orientation. Tuesday evenings and Sundays are devoted to the Church. While parents attend the service, the target child, Humberto, attends the church school where he is exposed to literacy activities such as memorizing Bible verses or listening to stories about Jesus’ life. What has been learned at church school is always reinforced by his parents’ asking about what he has done in the church school.

In another family, there were also strong values and beliefs influencing everyday experiences of children, including literacy and school-related ones. But in this case it seems the values are somewhat more secular and familial. The father uses literacy in the workplace, and the child had high scores on our literacy test. In addition, there is a “value orientation” in this family that surely must be considered in any account of the child’s daily experiences:

In Case 36, Franco’s mother and father are both very concerned about their children’s moral upbringing. Although they arrived in the United States 20 years ago, the family has still strong cultural ties to the home country. Every summer, the whole family spends vacations in Mexico because the mother wants her children to learn and experience the Mexican traditions. From the parents’ perspective, life in the United States provides many economic opportunities; however, they do not feel the United States provides an optimum environment for their children’s moral instruction. To compensate, the mother tries to instruct the children in her traditional beliefs, among which the unity of and help within the family is one of her key values. The daily routines in this child’s house are carefully organized. The father, who has been working in the same restaurant for 20 years, leaves early in the morning. The older sisters have to get up early in order to clean up and make their beds before going to school. Mother stays at home doing chores until the children arrive from school. Then she leaves for a part-time job. From that moment on the children are not allowed to leave the house. The sisters’ obligations include not only helping with chores and childcare, but also supervising Franco’s schoolwork. Franco and his three sisters excel in school.

Discussion

Like many other immigrant Latino families throughout California, families in our study, in the words of Mrs. Moreno above, indeed participate in “two lives, the life here and the one here.” Leaving their homelands in search of better job opportunities for themselves and better educational and occupational futures for their children, parents seek to raise their children with the religious and family values with which they themselves were raised. Many maintain close ties with family members in their home countries, sending money for the building of homes and spending vacations with relatives at home. As the case examples above illustrated, better paying jobs in the United States do not often include job security and benefits, nor are they always commensurate in status with jobs held in the home country.

Though they live in similar neighborhoods and express similar goals and values with regard to childrearing and education, the working-class immigrant Latino families and children in our study samples display remarkable variability. The children differ in terms of literacy development, families differ in terms of childrearing environments and uses of literacy; and fathers differ in terms of using literacy as a subsistence income.
tool. In some way that we do not yet fully understand, variable father use of job-related literacy influences the daily routines of their families, which in turn affect the children's "culture" in the form of father's subsistence activity, among other factors, has an influence on child development.

This is an example of unpacking the constituent features of the ecological/cultural environment of families (Whiting 1980; Whiting and Edwards 1988; Weissler 1984). Such an approach does not assume that every family and child in a given group, e.g., "working class, immigrant Latino," will be responding to identical ecocultural features, for example, not all fathers use literacy at work, not all families use religious texts. It does not assume that every family in a culture group will create identical home literacy environments. Rather, this approach predicts that we will find variability within groups if we unpack and measure the many features of ecology and culture. By unpacking, we can assess the effects of specific ecological/cultural components on individual children by observing the impact of those components on home environments, and then the impact of home environments on children's school achievement.

This is more than an academic debate. Although group-level explanations help raise awareness of serious social barriers, they are not always helpful policy and action guides because they address issues beyond the practical influence of schools and teachers. Studies of individual-level sources of higher achievement within groups may offer more immediately practical suggestions. The unpacking strategy offers a major programmatic advantage: it focuses attention on processes and variations in the lives of individual children that may influence significant developmental outcomes, such as learning to be literate. This means that instructional program design and development can be made more sensitive to culture as is manifest in all its variability in the lives of individual children. Although this implies a more complex task than treating children in a given group as if all were in need of similar instructional strategies and programs, it offers more hope that cultural analysis can contribute to the success and welfare of individual youngsters who are presently underachieving in American public schools.

Many teachers with whom we work in public schools express great interest in finding new ways to help Latino youth be more successful in their studies. The teachers already know that the students, as a whole, are not doing well. Many of these teachers know about the explanations of minority group school difficulties, from Ogbo's (1978) ideas about voluntary and involuntary minorities to Delph's (1988) curriculum proposals. Most teachers are sympathetic to their students and the families; some are social activists. Yet there remains a problem they face every day that neither activism or theories can help them solve: they must prepare lessons for classes of individuals who need to master a challenging curriculum. Those individual students, as the data presented here illustrate, are not all alike, despite sharing a common social address of child of working class, immigrant Latino parents.

The more we learn and share with teachers about sources of variations within the groups of students with whom the teachers work on a daily basis, the better the chances that teachers can accommodate culture in ways that are sensitive to the experiences and knowledge of each child and each family. For example, Moll and his colleagues in Tucson have collaborated with teacher-researchers in seeking out the community funds of knowledge available to the students in their classrooms and capitalizing on this existing knowledge in designing and implementing instructional units (Moll and Greenberg 1990). The findings from the three studies described above have been shared with school staffs in the Lesser, serving as the basis on which Goldenberg and his colleagues worked with teacher teams to raise instructional expectations and assign homework with parental expectations and home pedagogies (Goldenberg and Gallimore 1991; Goldenberg and Sauniers 1996). Delgado-Gaitan (1998) described how more experienced and informed Latino parents organized themselves, with the assistance of advocates within the school, to provide assistance to less experienced parents in helping their children succeed in school and in mobilizing the educational system to better meet their children's needs. These examples illustrate ways in which recognition of variation within Latino groups has resulted in activities which highlight the strengths and potential within a population which is often characterized in terms of disadvantage and risk.

NOTES

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REFERENCES CITED

Adams, Marilyn
1990 Beginning to Read: Thinking and Learning about Print.
Cambridge, MA: MIT Press.

Anderson, Alonzo and Shelley Stokes
1984 Social and Institutional Influences on the Development and
Practice of Literacy. In In Awakening to Literacy. Hillel
Portsmouth, NH: Heinemann.

Auerbach, Elsa
1989 Toward a Social-Contextual Approach to Family Literacy.

Berland, Joseph C.
1982 No five fingers are alike: Cognitive amplifiers in social

Clay, Marie
1985 Early Detection of Reading Difficulties, 3rd Ed. Portsmouth,
NH: Heinemann.

Cornelius, Wayne A.
1989-1990 Mexican Immigrants in California Today. ISSE
Angeles: Institute for Social Science Research, UCLA.

Delgado-Gaitan, Concha
1990 Literacy for Empowerment: The Role of Parents in Children’s
Education. New York: Palmer Press.

Delphi, Lisa
1988 The Silenced Dialogue: Power and Pedagogy in Educating
Other People’s Children. Harvard Educational Review
58(3):280-298.

Falbo, Toni & Romo, Harriet
1996 Latino High School Graduation. Austin: University of Texas
Press.

Gallimore, Ronald and Claude N. Goldenberg
1993 Activity Settings of Early Literacy: Home and School Factors
in Children’s Emergent Literacy. In Context for Learning:
Sociocultural Dynamics in Children’s Development. Ellice
Oxford: Oxford University Press.

Goldenberg, Claude N.
1990 Literacy Instruction for Spanish-Speaking Kindergartners:
Searching for a Balanced Approach. Paper presented at the
annual meeting of the American Educational Research
Association, Boston, MA: April.
Reese, et al

Job-Required Literacy

Goldenberg, Claude N. and Ronald Gallimore

Goldenberg, Claude N., Ronald Gallimore, Leslie Reese, and Helen Garnier

Goldenberg, Claude N. and William Saunderr

Greenfield, Patricia

Hess, Robert and Susan Holloway

Lave, Jean

Moll, Luis C. and James Greenberg

Nerlove, Sara, John Roberts, Robert Klein, Charles Yarbrough, and Jean-Pierre Habicht

Ogbu, John V.

Ogbu, John V. and Maria E. Matute-Bianchi

Ortiz, Robert

Price-Williams, Douglas R., William Gordon, and Manuel Ramirez, III

Reese, Leslie, Helen Garnier, Ronald Gallimore, and Claude N. Goldenberg


