

CHAPTER 3

Becoming Bilingual, Biliterate, and Bicultural

CATHERINE E. SNOW and JENNIFER YUSUN KANG

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The issue of linguistic and cultural differences confronts modern societies ubiquitously. The post-World War II years have been characterized by unprecedented and increasingly massive migrations of human individuals and groups from places where they are competent in the local language and cultural rules to places where they are not (Zhou, 2001). These migrations create grave challenges, both for the migrants and for their host societies. Migrants must learn how to function in novel settings, acquiring a new language, a new set of rules for daily life, and often new work and school skills as well. The indigenous inhabitants of the places where the migrants settle must also learn to interact effectively with the newcomers—to serve them in stores, hire them, work with them, and teach them—or else suffer the economic, ethical, social, and interpersonal consequences of avoiding or failing at these interactions.

These challenges of functioning and interacting might seem, on brief reflection, to be hardest for adults. After all, adults typically have already acquired a language and a culture, so they have to suppress old knowledge while acquiring new knowledge. Adults are widely thought to be

incapable of learning a new linguistic/cultural system to a high level, and may well hold such self-defeating beliefs themselves. Indeed, though pessimism about adult capacities to acquire a second language is unfounded (see Marinova-Todd, Marshall, & Snow, 2000), opportunities for immigrants to become fluent second-language speakers are often restricted. For example, the majority of immigrants to the United States from all major sending nations except Jamaica, India, and the Philippines reported speaking “poor English” (U.S. Bureau of the Census, 1993), and political opposition to ongoing immigration in Scandinavia and the Netherlands reflects the failure of immigrant adults in those countries to acquire proficiency in the local language as much as conflicts around religion, social mores, and cultural commitments. In the Netherlands, for example, a policy of *inburgeringsplicht* (responsibility to assimilate) for immigrants tied financial compensation to participation in language courses (see Verhallen, Janssen, Jas, Snoeken, & Top, 1996, for a description). But dissatisfaction with the levels of participation and accomplishment in those courses has led to restrictions on financial support for them

(<http://www.inburgernet.nl/beleid/bel155.html>, retrieved February 1, 2005).

We do not minimize the difficulties adult migrants face in adjusting to their new settings. Nonetheless, we focus in this chapter on the challenges confronting transplanted children and adolescents, as well as the teachers and other caregiving adults in the host cultures who are responsible for promoting their success. Future opportunities and access to educational advantages for their children are the reasons adults most frequently offer for their decision to migrate (C. Suárez-Orozco & Suárez-Orozco, 2001); evaluating the impact on children of their parents' decisions to move to a new setting, and describing the conditions under which the parental aspirations are most likely to be fulfilled, is thus of considerable practical importance.

These challenges of adaptation to a new language and culture for child migrants are reflected in data about their academic achievement. Language minority children are at demonstrably greater risk than native speakers of experiencing academic difficulty, difficulties that have been documented in the United States (Lloyd, Tienda, & Zajacova, 2002), in the Netherlands (Tesser, Merens, van Praag, Iedema, 1999; Verhoeven, 1994), in Great Britain (Runnymede Trust, 1998), and in Japan (DeVos & Wetherall, 1983; Y. Lee, 1991; Shimihara, 1991). The exact source of these academic difficulties—whether control over the target language, difficulties acquiring literacy, the more general challenges of a novel academic system, the consequences of discrimination, or the emotional and motivational challenges of functioning in a foreign culture—is not always easy to determine. Nonetheless, any society that seeks to avoid persistent socioeconomic differences associated with cultural and linguistic background must seek to understand the reasons for the poor academic achievement of immigrant and language minority children and youth.

Furthermore, the functioning of linguistic and cultural minorities in schools, and in the workplace and other institutions of the host culture, sheds light on basic questions about the language development and cultural learning, not just of immigrant or minority group members, but of all human beings. This is one of the many domains in which problems of practice—how best to assist immigrants with the social and educational challenges of adaptation—can yield insights of interest to basic scientists, by generating questions that might not otherwise have arisen, for example:

- How do children learn to function as successful members of their cultural groups?
- What is the role of parents, of peers, and of institutional and academic settings in cultural learning?
- How closely tied to one another are knowledge of language and knowledge of culture?
- Is it possible to be a “native speaker” but not a “native member”?
- Does achieving at high levels in host country schools require assimilation to the host culture?
- What are the limits, if any, on the achievement of full bilingualism, biculturalism, and biliteracy, and to whom do these limits apply?

Answers to these questions would help us understand some general principles of child development, of language acquisition, of literacy development, and of cultural learning, whether for the first time in infancy and early childhood or for the second time at a later age. In addition, answers to these questions would be of great benefit to the educators responsible for the growth and development of groups that increasingly include child immigrants and the children of immigrants, both in the United States and in other parts of the so-called developed world.

We take literacy learning as a focus in this chapter because it represents an important issue in its own right and because literacy is a litmus test—the final common pathway—for many other domains of learning. As we review here, literacy development is multiply determined; successful reading and writing in the later elementary and secondary grades is not possible without high levels of language proficiency, access to large stores of knowledge, and control over the local cultural norms for communication. Thus, through our focus on literacy, we can discuss many aspects of the challenges learners in general, and language minority learners in particular, face. We focus on the group we call L2/C2 learners: children and adolescents faced with the need to acquire a second language (L2) and/or a second culture (C2), either because they have just arrived in a new setting or because their home language (L1) and culture (C1) differ from that of the schools and the larger society. But in forefronting the specific, practice-embedded challenge of understanding and supporting L2/C2 learners, we also consider research on the general case of literacy acquisition and the chal-

lenges it presents even to monolingual children for whom home and school represent no sharp discontinuities of language and culture.

L2/C2 learners are as a group at greater than average risk of poor literacy outcomes and associated achievement problems (August & Hakuta, 1997; National Center for Education Statistics, 2003), but it is important to note that there are robust differences in academic outcomes within the language minority and immigrant population that help may shed light on some of the mechanisms by which children acquire the language, literacy, and cultural skills they need. Ogbu (1992) argued that these differences could be accounted for by factors leading to immigration—that voluntary migrants, moving to a new setting in part to promote their children's learning, were more tolerant of the stresses associated with migration, had higher aspirations for social mobility, and were more optimistic for their children's success, with the result that the children were academically more successful. Ogbu's ideas on this topic have been highly influential, but they do not entirely fit the data; Mexican immigrants, for example, are voluntary immigrants who are strongly motivated to improve their children's educational opportunities (C. Suárez-Orozco & Suárez-Orozco, 2001), but their children perform more poorly in school than nonimmigrants or other immigrant groups. It has been argued that the high regard for education Asian immigrants bring with them helps explain their children's generally good school performance, but this explanation ignores differences within the Asian population (S. Lee, 1996) and fails to clarify a mechanism by which those cultural values are transmitted to the children. Furthermore, as Ogbu has pointed out, Asian migrants perform rather poorly in settings where they are discriminated against. So, for example, if culture explains the high achievement of Korean immigrants in the United States, why does it not protect Korean children whose families have immigrated to Japan, where Korean academic achievement is relatively poor?

These disparities across and within immigrant groups suggest the importance of understanding context as well as development. If we hope to answer questions about the determinants of and limitations on academic outcomes for children in general, and for L2/C2 learners in particular, we need to expand our horizons as researchers to integrate information about processes of development with information about local and societal

conditions affecting those developmental processes. In other words, these are not questions to be answered by thinking purely as developmental psychologists or educational researchers; to be addressed satisfactorily, they require insights from demography, sociology, anthropology, socio- as well as psycholinguistics, and economics.

CASE EXAMPLES: LEARNING A SECOND LANGUAGE IN CHILDHOOD

Consider the cases of two families who display some of the complexities of migration and L2 learning.

The Lopez Family

A Spanish-dominant 5-year-old girl named Rosario, whose parents have recently immigrated from Oaxaca to Austin, Texas, starts kindergarten. Her mother, trying to choose the program that will best support Rosario's learning of English, puts her in an all-English classroom. Because the adults in Rosario's family speak very little English, they of course continue to speak Spanish at home. Rosario struggles in kindergarten, partly because she doesn't understand much English, but partly because many of her classmates have had far more experience than she has being read to, playing with puzzles, learning numbers and letters, and writing. In first grade, Rosario is in the lowest reading group, which gives her access to some one-on-one tutoring from a reading specialist; as it happens the reading specialist is bilingual and reverts to Spanish occasionally in explaining particularly difficult puzzles in English spelling and word reading. Five years later, Rosario is doing well in fourth grade, reading fluently and eagerly in English and enjoying school. Her spoken English is now fluent, accent-free, and grammatically mostly correct. She still speaks Spanish at home with her parents, but increasingly uses English with her younger siblings. She has not learned to read in Spanish and now has some difficulty talking in Spanish with her parents about things that she is learning at school; she doesn't have the Spanish vocabulary to discuss math, science, or social studies. Thus, her Spanish conversations tend to focus on matters relevant to home and family; if she needs help with homework or wants an explanation about something she heard at school, she turns to her teacher rather than to her parents. By the time Rosario is in high school, she much prefers speaking English to speaking Spanish,

often responds to her parents in English when they speak to her in Spanish, and finds herself occasionally unable to understand her parents' conversations, for example, when they turn to such topics as political change in Mexico or medical procedures.

The Jackson Family

Six-year-old Ashley and her 10-year-old sister, Brittany, move with their English-speaking family to Querétaro, Mexico, where their mother has taken a position at El Instituto de Neurobiología. Their mother is eager for her daughters to become bilingual and thus enrolls them in a nearby school where they are the only English speakers. Ashley has completed kindergarten in South Bend and can already read at a late second-grade level in English. Brittany is a fluent reader at an early sixth-grade level and insisted on including several dozen chapter books in the luggage the family took with them. Both Ashley and Brittany find their Spanish-speaking classroom environments intimidating to begin with; Ashley in particular often has tantrums and crying fits when it is time to go to school and seems somewhat depressed during her first months in Querétaro. Only after 4 months in school does Ashley produce any spontaneous Spanish utterances. Meanwhile, though, she is participating fairly successfully in the literacy instruction activities in her first-grade classroom; these consist mostly of filling in worksheets, copying sentences from the board, and reading aloud in chorus. Brittany is more lost at first, because the instruction she encounters involves a lot of teacher talk, which she does not understand. But within a few months, Brittany has learned enough Spanish to make some tentative friendships; she starts to rely on her desk-mate, Maricarmen, to repeat the teacher's instructions slowly or to explain how to do the assignments. Furthermore, Brittany learns to read Spanish after only a few sessions with a tutor and soon is able to understand her textbooks and the written homework instructions with little difficulty. Brittany can even help Ashley with her homework. During Christmas break, their mother insists that the girls spend some time reading books in English, to be sure they not fall behind in English reading skills. As soon as the school year is over, Ashley and Brittany are sent to spend 6 weeks with their grandparents in Maine, a pattern that will continue throughout their elementary school years. Brittany takes Spanish books with her to read on vaca-

tion, but both children are soon happily reading English books borrowed from the local public library. By the end of *primaria*, both Ashley and Brittany are fully bilingual, able to talk about things they have learned in school with their parents in either Spanish or English or a mix of both languages. Their mother notes that their Spanish literacy skills are somewhat stronger than their English literacy skills and decides to enroll them in a private bilingual secondary school to ensure that they will develop the skills needed to be able to gain admittance to and to succeed at a university in the United States.

Summary of Language-Learning Cases

On the face of it, Rosario, Ashley, and Brittany all faced the same challenge: learning a new language primarily from exposure in school. Their outcomes, though, are different in important ways; Rosario ended up with greater oral proficiency in her L2 than her L1 and became literate only in the language of schooling. Ashley and Brittany ended up bilingual and biliterate, though the equilibrium between Spanish and English dominance shifted back and forth as their circumstances changed. Rosario's parents were somewhat surprised that she did not end up a fully proficient speaker of Spanish, but they did not know how to intervene to ensure full Spanish proficiency. Ashley and Brittany's parents anticipated the possibility of decline of English skills and invested heavily to ensure maintenance of English, sending the children off to an English-speaking environment every summer, buying them books in English, and choosing a bilingual secondary school.

These three child cases concretize some of the general conclusions derived from research on L2 language/literacy acquisition that:

- Acquiring an L2 in childhood can be intimidating and difficult, lead to temporary emotional problems, and take several years.
- An L1 is at some risk of loss or decline under the influence of an L2.
- A child's continued development of the L1 is more likely if the parents are bilingual and/or highly educated in the L1.
- Higher-status languages and languages associated with schooling and literacy are in general less subject to attrition than lower-status languages.
- L1 literacy skills can be a support to L2 acquisition.

- Learning to read an L2 is easier if one is already literate in an L1.
- Literacy skills contribute to higher levels of oral proficiency in both an L1 and an L2.
- Older children typically learn an L2 faster than younger children, perhaps because of their better developed literacy skills.
- Transfer of literacy skills can support L2 literacy but may not occur automatically across even closely related languages.

These case studies of individual language learners illuminate one aspect of L2/C2 learning. But understanding the full range of relevant issues requires considering a case involving policy as well.

CASE EXAMPLE: BILINGUAL EDUCATION IN THE UNITED STATES

Forty years after the establishment of the first bilingual education programs in the United States, researchers still cannot answer straightforwardly the seemingly simple question, "Does bilingual education work?" No proper experiments comparing bilingual to English-only education for English-language learners have been carried out. The debate about the effectiveness of bilingual education, reinvigorated by Ron Unz's placement of a referendum banning bilingual education on the ballot in California, Arizona, Massachusetts, and Colorado, has been minimally informed by research evidence. Supporters of bilingual education, relying on comparisons of groups that were probably not well matched to begin with, offered data that they interpreted as supporting the greater effectiveness of bilingual education (Willig, 1985). But such data were unconvincing in a political context where the opponents could identify graduates of bilingual education with clearly inadequate English and literacy skills. The slogan adopted by those who had lost faith in bilingual education, "English for the Children," was highly effective. Furthermore, researchers with integrity had to admit that good English-only instruction could also produce adequate literacy outcomes for English-language learners (e.g., Lesaux & Siegel, 2003) and that quality of instruction was more important in determining outcomes than the language in which it was delivered. The referenda greatly reducing access to bilingual education passed in California, Arizona, and

Massachusetts; the referendum failed in Colorado largely because of funding provided by a staunch and wealthy proponent of bilingual schooling. Furthermore, though some states continue to support and celebrate bilingual programs, the impact of No Child Left Behind, with its provision that all children be tested on reading and math starting in third grade and that test scores for English-language learners be reported separately, shifted attention everywhere to literacy performance in English. School districts and states have made decisions to reduce or eliminate bilingual education partly because of these political pressures and partly because its initial promise, that it would eradicate the academic deficits of language minority children, has demonstrably not been achieved. The data suggesting that bilingual education does make modest contributions to academic outcomes are insufficiently convincing to counter the political opposition raised by Unz, the accountability pressures exacerbated by No Child Left Behind, and the increasing loss of public faith in the capacities of local educators to make decisions about children's schooling.

As a National Research Council review of evaluations of bilingual education suggested long before Unz brought bilingual education to the ballot (Meyer & Fienberg, 1992), arguing for or against particular educational treatments for language minority students on the basis of evaluation studies is unlikely to be informative. For one thing, the variation within programs labeled bilingual is as great as the variation across bilingual and English-only programs. Furthermore, program quality is almost certainly more important than program type in determining outcomes. What we really want to know is under what societal circumstances, for which children, and with what educational resources certain policies are effective. Then we must analyze the mechanisms that underlie their effectiveness as a basis for designing educational treatments that will work for other groups of children, under other societal circumstances, and with access to a somewhat different set of educational resources.

In other words, we do not endorse the traditional transmission model for applied research: Work from theory (bilingual education develops and exploits a learner's "common underlying proficiency" and enables the learner to exploit transfer; see Cummins, 1991) toward application (design the program) to evaluation (compare it to some other program). Instead, we suggest reversing the arrows in Figure 3.1: Work from practice

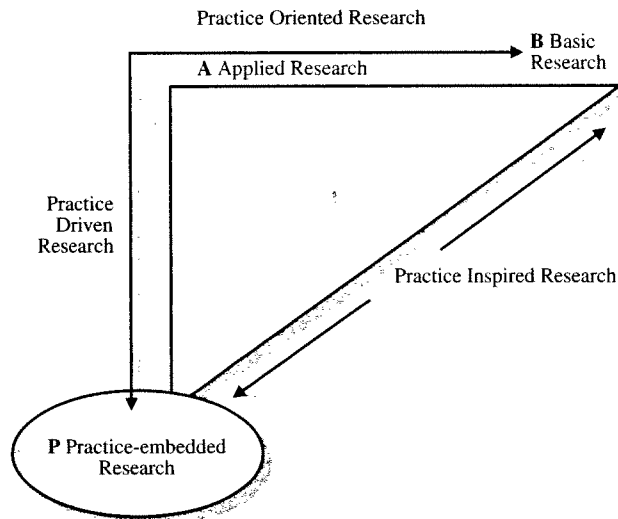


Figure 3.1 The practice-based research triangle. Adapted from Selman and Dray, Chapter 10, this *Handbook*, this volume.

(carefully describe programs that seem to have good outcomes for certain groups of children at risk) toward analysis (figure out what those programs have in common) toward theory (formulate hypotheses about how variations across programs for L2/C2 children in the practices implemented relate to the gains achieved) that can then be tested more rigorously with traditional experimental methods.

This chapter has two closely related goals: to highlight the complexity of the interplay among the various factors influencing educational advancement, in particular achievement in literacy and related academic language skills, for L2/C2 learners, and to argue for the need to substitute practice-embedded and practice-inspired research for traditional transmission-model research in this domain and in other domains similarly characterized by complexity and multidisciplinary. The first goal relates to the argument for a multidisciplinary approach to thinking about L2/C2 learning. The second goal relates closely to the argument made by Selman and Dray (Chapter 10, this *Handbook*, this volume) about models of research in a similarly challenging domain, social development under conditions of risk.

Before turning to the specific case of language minority children, we outline the challenges of literacy development in general and the ways literacy skills form a path toward (or an obstacle to) learning across the entire range of subjects taught in middle and secondary schools. Then we review the literature on L2/C2 children's literacy development in greater depth, seeking

explanations for the overall poorer academic performance of such children. Finally, we provide an overview of the educational treatments available to L2/C2 learners and highlight a few specific programs and interventions that have been implemented for these learners in preschool and elementary school settings.

REVIEW OF EMPIRICAL LITERATURE

In this section we summarize briefly the very large body of work on literacy development from its roots in early childhood through comprehension of complex texts in the middle and secondary grades.

Literacy Development: The General Case

A large and very robust research literature is available to guide us in describing the default course of early literacy development and the factors that are related to success in learning to read during the first few years of school. A somewhat less complete, but nonetheless substantial, research literature has illuminated the processes involved in reading comprehension and the conditions likely to lead to success in reading comprehension. We summarize these bodies of work here, as a backdrop to understanding how the literacy development of the L2/C2 learner might differ from that presupposed in these descriptions.

A 1998 report of the National Research Council, *Preventing Reading Difficulties in Young Children* (Snow, Burns, & Griffin, 1998), summarized the research on the development of literacy skills, organizing it by answering three questions: What is the normal course of literacy development from birth to age 8? What group and individual factors are most associated with risk of difficulties in literacy development? What are the features of skilled reading that all learners need opportunities to acquire? Findings and conclusions from that report are summarized in the next several paragraphs.

How Early Literacy Develops

Answering the developmental question required considering literacy within the larger context of language and cognitive development. In other words, the National Research Council placed the beginnings of literacy development well before school entry. Particularly in the preschool years, before formal literacy instruction starts, children use literacy skills just as they use

other emerging capacities: in play, for purposes of communication, as problems to solve, and in the context of behavioral routines. Playful, communicative, cognitively active engagement with literacy for preschoolers encompasses many sorts of activities, all of which offer opportunities to learn about letters and sounds, to learn about the functions of reading and writing, to acquire cultural rules related to literacy practices, and to develop appropriate affect.

Take as an illustrative example a typical middle-class English-speaking Euro-American child of college-educated parents. She has probably been given books to manipulate and had her attention drawn to pictures in books before her 1st birthday, is read to starting early in her 2nd year as part of a regular naptime or bedtime routine, and by age 2 may well have experienced an accumulated 500+ hours of parent-child book-reading activity (Stahl, van Kleeck, & Bauer, 2003); as a result, by the age of 3 she can recognize dozens of books by their covers, anticipate words or even whole sentences when read to from favorite books, name hundreds of pictures in books, and talk about what will happen next and why in book-based stories. This child probably plays with "refrigerator letters" while her parents are cooking dinner, scribbles with crayons or pens on pads of paper in imitation of adults writing, watches and talks about *Sesame Street* together with her mom or dad, and looks at simple or familiar books on her own; as a result, by age 3 she can write or, using magnetic letters, compose her own name, can recognize and name most upper- and lowercase letters, is starting to notice and "read" print on signs and labels, knows that her parents read the print and not the pictures in her books, and may be starting to produce initial attempts at spelling real words. This child by age 3 has probably heard dozens of different nursery rhymes and songs hundreds of times each, may have completely memorized some Dr. Seuss rhyming books, is starting to be able to respond when asked to name items in a category (fruits, animals, friends), to identify words that rhyme with *cat*, *dog*, or *lick*, or maybe even to select words that match on beginning sounds (*big* and *bad*, but not *moo*).

This child enters kindergarten with a vocabulary of 8,000 to 12,000 words, able to recognize and name all the letters, with sufficient phonological awareness to isolate beginning and ending phonemes in simple words, and extremely eager to learn how to read. Her kindergarten teacher uses a mildly structured phonics approach; all the kindergarteners in this middle-class

suburban school know the letter names already, so she teaches letter sounds, starting with /m/, /n/, /l/, /b/, /p/, and /d/ and four short vowels. She gives the children lots of practice with little word families in which those letter-sound combinations can be practiced, for example:

map, lap, nap
men, pen, Ben, den
lip, dip, nip
mop, lop, bop, pop

and she seeks out some books for read-aloud (e.g., Dr. Seuss's *Hop on Pop*, Nikola-Lisa's *Bein' with You This Way*) in which these words occur, so that the children can be successful in helping her read them in context.

When all the children are pretty good at these distinctions, she teaches a few more letter-sounds, and short u, so that she can expand the lists used in the word sorts (with *cap*, *hen*, *sip*, and *hop*, respectively), can add new lists (*pup*, *cup*, *sup/man*, *can*, *fan*), and can get children looking at variation at the ends of the words as well as at the beginning (*map*, *mad*, *mat*, *man/sip*, *sit*, *sin*, *sis*). Meanwhile, she also spends at least 45 minutes a day reading books to the children and leading or promoting discussions about them, teaching new vocabulary and lots of general knowledge in the process. She also has the children engage in science observation projects, during which they have to record (using a combination of drawing and writing) what they see when studying leaves, buds, and flowers, then larvae, pupae, and insects, then the behavior of ants in the class ant farm.

With this good beginning, going on to learn the various complexities of spelling and longer word reading in first and second grade is pretty easy for our well-prepared reader, and by third grade she is able to read chapter books independently, fluently, with excellent comprehension and great enthusiasm.

Of course, perfectly normal children in highly literate, middle-class households may deviate from this illustrative case in any of a number of ways. Some may have minor learning disabilities that make it harder for them to attend to individual sounds in words, remember which letter represents which sound, or focus sequentially on all the letters in words. Such children need more time to learn these things and more practice with each of them. Others may have been brought up in bilingual or non-English-speaking homes, so their English vocabularies comprise many fewer words at kindergarten entry. Such children will need to learn English

words while learning to read. Others may be physically very active children, or children with short attention spans, so they have had less time being read to and have enjoyed lap-reading less. They may need more explicit instruction in the conventions of literacy because they have had fewer opportunities for incidental learning.

Risk Factors

We sketched here the development of a child who encounters no special difficulties in learning to read. She was not a member of any of the demographic groups that have a higher than average incidence of reading failure: children living in poverty, children with health or nutritional challenges, African Americans, Latinos, L2 speakers, children of parents with low literacy skills, children in homes with few literacy resources. Nor did she have any of the individual factors that are associated with a higher than average risk of reading problems: language delay, hearing loss, a dyslexic or learning-disabled parent, cognitive problems such as mental retardation.

The presence of racial, ethnic, and language minority children in the group at heightened risk of reading difficulties opens up a large set of questions: To what extent are the literacy trajectories of those different risk groups similar? Are Latino children at heightened risk primarily because of limited English skills, or because of poverty and low parental education, or because of a cultural mismatch between their home and their school? Is the risk equivalent for first-generation and later Latinos? For monolingual Spanish-speaking, bilingual, and monolingual English-speaking Latinos? Is the risk for Spanish-speaking Latinos equivalent to that of other immigrant groups of similar social composition who speak other languages, or does identification as a Latino heighten the risks associated with L2 and poverty? Although there are no definitive answers to most of these questions, there are some hints in the data we review in the section on L2/C2 learners.

Skilled Reading

What are the characteristics of skilled reading that constitute the target performance toward which literacy development is aiming? Work using techniques such as eye movement tracking has demonstrated that skilled readers are very dependent on print, looking at and processing most of the letters in almost all of the words on a page. Skilled reading feels as if it goes too fast for such

detailed attention, but good readers manage to process frequently occurring sequences of letters very efficiently because they have seen them and converted them into phonological forms so often. Thus, sequences such as *-ation* and *-itude* can be processed as units. Although readers are not aware of this automatic chunking and rapid processing, it becomes obvious because of the difficulty of reading words in which unfamiliar sequences occur, for example, *Ghazi Ajil al-Yawar, Tblisi*, or *diyethyl-m-toluamide*. This aspect of skilled reading is referred to as automaticity.

Conversion of letter sequences into phonological forms is another feature of skilled reading. It seems as if beginning or poor readers are the ones who have to sound out words, whereas skilled readers can move directly from print to meaning. In fact, though, research findings make it quite clear that skilled readers access word meaning through the phonological, or sound-based, form of the word. Access to phonology is so automatic that it is largely unconscious, but failure to access the phonology of lexical items (a process we all engage in at times, for example, when we remember the names of characters in Russian novels just by their initials or first syllables) is a low-level reading strategy and one that does not work in general.

An implication of the print-dependence and phonological processing of skilled readers is that word recognition is only minimally influenced by context. Thus, for example, knowing that one is reading a report about carburetors does not make it easier to read words like *valve*, *displacement*, or *revolutions*. Knowing that one is reading about carburetors does, of course, help in comprehending the text in which these words occur and in realizing that *valve* refers here to a mechanical device and not a biological structure, and that *revolution* probably has to do with the turning of gears and not the uprising of the oppressed. So contextual information is very important in comprehension, but it has only very minor effects on word reading per se. Thus, good reading instruction focuses on helping children actually read the print in order to read the word, rather than guessing from context at what the word might be.

At the same time, good reading instruction also ensures that children realize that reading the words is not enough. Comprehension is an active process that can be aided by invoking various strategies while reading (e.g., read the title page or chapter headings to see what the text is about, stop and think about why you are reading it, formulate some questions you think the text might

answer, stop every once in a while to summarize what you have read, be alert for words or sentences you don't understand and stop to try to figure them out). Children who have not discovered these strategies on their own can be taught them, and teachers can demonstrate how to use them by modeling comprehension work while reading aloud.

Learning to Comprehend

Comprehension is, of course, the goal of reading instruction. *Preventing Reading Difficulties in Young Children* (Snow et al., 1998) emphasized that children need opportunities to develop language skill and stores of knowledge because those capacities are crucial to success at comprehension. But because that report dealt with children only up to age 8, it did not address in detail many of the challenges of reading comprehension, which emerge for many children only in the middle school years, when the texts they are expected to read become more challenging.

The RAND Reading Study Group (RRSG) was asked in 1999 by the assistant secretary of education to formulate a research agenda for work on reading. In its report *Reading for Understanding* (2002; see also Sweet & Snow, 2003, for a more practice-focused presentation of some of the same themes), the RRSG proposed that reading comprehension should be the focus of future federal funding in the area of literacy. In the process of developing the research agenda, the RRSG summarized the topics related to reading comprehension on which research had been carried out and drew some conclusions from that literature that are relevant to understanding the challenges of achieving good comprehension outcomes for all children, and for language minority children in particular.

The RAND report analyzed variability in reading comprehension success as the product of an interaction among the reader, the text, and the reading activity being engaged in, all embedded in a sociocultural context (see Figure 3.2 for a representation of this heuristic). Reader factors that contribute to success at comprehension include skills with low-level reading processes (word recognition, fluency) and high-level reading processes (comprehension strategies), domains of knowledge (linguistic knowledge, including syntax, discourse, and vocabulary, as well as relevant content knowledge), and motivation and domains of interest. Text features include topic, linguistic complexity, and discourse organization. The category activity includes

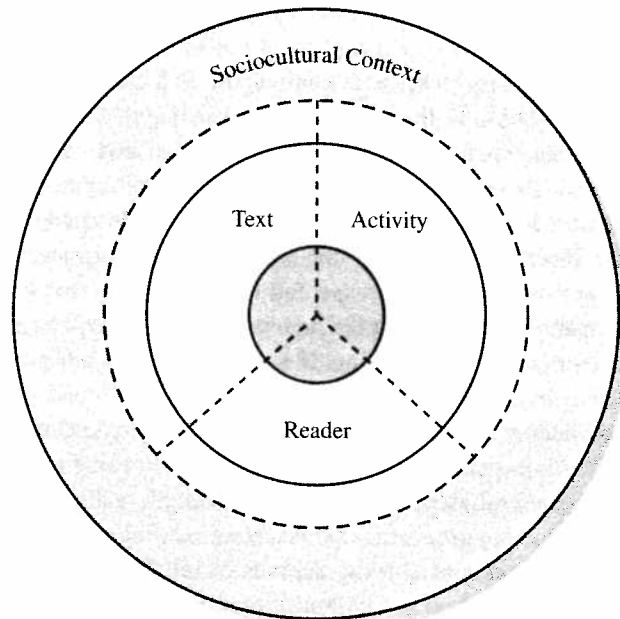


Figure 3.2 A heuristic for thinking about reading comprehension.

formulating a purpose for reading, the attentional and constructive processes involved in reading, and the impact on the reader (e.g., increment to knowledge, engagement) resulting from reading.

The most important portions of Figure 3.2 fall along the dotted lines: the interface between text features and reader capabilities, between reader capabilities and activity, and between activity and text features. Any of us can be rendered a poor comprehender by a text that is very badly written or that deals with a topic about which we lack background knowledge. Some activities—for example, reading quickly for the gist, or reading to understand and challenge the writer's argument, or reading to appreciate the writer's style—will be easier for some kinds of readers than others, and easier with some kinds of texts than others. Thus, the instructional challenge is to provide young readers with texts sufficiently accessible and motivating to keep them reading, but also sufficiently challenging to stimulate growth in their comprehension skills, vocabulary, and world knowledge.

The particular challenges of reading comprehension for the L2 reader can come in any of these domains. First, L2 readers are likely to be less advanced than monolingual or L1 readers in several of the domains that predict reading comprehension; vocabulary knowledge, knowledge of syntactic structures, and knowledge of discourse structures are all language-specific. Second,

the organization of texts and world knowledge presupposed by texts are language- and culture-specific, and thus also likely to be more challenging to L2 than to L1 readers. Third, to the extent that the reading tasks being posed are specific to a particular culture and school context, they might be unfamiliar or even puzzling to the learner. For example, if a student has first learned to read in a school setting where reading for memorization is expected, then being expected to question the text or compare two texts that give different perspectives on an issue requires new learning. If a student's reading experience has been confined to narratives, then reading fact-laden science texts might be a challenge. And if a student's experiences have been limited to reading texts considered reliable and credible, for example, school-assigned history or science books, then reading the wide variety of texts of varying degrees of reliability on the Internet poses new and unfamiliar problems.

LITERACY DEVELOPMENT AMONG CHILD SECOND LANGUAGE/SECOND CULTURE LEARNERS

In this section, we turn to the evidence about the literacy development of L2/C2 learners. We briefly summarize first the evidence that such children are at heightened risk of poor academic outcomes and relate those academic risks to the other risks (health, poverty, family relations, emotional stability) they face. We then turn to a review of the literacy development of these learners, how their knowledge of an L1 (and, for some, L1 literacy) does and does not relate to their L2 literacy development, school achievement, and school adjustment. A major question we address in this section is how individual differences among L2 learners relate to outcomes. Then we consider the influence of social and instructional settings to address questions about the conditions under which language minority children do and do not thrive.

Academic Outcomes of Second Language/Second Culture Learners: A Group at Risk

Analyses of the *National Assessment of Educational Progress: Reading Assessments (NAEP)* reading data (e.g., National Center for Education Statistics [NCES], 2003) make clear that L2/C2 learners in general perform

more poorly than monolingual English speakers. The *NAEP* data do not allow an easy analysis of the degree to which low proficiency in English contributes to deficits in performance, as compared to the contributions of cultural differences, as the data are disaggregated by ethnicity and not language proficiency status. However, analyses of state accountability data disaggregated by both language proficiency status and ethnicity make clear that both these factors independently are associated with poorer performance, and that when they combine, the likelihood of performing at expected levels decreases further. The *NAEP* findings can be summarized as showing that English-language learners, language minority children, and/or Latinos have on average achieved much lower levels of reading skill than English-only, monolingual, Anglo age-mates. What accounts for these effects?

The greater educational risks of this group of L2/C2 learners cannot, of course, be completely disentangled from their greater risks in other areas: poverty, poor health, experiences of family separation, emotional challenges, and so on (see papers in M. Suárez-Orozco and Pérez, 2002, for an overview). Furthermore, there is considerable evidence that some immigrant groups engage in family practices that are less likely to produce 5-year-olds ready for the expectations of U.S. kindergartens. Analysis of the data from the NCES (1995) birth cohort study suggests that Latino mothers are less likely to read books to their children, to make literacy materials available, and to purchase children's books than are Anglo mothers of the same educational level. Furthermore, studies that have examined the relationship between home literacy practices (either in L1 or L2) and L2 literacy and academic achievement of language minority students have found positive effects of certain home literacy factors for immigrant and English-language learning children, and negative effects of their absence. For example, Pucci and Ulanoff (1998) reported that proficient readers were more likely to have a greater number of books in the home. On the other hand, Leseman and de Jong (1998) found that reading comprehension and word decoding skills of Turkish and Surinamese language minority children in the Netherlands at age 7 were strongly determined by age 4 vocabulary on which using Dutch (L2) as the home language had significant effects. Moreover, they reported that home literacy practice, which was found to determine school literacy achievement, was strongly determined by socioeconomic status (SES) and race.

To some extent, these effects of home literacy practices on literacy outcomes may be mediated by their contribution to children's acquisition of the L1. Walters and Gunderson (1985) showed that Chinese immigrant children who heard stories read aloud in Chinese (L1) made significant gains in English reading and experienced no negative effects on their English reading achievement. However, as there was no control group, whether exposure to Chinese storybooks had direct effects on English reading skills or whether the gain in the reading achievement was caused by other factors is unknown. At any rate, it is important to note that such L1 exposure was not detrimental to children's school achievement. Similarly, Nguyen, Shin, and Krashen (2001) reported that Vietnamese students' competence in Vietnamese had no relationship with English literacy and that competence in spoken Vietnamese and high levels of the use of Vietnamese at home were not detrimental to the development of spoken English. That is, L1 use at home had neither positive nor negative effects on English language and literacy development for this population. Likewise, Rosenthal, Baker, and Ginsburg (1983) showed that Spanish-speaking language minority children's low academic achievement was explained more by SES and race than home language. They also found that Spanish language background for Hispanic children was strongly related to deficits in reading achievement at school, but that the language effect was much stronger for preexisting achievement levels than for learning over the school year. In other words, children who used Spanish at home may have started out scoring lower on measures of English literacy, but progressed as fast as English-only speakers, thus indicating no long-term negative effect of L1 use in the home on academic achievement in L2. In fact, though, such children need to progress faster than their English-only classmates if they are to perform at expected levels in later grades.

Though the impact of home language on L2 reading is somewhat equivocal, several studies have found that the percentage of English spoken at home is highly correlated with language minority students' English reading skills (Abedi, Lord, & Plummer, 1997; Beech & Keys, 1997; Connor, 1983; Kennedy & Park, 1994; Umbel, Pearson, Fernandez, & Oller, 1992). Beech and Keys found that Asian children who preferred speaking their L1 at home were significantly behind in English vocabulary development, controlling for nonverbal intelligence, although the impact on reading development was weak. The unexpected weak effects of vocabulary on reading

development that Beech and Keys found may be explained by the monolingual control group's low SES status; low SES children, like language minority children, are considered to be at risk for poor literacy development, especially for vocabulary knowledge. Abedi et al. reported that students who always spoke their L1 at home failed to complete as many test items as students who spoke only English at home. Umbel et al. also showed that Hispanic children who spoke both English and Spanish in the home scored higher on English vocabulary tests than those who spoke only Spanish in the home. These findings contradict Rosenthal et al.'s (1983) finding about the absence of long-term detrimental effects of L1 use at home on later school achievement. This further implies that a longitudinal approach is needed to examine the true relationship between home language use and L2 literacy development. It is only natural that 7- and 8-year-old children who are exposed to and use mainly L1 before starting school need to take some time to catch up and learn the new language. Thus, we should be more concerned about these children's L2 literacy skills after they have had plenty of exposure to L2 language and literacy than about their seemingly low performance in the early grades. Beech and Keys, Umbel et al., and Abedi et al.'s studies did not control for L2 learners' length of residence or length of schooling in the L2, and thus we should not jump to the conclusion that L1 use at the home is detrimental to later academic performance.

Interestingly, Kennedy and Park (1994) found that the role of home language had differential effects on the two ethnic groups of language minority children they studied: For Mexican American students, SES was the strong predictor of academic achievement, whereas home language was not. On the other hand, home language was a strong predictor for Asian American students' reading achievement on a standardized test: Asian American students who spoke English in the home performed significantly better than those who spoke L1 in the home. Such differences may be explained by the relevant language status of the two groups' L1 in the dominant society, the potential role of structural similarities and differences between L1 and L2, length of residency, and so on. Likewise, Fernandez and Nielsen (1986) found, somewhat paradoxically, that the L1 (Spanish) proficiency of Hispanic bilingual students was associated with greater academic achievement, whereas frequency of Spanish use had a negative effect on academic achievement. Their finding may reflect the fact

that the similarities in the linguistic and cultural properties of L1/C1 and L2/C2 facilitate positive influence on Spanish-speaking language minority children's L2 performance. Hence, those with high L1 proficiency may have developed an understanding about L2 linguistic properties in relation to their L1 and transferred their L1 knowledge to other relevant L2 academic settings, whereas merely speaking L1 frequently may reflect their reluctance to or inability to function well in L2.

This finding is somewhat related to what Rosowsky (2001) found with Muslim Mirpuri-Punjabi speakers in the U.K., although in that case, the children transferred their C1 literacy practice to L2 literacy skills. Although the Mirpuri-Punjabi-speaking children were not able to apply their L1 knowledge to L2 tasks, as their L1 does not share linguistic structural similarities with L2, they did as well as the English-monolingual children on English decoding tasks, possibly due to their C1, which emphasizes on accurate reading of the Qur'an. The same children, however, were lagging behind their monolingual counterparts on reading comprehension abilities, which require more C2 knowledge than decoding.

Because the literature shows considerable disagreement regarding the positive and negative effects of home language use on L2 literacy development, a firm conclusion cannot be drawn about the impact of continuity and discontinuity between home and school, which further implies that more in-depth and long-term investigation regarding the role of L1 use at home in different language minority groups' literacy and academic achievement is needed. However, these studies are quite convergent in showing that the amount and quality of home support for literacy development in either L1 or L2 relate strongly to L2 literacy achievement (Leseman & de Jong, 1998; Pucci & Ulanoff, 1998; Walters & Gunderson, 1985) and that L1 use at home does not impede L2 literacy development if it is accompanied by L2 use at home as well (Abedi et al., 1997; Beech & Keys, 1997). Thus, it is important for school literacy instruction to both provide support for and complement language minority students' home literacy experiences.

Possible Transfer Effects from First to Second Language: Evidence of Classroom Challenges Associated with Language Differences

The positive and negative effects of home language use on language minority students' literacy and school

achievement imply the potential existence of both positive and negative transfer effects from L1 on their L2 literacy development. Because such transfer effects may vary for different literacy domains, it is important to examine them for each of the component skills known to contribute to literacy achievement. For the review of literature relevant to each literacy domain, only those empirical studies that involve language minority learners learning the target language in a second language setting, as opposed to foreign-language setting, were considered.

Phonological Awareness

Research with monolingual beginning readers indicates that higher levels of phonological awareness are associated with beginning reading and spelling achievement (Adams, 1990; Bradley & Bryant, 1983). But the question remains whether the same relationship holds for bilingual children who may already have some degree of phonological awareness in their L1 but not in L2. In general, bilingual children seem to be better at phonological awareness tasks than English-monolingual children (Oller, Cobo-Lewis, & Eilers, 1998). Moreover, for bilingual children whose L1 and L2 share similar orthographic and phonological characteristics, there is not only transfer of phonological awareness between the two languages, but their L1 metalinguistic and phonological awareness account for significant variance in L2 literacy skills such as spelling, word recognition, pseudoword reading, and reading comprehension (Cisero & Royer, 1995; Comeau, Cormier, Grandmaison, & Lacroix, 1999; Durgunolu, Nagy, & Hancin-Bhatt, 1993; Gottardo, Yan, Siegel, & Wade-Woolley, 2001; Oller et al., 1998; Smith & Martin, 1997). Durgunolu et al., for example, tested Spanish-speaking first graders in a transitional bilingual education program in the United States on phonological awareness tasks and word identification skills in both Spanish and English. They showed not only that phonological awareness in Spanish was closely related to Spanish word recognition, but also that children who performed well on Spanish phonological awareness tests were more likely to be able to do well on English phonological awareness tests and, most important, on English word and pseudoword reading tests. That is, their L1 phonological awareness was a significant predictor of their performance on early literacy tasks both within and across languages. Similarly, Comeau et al. studied English-speaking grade 1, 3, and 5 children in French immersion classes and found cross-

language transfer in phonological awareness and word decoding skills.

However, such transfer of phonological awareness, which is predictive of early literacy skills in L2, may be constrained to the cases where L1 and L2 share similar phonological and orthographic properties. In fact, unlike Oller et al. (1998), who showed that Spanish-English bilingual children are better at phonological awareness tasks than English-monolingual children, Jackson, Holm, and Dodd (1988) found no difference between English-monolingual and Cantonese-English bilingual children's phonological awareness skills and found better performance of English-monolingual children on reading and spelling tasks as well as manipulation of phonemic information tasks. They also detected bilingual children's patterns of phonological awareness to be language-specific, related to the phonemic and syllabic structure of their L1. Their findings further indicate that bilingualism itself may not be a sufficient condition to heighten phonological awareness. These conflicting findings may be related to the differences in the orthographic characteristics of the two languages (alphabetic versus morpho-syllabic). In a similar study, Liow and Poon (1998) investigated phonological awareness of three different multilingual Chinese groups and showed that phonological awareness in L2 (English) was related to L1 orthographic depth and that tonal phonological awareness of the Chinese L1 children may not be optimal for English literacy development. However, neither study tested the bilingual children in their L1, so no conclusion can be drawn regarding the possibility of negative or zero transfer of bilingual children's L1 phonological awareness. Gottardo et al. (2001), on the other hand, did measure Chinese ESL learners' L1 phonological awareness using a rhyme detection test, and in accordance with research conducted with L2 children with alphabetic L1 backgrounds, showed that children's L1 phonological awareness was related not only to their L2 phonological awareness, but also to their L2 reading skills. This is a very important finding, for it "points to an underlying process that is not specific to the child's L1 phonology but that is related to the child's ability to reflect on all phonology to which he or she has a minimum level of exposure" (p. 539). Phonological awareness requires one to reflect on and manipulate the features of oral language. Gottardo et al.'s finding implies that children's ability to reflect on and manipulate structural features of a particular language can be applied to an L2, whether it is typologically different from L1 or not.

Regardless of the language minority children's L1 backgrounds, the positive relationship between phonological awareness and other literacy skills within L2 is still apparent, as in the case of monolingual children. And for children whose L1 and L2 share similar phonological and orthographic properties, developing or building on the children's L1 phonological awareness is likely to help their L2 literacy development. Questions still remain, however, about how to help language minority children whose L1 is very different from their L2. Spanish-speaking children's acquisition of phonological awareness skills in English and Spanish was found to be in the same order across languages (Cisero & Royer, 1995), but what would it look like if the child's L1 and L2 are typologically very different? More research needs to be done with different populations of language minority children to further shed light on the development of bilingual children's phonological awareness and other language skills and classroom practices.

Word Reading and Spelling

As would be anticipated from the findings relating phonological awareness to word reading, word reading is not normally an insuperable challenge to the language minority child. Lesaux and Siegel (2003), for example, have documented that L2 learners in English-only programs can achieve native-like levels of L2 word reading by the end of grade 2, if provided with systematic instruction and appropriate interventions if they are falling behind.

Most studies of language minority students' spelling development have looked at Spanish-speaking English-language learners in the United States and identified the challenges associated with language differences between L1 and L2. For example, studies of lower-grade Spanish-speaking language minority students have shown that L1 rules for spelling dominated when they were working on new words or pseudowords in L2 and that the L1 spelling system was applied to the L2 spelling task (Ferroli & Shanahan, 1993; Nathenson-Mejía, 1989). For instance, second- and third-grade Spanish-speaking children in Ferroli and Shanahan's study produced spelling errors caused by merged voiced versus voiceless sounds in the spelling system, as Spanish does not attend to differences in voicing as systematically as English does. Thus, some spelled *drink*, as *trink*, a Spanish-influenced spelling that differs from the correct spelling in a predictable way. Likewise, studies of language minority students' spelling in higher

grades also found that the influence of L1 was a predominant source of spelling errors in English (Cronnell, 1985) and that these children produced significantly more predicted L1-related errors than English-only children (Fashola, Drum, Mayer, & Kang, 1996). Moreover, L2 proficiency level was found to play an important role in spelling performance, as the less successful students produced significantly more L1-influenced errors than the more successful ones (Zutell & Allen, 1988).

Although there is not an abundance of studies with non-Spanish-speaking L1 language minority children, Wang and Geva's study (2003) with Chinese-speaking language minority students revealed similar L1 transfer effects in L2 spelling. Moreover, they were able to identify both effects of the L1 orthographic system and learning effects. The Chinese ESL students in Wang and Geva's study performed at a level similar to that of their English-monolingual counterparts in spelling real words. However, they performed significantly more poorly than English-monolingual children in pseudoword spelling. Also, the difference between real word and pseudoword spelling performance was much greater for Chinese ESL children than English-monolingual children. These results were explained by Chinese ESL children's reliance on the nonphonological route in spelling, the strategy employed and practiced for their L1 writing activities. Thus, when spelling unfamiliar words, they encountered difficulty in phoneme-grapheme mapping, which does not occur in their L1 because Chinese has a morphosyllabic orthography and is thus processed with the whole-word approach in spelling. For the same reason, the Chinese ESL children performed better than English-monolingual children in spelling visually presented orthographically legitimate/illegitimate and pronounceable/unpronounceable letter strings. That is, for the particular task that requires visual processing of letter strings, there was a positive L1-specific transfer for Chinese ESL children, who are used to processing letter strings visually as whole words.

In helping language minority children with L1 backgrounds both similar to and different from their L2, teachers need to be aware of the likely error patterns due to the L1 influence and the varying degrees of familiarity with both L1 and L2 phonological and spelling systems. To understand the differential effects of L1 spelling strategies of L2 students from diverse L1 backgrounds, however, studies need to be conducted that control for L1-specific spelling strategies, thus possibly comparing multiple ESL groups with similar L2 profi-

ciency level but whose L1s are orthographically different from and similar to English.

Vocabulary

Although it is known that vocabulary knowledge is related to reading comprehension ability for L1 children (Freebody & Anderson, 1983; Stanovich, 1986), there have been relatively few studies looking at language minority students' L2 vocabulary development in relation to their L1 background and literacy skills. Vocabulary is a crucial domain of literacy skills for L2 learners as well as L1 students, due to the reciprocal effects of vocabulary and reading comprehension and academic achievement in general: Vocabulary knowledge helps reading comprehension, and good reading comprehension leads to a natural process of new vocabulary acquisition.

The findings from the few studies on L2 learners' vocabulary knowledge in relation to their reading comprehension ability conform with studies with L1 learners. Nagy, García, Durgunoglu, and Hancin-Bhatt (1993), for example, not only found a positive relationship between L2 vocabulary knowledge and L2 reading comprehension scores, but also showed evidence of transfer of Spanish-English bilingual upper-grade students' L1 vocabulary knowledge to L2 reading. Moreover, they showed that such transfer is dependent on students' ability to recognize L1-L2 cognates in reading L2 passages. This particular finding holds important implications for literacy and reading instruction for language minority students whose L1 shares similar morphosyntactic features with their L2. In fact, Carlo et al. (2004) showed the positive effects of cognate instructions on Spanish-speaking English learners' English reading comprehension outcomes. However, such vocabulary instruction should take into consideration the L2 learners' level of L2 proficiency, as a certain level of L2 proficiency is required for guessing meanings of unfamiliar words in L2 reading contexts (Hancin-Bhatt & Nagy, 1994; Nagy, McClure, & Mir, 1997). Specifically, it was shown that Spanish-speaking English learners' ability to recognize cognates increased with age as their knowledge of the relationships between English and Spanish derivational suffixes became more concrete. Thus, cognate instruction should take into account the English-language learners' level of understanding of L1-L2 structural relationships.

As in the case of other literacy domains, however, we must be careful about the L1 backgrounds of the language minority children in assuming the positive trans-

fer effects of L1 vocabulary knowledge on L2 literacy skills. Verhoeven (1994), for example, found no predictive power of L1 vocabulary knowledge for L2 vocabulary development in Turkish-speaking Dutch learners in the Netherlands. Thus, more studies on the relationship between L1 vocabulary and the development of L2 literacy skills need to be carried out for language minority children whose L1 is morphosyntactically different from their L2. This, in turn, will yield useful guidelines regarding vocabulary instruction for L2 learners from diverse language backgrounds. The vocabulary (cognate) instruction for Spanish-speaking English learners was successful in Carlo et al.'s study (2004), partly because it relied on the interdependence of L1-L2. But what kind of instruction would benefit L2 learners from Vietnam, for example? What kinds of knowledge do the teachers need to know about L1-L2 relationships for those children to foster vocabulary improvement in L2? Studies addressing such questions will contribute to helping those children's academic achievement as well as reading comprehension.

Reading Comprehension

Research in the reading comprehension of language minority children has yielded evidence that L1 oral language and/or literacy skills can be both an asset and a hindrance in L2 reading comprehension, depending on age, L1 proficiency level, and L1 background.

Researchers have focused on Spanish-speaking English learners in studying the relationship between L1 literacy skills and L2 reading comprehension. Most of the studies are in agreement that those language minority children's L1 reading skills transfer to L2 reading comprehension (Calero-Breckheimer & Goetz, 1993; Langer, Bartolome, Vasquez, & Lucas, 1990; Reese, Garnier, Gallimore, & Goldenberg, 2000; Royer & Carlo, 1991). Calero-Breckheimer and Goetz, for instance, showed that third- and fourth-grade Hispanic students successfully transferred reading strategies between two languages, which contributed positively to reading comprehension in English. Likewise, Royer and Carlo found that the best predictor of English reading performance at the end of sixth grade was Spanish (L1) reading performance the previous year. In addition, Jiménez, García, and Pearson (1996) showed that successful Latina/o readers relied on various strategies, including transferring information and accessing cognate vocabulary across languages, whereas less successful readers were less effective in resolving comprehension difficulties in either language.

However, more careful investigation of the Spanish-speaking language minority children's background variables, including socioeconomic background, immigration status, and home language use, provided a more complex picture of such transfer. Buriel and Cardoza (1988) showed that Spanish oral proficiency and literacy skills predicted reading and other academic achievement variables only of the third-generation language minority children, but not the first- and second-generation children. Overall, the trend was for an increasing relationship of Spanish literacy to school achievement, including reading, across three generations. More specifically, third-generation students with greater literacy skills in L1 scored higher on the L2 reading test. Across three generations, however, L1 oral proficiency showed minimal relationship with L2 language and literacy skills, which further implies that L1 development does not hinder academic achievement in L2. The differential effect of L1 literacy skills on L2 reading across generations, however, does bring up an important issue: If a positive L1-L2 transfer of reading skills occurred only for the third-generation language minority students, those who probably had the most exposure to L2 language and literacy and spent the longest amount of time in the L2 setting, is a certain level of L2 proficiency or L2 input a prerequisite for such a positive transfer? Larger-scale studies with L2 learners from different language and cultural backgrounds within an ethnic group need to be conducted to get a more complete picture.

In addition, we need to pursue questions about L1 to L2 transfer for children from a wider array of L1 backgrounds, as most existing studies are limited to Hispanic students in the United States whose L1 rules and properties may contribute in unique ways to English reading comprehension. Connor (1983) looked at second- to 12th-grade students from 21 different L1 backgrounds and found that the percentage of English spoken at home and family SES had positive effects on reading skills in English, which, in a way, contradicts Nguyen et al.'s (2001) finding that there was no correlation between English reading performance on standardized tests and Vietnamese-speaking English learners' self-reported use of L1 at home. Nguyen et al. did not look at the relationship between the children's English use at home and English literacy outcomes to either support or argue against Connor's findings, although they did certainly show that L1 use at home is not a hindrance to L2 literacy development. On the other hand, Lasisi, Falodun, and Onyehalu (1988)

reported that seventh-grade Nigerian students performed better when reading culturally familiar passages than unfamiliar passages, which implies that the presence of cultural values in texts has an important impact on language minority students' performance in English reading. However, more studies are needed to generate a portrait of challenges and benefits associated with language minority students' language background in relation to their ability to read in English.

Furthermore, one should take into account the order of literacy instruction (submersion versus immersion) and the language minority students' proficiency level in both L1 and L2 before implementing any literacy instruction. Verhoeven (1994) suggested that the transfer of L1-L2 word decoding and reading comprehension abilities could be bidirectional, depending on the order of instruction. The reading comprehension abilities of Turkish-Dutch bilingual children in the Netherlands who were in the transitional bilingual education classes were predicted from their L1 reading comprehension abilities acquired earlier; likewise, Turkish-Dutch bilingual children who underwent an L2 submersion approach showed evidence of transfer in the opposite direction. The findings from Verhoeven's study have important policy and pedagogical implications for promoting L2 learners' academic achievement.

In general, the existing literature highlights the beneficial effect of L1 literacy skills for L2 reading comprehension and the importance of knowing which strategies and knowledge to transfer from L1 to L2 reading. This, in return, points out the importance of acknowledging and promoting language minority students' L1 literacy skills and instructing them on how to effectively use their assets for L2 reading comprehension.

Writing

There has not been much attention paid to the writing (composition) development of young language minority students, although many researchers have studied it in adult language minority populations. Lanauze and Snow's (1989) study is one of the few that looked at fourth- and fifth-grade Spanish-speaking language minority students' writing skills. They showed that children who were rated good in both L1 and English and children rated poor in English but good in L1 (Spanish) scored better in English and Spanish writing than the children rated poor in both languages. The children who were rated poor in English but good in Spanish produced English writing that was equivalent to that of the chil-

dren rated good in both languages in the complexity, sophistication, and semantic content of their English writing. In short, "One determinant of how early in the acquisition of the second language relevant L1 skills become available is their degree of mastery in the first language" (p. 338). Similarly, Nathenson-Mejía (1989), based on a single case study of a Spanish-speaking third-grader, suggested that the relationship between oral and written language is transactional, with benefits for language minority students. These results suggest the potentially facilitative impact of L1 literacy development on L2 literacy and academic skills. Writing is clearly an area in L2 literacy research that needs more attention and research, especially as it is a skill necessary for high academic achievement and success in upper grades and for higher education.

Possible Transfer Effects from First Culture to Second Language/Second Culture: Evidence of School/Classroom Challenges Associated with Cultural Differences

Relatively less attention has been paid to the effect of L2/C2 learners' cultural background on their literacy development in English and school achievement. The existing literature on cultural influences on literacy development falls into roughly three categories: (1) the relationship between C1/cultural familiarity with the C2 and literacy development, (2) discourse differences between home and school and their effect on L2 literacy development, and (3) the relationship between other cultural factors (e.g., SES, educational aspiration) and literacy development and school achievement.

Knowledge of the Second Culture

Research on the effect of cultural differences between home and school on L2/C2 learners' school achievement and literacy development has generated two very different findings. One set of studies found no relationship between C1 and school achievement, whereas the other set found that familiarity with C2 related to better school outcomes.

García-Vázquez (1995) found no significant relationship between measures of acculturation and reading comprehension skills of Spanish-speaking language minority students, which implies that acculturation to the dominant culture is not mandatory for high literacy achievement in English. Similarly, Abu-Rabia (1995) showed that cultural familiarity with reading material

made no difference in reading comprehension outcomes among Arab students whose English proficiency was stronger than their Arabic.

A larger set of studies, though, has shown that cultural familiarity and unfamiliarity with the dominant culture does influence language minority children's performance on reading comprehension (Abu-Rabia, 1998; Droop & Verhoeven, 1998; Hannon & McNally, 1986; Jiménez, 1997; Kenner, 1999; Rosowsky, 2001). Abu-Rabia reported that Arab students performed better on comprehension of Arabic cultural content regardless of the language of the text. Droop and Verhoeven identified a facilitating effect of cultural familiarity on reading comprehension and reading efficiency for Turkish and Moroccan language minority children in the Netherlands, whereas Rosowsky showed that language minority students' comprehension was far behind due to their lack of cultural familiarity with the meaning of texts, although they were able to decode text better than monolingual English-speaking children.

From the existing studies, it seems that, although acculturation does not always have an impact on literacy performance of L2/C2 learners, especially those with a high proficiency in L2, lack of knowledge of the dominant language and culture often has detrimental effects on school performance and literacy skills. Thus, it may be necessary for school literacy instruction to support the continuity of C1 to school and-explicit instruction in meaning-making strategies for culturally unfamiliar topics.

Discourse Patterns

Studies that focus on discourse patterns indicate that language minority students benefit from school interaction patterns that are similar to those in their home (Au & Mason, 1981; Ballenger, 2000; Hudicourt-Barnes, 2003; Huerta-Macias & Quintero, 1992; Wilkinson, Milosky, & Genishi, 1986). Au and Mason showed that native Hawaiian children's academic engagement, including reading activities, was facilitated when the classroom instructional interaction was compatible with that of their home. Similarly, Huerta-Macias and Quintero reported beneficial effects of code switching at school for biliteracy development of the language minority students who were used to code switching at home. Wilkinson et al. also found a positive relationship between reading achievement and displaying school-appropriate interaction patterns for Hispanic children. In short, studies are in agreement that ac-

knowledge of and sensitivity to language minority children's C1 support their literacy development in L2.

Additional Cultural Variables

Although many researchers have examined the influence of parents, family, home culture, and community on L2 literacy and school achievement, no study has documented their exact relationships or effects. The majority of such studies failed to report significant relationships (Buriel & Cardoza, 1988; Duran & Weffer, 1992; Goldenberg, Reese, & Gallimore, 1992). Duran and Weffer, for example, found that parents' educational values were not directly related to ninth-grade reading and 12th-grade school achievement of Mexican American high school students, although they did influence student behavior at school positively; such family educational values affected students' willingness to take math/science enrichment classes, which was significantly related to increase in related academic achievement. Likewise, Goldenberg et al. showed that home literacy practice was not as strongly related to Hispanic language minority children's reading achievement as school use of literacy materials and that parent expectations changed as a result of their child's school performance but not vice versa. Monzó and Rueda (2001) indicated a positive relationship between family literacy practices and resources and children's reading motivation, but their sample size was too small ($N = 5$) to make a general claim.

Kennedy and Park (1994) reported that the significant relationship between use of English at home and reading achievement at school for Hispanic children disappeared when SES was controlled, which suggests that the SES effect on English reading achievement was stronger than the effect of L2 use for this particular language minority group. However, the same was not true for Asian students; the relationship between their home language use and achievement remained significant even with SES controlled. However, little is known about the effect of SES on literacy and school achievement of language minority students in particular, although significant influences may be assumed from other sets of research with English-speaking children (Cook, 1991; Stubbs, 1980).

Summary

Our review of the literature on L2/C2 learners' performance on the key components of literacy demonstrates

the complexity of L1/C1 and L2/C2 relationships and how they vary as a function of the L1's cultural as well as linguistic characteristics, students' and parents' commitment to L1 as well as L2 language and literacy development, the social status of L1, length of residence, and immigration and socioeconomic status. In addition, the L1-L2 relationship is not always the same across different subcomponents of literacy skills, depending on the L2 learners' L1 and L2 proficiency level, degree of similarities and differences between the two languages, and home language use as well as home literacy practice. However, the literature generally agrees on the following:

- L1 and C1 knowledge and skills are not the main source of L2 learners' poor performance on L2 literacy tasks or academic failure. In most cases, they have positive effects on L2 literacy development, even when L2 is typologically different from L1.
- L1 maintenance and use does not impede L2 language and literacy development.
- L2 learners, in many cases, apply their L1 and C1 knowledge and skills to L2/C2 tasks, although sometimes they need instruction on how to transfer L1 knowledge effectively.
- L2 learners benefit from L1- and/or C1-sensitive instructions in L2 literacy development and academic achievement.
- Full acculturation may not be necessary for academic success, but knowledge of C2 does make a difference in reading comprehension and academic achievement.

In general, this survey of recent literature on transfer of L1/C1 literacy-related skills to L2 literacy development has shown both positive and negative relationships between L1 language/literacy skills and L2 literacy achievement. Except for the case of spelling, most studies show that L1 oral and literacy skills are positively correlated with equivalent skills in L2, but of course such positive correlations, though they are consistent with a transfer explanation, hardly constitute strong evidence in support of it. Perhaps learners with better skills in L1 are just smarter and thus faster in acquiring skills in L2.

Most important, we have only hints about the conditions under which transfer is most likely to occur and most likely to be positive and productive. We know, furthermore, that there are many opportunities for transfer

that are missed; for example, Spanish-speaking learners of English are unaware of the value of cognates until taught to use them (Nagy et al., 1993), and even then, students with limited literacy skills in Spanish are unable to recognize many potential cognates that give clues to word meaning. Jiménez (1997) reported on a small number of native Spanish speakers who were poor readers in English and who professed that reading in English and in Spanish were quite different, whereas his small group of better English readers said they used many of the same strategies in both languages, having evidently discovered the value of transfer on their own. Much more research needs to be done on how and when transfer functions, how it is related to differences between the L1 and the L2 and orthographic system, as well as how age, instruction, the sociolinguistics of the language community, and other factors affect the likelihood and the utility of transfer. With this enhanced knowledge base, we could offer stronger arguments about the value of encouraging language minority students' continued development of L1 language and literacy knowledge as an influence on their successful development of L2 literacy skills.

PROGRAMS DESIGNED FOR SECOND LANGUAGE/SECOND CULTURE LEARNERS

Given the long history in the United States and in northern Europe of immigration and of academic underperformance among immigrant students, it is surprising and unfortunate that we still lack incontrovertible evidence about key aspects of programs that best support the development of such children. There is, however, sufficient basis for arguing that certain instructional features contribute crucially to program effectiveness. In this section, we briefly review available evidence about the qualities of effective programs for preschoolers and elementary students, note those domains for which more evidence is needed, and provide sketches of some programs that exemplify both the features shown to be effective and the difficulties of implementing those features widely and consistently.

Preschool-Age Children

Programs designed for preschool-age L2/C2 learners should incorporate opportunities for the children to develop warm relationships with the adult caregivers/educators, rich opportunities for language interaction,

ried opportunities for engagement in literacy activities, and opportunities to acquire knowledge, concepts, and theories about the physical and social world through observation, conversation, discussion, and engagement with books. These features are, of course, precisely those that characterize good preschool education for any child; considerable evidence suggests that they are of particular importance in ensuring good outcomes for children at risk of poor academic outcomes, including children who have limited control over the language and culture of the schools they will attend.

We lack direct evidence concerning language use in preschool programs serving L2/C2 learners. Some would argue that the key characteristics of good programs—warm relationships with adults, access to concepts, theories, and new knowledge, and engagement in rich language and literacy activities—are unlikely to be present in an environment where the only language children know is not used. Others would respond that young children can quickly learn enough of the L2 encountered in the preschool to establish warm relationships with responsive adults, and that the task of acquiring rich language skills in the school language is best started earlier rather than later.

Few Illustrative Cases

U.S. Head Start programs serve a large and increasing population of English-language learners. Head Start programs are held accountable for standards set centrally but have local control over the specifics of program design. There is some disagreement within Head Start about program responsibilities for teaching children English. Some Head Start administrators and personnel interpret the responsibility to prepare children for school as dictating that they be taught English; others argue that the greater responsibility is to provide children with the social and academic skills that would ease English acquisition once they get to English-medium classrooms.

The historical shift toward all-English programs for immigrant children in elementary schools has had its influence on Head Start program design, increasing the pressure to provide English skills to preschoolers and diminishing the value associated with support for the L1 language and literacy skills. Nonetheless, one of the standards with which Head Start programs must comply is the availability of adults who speak the children's native language; for English-language learners, that adult sometimes is the classroom teacher, more often is an aide, and not infrequently is someone working in the office or the kitchen rather than a part of the educational staff.

In 1996, members of the Language Diversity Project team of the New England Head Start Quality Research Center¹ started working with a large Head Start program near Boston, in a town we refer to as Witham. Witham's Head Start served a population that was approximately 40% Spanish-speaking, and that ratio was reflected in each of the classrooms in the program. Most of the classrooms had a Spanish-speaking aide or assistant teacher and an English-speaking head teacher. Because the Witham public schools had a thriving bilingual education program, it seemed to us that promoting the Head Start children's Spanish skills, and their literacy skills through Spanish-language activities, might well be an approach worth considering. Thus, we proposed to the Witham Head Start director that Spanish-medium classrooms be established to serve Spanish-speaking and bilingual children. We offered to provide professional development and other forms of support to the teachers in such classrooms and to collect data on child performance that could be used by the program.

Though initially enthusiastic about this proposal, after reflection the Witham director pointed to a number of difficulties. First, there was only one fluent Spanish speaker on his staff qualified to serve as a head teacher. Second, he felt that parents would object if 4-year-olds were not receiving opportunities to learn English in the program. Third, and most frustrating, he noted logistical difficulties because classroom assignment was determined to a large extent by bus routes; the children who were bussed together would probably be a mix of Spanish and English speakers rather than language-homogeneous.

Despite these difficulties, it did turn out to be possible to create and study a single classroom in which two Spanish-speaking teachers developed and implemented a curriculum designed for a group of 3-year-olds. The coteachers in this classroom were Ana, formerly an English-medium Head Start teacher and a native bilingual with stronger literacy skills in English than in Spanish, and Luisa, a Spanish-dominant bilingual who previously had worked as a Head Start teacher in Puerto Rico and an assistant teacher in Witham Head Start classrooms. Regular professional development with Ana and Luisa was carried out by Aceves (2003), who also systematically

¹The Language Diversity project researchers working in Witham included Consuelo Aceves, Lilia Bartolome, Catherine Snow, and Patton Tabors; David Dickinson was the director of the New England Head Start Quality Research Center.

studied the language use and progress of the children in their class.

There are four kinds of data that cast light on the success of the language intervention in this classroom: teacher interviews conducted by Aceves and Bartolomé, observations of classroom practice conducted by Aceves, child language performance data collected by Aceves, and observations of child social and task-mastery skills collected by Bronson and Fetter (1998). In interviews, both Ana and Luisa reported that the complexity and sophistication of their curriculum was much greater in the Spanish-medium classroom than it had been in other years when they taught mixed-language groups all in English. In the observations, the sophistication of their language use, the levels of participation of their students, and the complexity of the topics they introduced into their curriculum were striking. Their classroom was characterized by curricular units (e.g., deep sea life) that one might encounter in a 4-year-old preschool classroom or even a kindergarten, and it was very different from the routine-oriented classroom, with simplified language and little formal curriculum, described by Tabors (1997) as the pedagogical response to a group composed mostly of L2/C2 learners. Language testing revealed that the children in Ana and Luisa's class made more than the expected gains in Spanish vocabulary over the year, and improved as well in English vocabulary despite the fact that their formal exposure to English was limited to 30 minutes a day of ESL. Finally, Bronson and Fetter's comparisons of these Spanish-speaking 3-year-olds to Spanish speakers in English-medium classrooms in the same Head Start program revealed them to be more socially competent and to score higher on task mastery.

In short, the experience of the adult participants and the test data strongly support the effectiveness of native-language preschool instruction in promoting children's overall development and documents the absence of negative effects on English development. Ana and Luisa taught a Spanish-language 3-year-old classroom for a 2nd year, with considerable interest from parents who had heard about the first year's experience. During the 2nd year, they became consulting teachers to their colleagues, because there was general recognition within the program that they were doing a very effective job of teaching and organizing their classroom. Given these successes, one might have expected the model to become a permanent option in the Witham Head Start program and to expand to more classrooms.

Unfortunately, neither of those things happened. The innovation was brief and limited, and both Ana and Luisa were back teaching in English-medium classrooms after 2 years. There was simply insufficient support from the administration of the Witham Head Start and insufficient data as to the value of the program to be able to keep it alive. The termination of the Language Diversity Project also meant that expectation of support and resources from Harvard associated with the intervention dwindled. Like many educational experiments, this remained a demonstration that never rose to the level of becoming standard practice.

The story of the Spanish-language classroom in Witham has been repeated dozens of times. A similar case studied by Wagenaar (1993) in the Netherlands was a preschool program delivered in Moroccan Arabic for the benefit of Moroccan children. The large numbers of Turkish and Moroccan children living in the Netherlands have very much the same achievement profile as Spanish-speaking children in U.S. schools. These children tend to live in relatively homogeneous, immigrant neighborhoods. They attend schools referred to in Holland as "black schools," emphasizing the paucity of ethnic Dutch children in them. They live in families in which the parents tend to maintain the ancestral language; many of the mothers are monolingual and have limited literacy skills in either the L1 or in Dutch.

The program Wagenaar (1993) studied started with 3-year-olds, this being the age at which public preschool normally begins in the Netherlands. It was conducted in Moroccan Arabic and welcomed mothers to spend time in the classroom and observe or take part in the activities designed to build children's classroom participation skills as well as basic numeracy, literacy, and world knowledge.

Like the Witham native language program, the Amsterdam program was judged highly successful by participating families and teachers. The children showed considerable gains in Arabic-language skills in comparison to other Moroccan children in traditional Dutch-language programs and, again like the Witham program, showed no comparative deficits in Dutch, though they continued to test below the level of monolingual Dutch-speaking children.

Again like the Witham program, the Amsterdam program (originally intended to develop into a full-fledged bilingual program as the children entered the elementary grades) lasted only 2 years. Logistical challenges

that simply could not be overcome included availability of sufficient numbers of qualified teachers who were fluent in both Moroccan Arabic and Dutch, and the difficulty of either excluding from the program or serving adequately within it the minority of Berber-speaking Moroccan children, for whom the program was ill-designed. Additional contributing factors certainly included the low perceived value of Moroccan Arabic in the Netherlands, and indeed its somewhat diminished role as an academic language even in Morocco, where standard Arabic is taught as the initial language of literacy and French is the language of higher schooling.

Failure of the capacity to develop and sustain sufficient numbers of programs like the Moroccan Arabic preschool studied by Wagenaar (1993) has led Dutch educators to abandon attempts at native-language schooling and to develop instead Dutch-language enrichment preschool programs designed for nonnative speakers. Three such programs that have been studied in some detail are the Dutch adaptation of the Israeli home-based program called HIPPY and the center-based programs Kaleidoskoop (a Dutch adaptation of HighScope) and Piramide. These three programs are notable for their minimization of explicit attention to the linguistic and cultural knowledge the children bring with them. They operate on a simple target language/target culture model: There are certain skills and capacities that children who will be successful in school need to have, and because their home does not naturally provide them, the programs are designed to teach them. Parent participation in the center-based programs is encouraged, in part because it is thought to be a route toward the acquisition of Dutch linguistic and cultural knowledge for the mothers, who might otherwise be somewhat isolated from Dutch society. Evaluation studies have shown no significant effect of the HIPPY program in the Netherlands (Eldering & Vedder, 1993), but the two center-based programs, Piramide and Kaleidoskoop, have generated gains for participating children (Schonewille, Kloprogge, & van der Leij, 2000; Veen, Roeleveld, & Leseman, 2000).

Immigrants to the Netherlands share with the indigenous population a sense that Dutch norms need to be acquired, and that their own languages are somehow unsuited to schooling. Kook (1994) and Muysken, Kook, and Vedder (1996), describing parent-child interaction among Papiamentto-speaking immigrants to the Netherlands from the Dutch West Indies, noted that even those

mothers whose Dutch was very limited would switch to Dutch when presenting certain "academic" content to their preschool-age children, for example, numbers, shapes, and colors. Afkir (2002), in a study of low-income Moroccan mothers interacting with their kindergarten-age children, noted a similar switch from Moroccan Arabic to French for academic content; in this case as well, the mothers themselves possessed minimal skills in French. There is indeed a general sense in multicultural and/or multilingual settings that some languages are worth more than others and are more appropriate for formal tasks, for literacy, and for academic practices; this sense, which may well be unexpressed, is shared by policymakers, the public at large (as indicated by Ron Unz's success in passing referenda limiting bilingual education), many educators, and even parents who themselves have little education and minimal control over the language of power. The specifics of these consensual valuations of language are sometimes puzzling; it may not seem strange that Creole languages like Papiamentto and Haitian Kreyol, which have few native speakers and relatively brief literary traditions, easily give way before standard, national languages like Dutch and English. But why should Arabic, a language of high culture and long-standing literacy, and the fourth most widely spoken language in the world, be of less value in school than French or Dutch (a language spoken by fewer than 25 million people, almost all of whom speak another European language fairly well)? Nonetheless, Arabic has little status in Holland or in France, with severe consequences for the potential of North African immigrants in those nations to be successful students in their L2 or to maintain their L1 at high levels of proficiency or literacy.

Elementary School Programs

For elementary school programs, theory as well as the wisdom of practice would lead to the conclusion that programs that incorporate the native language have an advantage for one segment of the population: those children who are at some risk of difficulty in learning to read and who have not acquired literacy skills in their native language. The Committee on the Prevention of Reading Difficulties in Young Children (Snow et al., 1998) recommended native language literacy instruction specifically for that group; at the same time, they suggested the postponement of literacy instruction until

children had acquired some oral English and strong emergent literacy skills.

The argument presented by the Committee on the Prevention of Reading Difficulties focused on literacy outcomes as the primary goal of native language instruction; in other words, it argued from the presupposition that the basics of literacy should be taught in a way that optimizes access to meaning, and that transfer of L1 literacy skills to L2 would be more efficient than teaching L2 skills directly. As noted earlier and acknowledged by the Committee, this recommendation is not strongly supported by evaluation data, though the more scholarly and politically neutral meta-analyses of English-only versus bilingual programs (e.g., Willig, 1985) generally come out showing small positive and no negative effects for bilingual education.

Transitional Bilingual Programs

The term “transitional bilingual program” is used for programs that are designed to ease the language learner’s entry into schooling in the majority language. They are formally distinguished from various sorts of maintenance bilingual programs, which are designed to support development of oral and literacy skills in the native language with true bilingualism as the outcome. In fact, though, the classroom activities that go on in transitional versus maintenance programs may not be radically different. In each type of program, on the other hand, there is considerable heterogeneity of pedagogical approach and language use. The most common arrangement in bilingual programs of both types is that a single, bilingual teacher is responsible for the delivery of instruction in both the L1 and the L2, operating with some more or less formal guidelines for amounts of L1 and of L2. Very few programs separate language by teacher, pairing an English speaker with an other-language speaker in serving two classes. Some programs separate language by subject matter, teaching math, art, and music, for example, in English, and teaching reading, social studies, and science in the L1. Other programs prescribe use of both languages in all subjects, for example, presenting new material in the native language and then teaching it again in English to provide the relevant English vocabulary. Alternatively, teaching might go on primarily in English, with use of the native language to repeat and reinforce lessons that some children struggle with. Sometimes literacy is taught first in the native language and subsequently in English, but most often literacy is taught simultaneously in both languages

but at different times of day. Some programs even prescribe that every teacher utterance be produced in both English and the children’s L1—an approach almost certain to lead students to ignore half of what is said.

Two-Way Bilingual Programs

Some educators (e.g., Christian, 1994) have made the more millennial argument that bilingual education is of value not just as a way of reducing risk for L2/C2 learners, but as a way of promoting bilingualism. Maintenance programs, for example, are designed not only to teach English and transfer students into mainstream classrooms as quickly as possible, but to teach literacy, language arts, and content in both the native language and in English, with the goal of producing highly proficient bilinguals. A particular approach to maintenance of L1 skills for L2 learners is represented by two-way bilingual (also called two-way immersion) programs, in which L2/C2 learners and English-only students study together in classrooms where half the instruction is provided in English and half in the other language.

Evidence about the conditions under which two-way programs are successful for all their students is accumulating (Cazabon, Lambert, & Hall, 1998; Howard, Christian, & Genesee, 2004). The major challenge in such programs is not the acquisition of English by the language minority students, but the acquisition of the other language by the English speakers. Creating conditions under which English speakers devote time and energy to L2 learning is not easy (another symptom of the high status of English), and the obstacles to keeping the other language robust in such programs are many. What are these obstacles? They range from within-classroom effects to the consequences of school, district, and statewide policies. They can be overcome only by ensuring that changes are made at all four of these levels of organization simultaneously.

One study of fourth- and fifth-grade classrooms in a two-way bilingual school (Carrigo, 2000) documented the many classroom-level contexts that led to use of English, even during the part of the school day designated as Spanish time. When groups of native English speakers were working together, they were very unlikely to speak in Spanish, even if their work involved Spanish texts; teachers interacting with such groups often accommodated to their language choice. When student groups included both native English and native Spanish speakers, again there was a strong tendency for peer and teacher talk to be in English; this reflected both the

fact that the Spanish speakers were more proficient in English than the English speakers were in Spanish, and that English was the high-status language among the students. Only in small groups where all the students were native Spanish speakers did group work and teacher talk reliably occur in Spanish. Although the Spanish-speaking students had access to quite sophisticated Spanish-language use during these interactions, they were not very frequent, and native English speakers had few opportunities to participate in Spanish-rich discussions.

The principal of another two-way school, which we call Clemente, recognized a similar problem in her school: The teachers deviated massively from the planned use of Spanish in the higher grades, reverting to almost 100% English. The teachers reported that many of the children in their classes simply couldn't understand Spanish, whereas everyone could understand English. How can one explain this outcome in a school that had provided systematic Spanish and English instruction from kindergarten? Several factors emerged as relevant. First, Clemente was a Success for All school, and the Success for All program, with its required daily 90-minute literacy block, was delivered entirely in English. Thus, the 50-50 split between Spanish and English started only after the most intensive teaching of the day had ended. Second, the Clemente School and the district in which it was located were under considerable pressure to show adequate improvement on the mandated statewide test. The superintendent required in-class test preparation programs be used in third and higher grades in all the schools, such as Clemente, which were in danger of showing inadequate progress. The test preparation activities absorbed at least 90 minutes a day between January and April and were, of course, all carried out in English. Third, Clemente was located in a very mixed neighborhood, not a homogeneously Latino or Spanish-speaking part of town. Every year, in every grade, new students were enrolled whose parents were not seeking a two-way program but had picked Clemente for convenience. These English-only speakers were unable, if they entered in third or fourth grade, to follow instruction offered in Spanish. All these factors led to a situation in which Clemente was offering a two-way program in name only. In kindergarten through second grade, the program was perhaps 30% Spanish, and in third and higher grades perhaps 15% Spanish. Thus, it was not surprising that many English-speaking children failed to learn much Spanish, and that Spanish speakers were soon opting as

well for the default language, English, for in- and out-of-classroom interactions.

What factors are associated with better adherence to the principles of two-way programs? First, the sociolinguistic reality that English is more highly valued than other languages has to be recognized and acknowledged in program designs; programs are more successful if they counteract that reality by making the other language unavoidable. They can do this by instituting preschool programs that are delivered entirely in the other language; such programs function as enrichment for the other-language speakers and as immersion L2 settings for English speakers. They can adopt so-called 90-10 or 80-20 designs, in which kindergarten instruction is heavily weighted to the other language, with a gradual shift to a 50-50 balance of language use by third grade. Some programs find that they still need to reinforce the other language by offering afterschool and/or summer school activities that are highly engaging and monolingual, banning the use of English in these settings.

Second, the natural tendency to accommodate to the less proficient speakers of a language has to be counteracted. Two-way programs should be able to exclude monolingual English speakers as new entrants after kindergarten or grade 1, and transfer to other programs students who are not making expected progress in the L2 within the program. Two-way programs need extra resources so they can offer L2 courses for parents, both in English for the immigrant parents and in the other language for English-only parents. How can parents help with homework, after all, if they don't speak both of the languages in which their child is studying?

Third, the value of bilingual outcomes should be acknowledged by the district and the community, for example, by reporting children's scores on tests administered in the other language as well as in English, by establishing some level of other-language proficiency as a high school graduation requirement, and by featuring the two-way programs as high-status magnet programs rather than treating them as remedial.

Supporting Second Language/Second Culture Learners in Predominantly English Instruction

We made the argument that students could transfer knowledge acquired in their L1 and C1 to be more efficient and effective L2/C2 learners. But we also presented evidence that transfer is neither automatic nor inevitable. Transfer is more or less likely, and more or less helpful, as a function of the L1-L2 and C1-C2

relationships, the specific L2/C2 learning task, the degree of metacognitive capacity of the learner, and the skill of the teacher. Many students simply fail to recognize or exploit knowledge they possess that could help them solve L2/C2 problems. Of course, this specific problem of ensuring that learners transfer knowledge from a well-established to a novel domain of functioning is ubiquitous in education. But it is particularly acute for the L2/C2 learner, who is in the position of having to learn more than the monolingual student, and to catch up with monolingual levels of functioning in less time. Helping L2/C2 learners meet or even surpass the academic achievement of their monolingual classmates requires figuring out how to help them turn their L1/C1 knowledge into an asset through transfer.

One such attempt was the Vocabulary Improvement Project (VIP), a vocabulary intervention designed to enrich fourth- and fifth-grade Spanish-speaking English-language learners' academic vocabulary in English (L2) through helping them make use of their vocabulary and linguistic knowledge in L1 and promoting L1-L2 transfer (August, Carlo, Lively, McLaughlin, & Snow, 2005; Carlo et al., 2004; Lively, August, Carlo, & Snow, 2003). The VIP was initially designed in accordance with research indicating that vocabulary knowledge was one of the key predictors of students' performance in reading comprehension; furthermore, vocabulary knowledge sufficient to ensure comprehension of moderately complex texts creates opportunities for new vocabulary learning (Fukkink & de Gloppe, 1998). The VIP focused on teaching children strategies for word learning as much as new vocabulary items. Those strategies, furthermore, were directed at various aspects of lexical knowledge, including morphology (affixes, frequently occurring Latin and Greek roots), recognizing multiple meanings of words, thinking about semantic associations (e.g., superordinates, antonyms, near synonyms), and the metalinguistic knowledge required to give definitions (Lively et al., 2003). That is, the VIP not only taught *words*, but also taught *about words*, so that the children could both develop skills to infer word meanings independently and develop curiosity about words. What is more, by teaching cognate use and previewing each lesson in Spanish before introduction in English, the VIP encouraged Spanish-speaking English-language learners to use their L1 knowledge to improve their vocabulary knowledge and text comprehension.

After the 15-week intervention, introducing 10 to 12 target words each week for 30 to 45 minutes, 4 days a

week, the VIP was found to improve children's performance in reading comprehension, word knowledge, and metalinguistic analysis of novel vocabulary items (Carlo et al., 2004; Dressler, 2000). Both the English-language learners and the monolingual English speakers showed improvement, but the English-language learners did not improve at a faster rate; in other words, the curriculum was effective but, in the short run at least, did not contribute to closing the gap between English-language learners and their monolingual classmates.

The VIP undertaking provides a salutary lesson about the relation of applied and basic research to practice, and vice versa (see Selman & Dray, Chapter 10, this *Handbook*, this volume). This project was conceived as one in which we collaborated with teachers to design the curriculum. Two 3-day meetings were held at which participating researchers and teachers shared insights from the research literature and from classroom practice and developed ideas about how best to promote vocabulary development. Although those meetings were energizing, they did not in fact generate a usable curriculum. Most of the participating teachers represented themselves as already paying a lot of attention to vocabulary development in their classes, but the techniques they suggested (giving children dictionaries, repeating English words with Spanish phonology so as to remember the spelling, using word walls) were neither innovative nor sufficiently effective. Thus, having failed with at least that approach to seeking inspiration from practice, the research team reverted to the traditional transmission model; we reviewed the basic and applied research about vocabulary acquisition, designed the curriculum on that basis, carefully observed its implementation and collected information from the teachers using it about its flaws, and then produced an improved design for the next year of the study.

Reverting to practice-embedded work in studying the implementation taught us a crucial lesson: This curriculum makes a very great demand on teacher knowledge. Several of the teachers would have required considerable professional development to ensure that they understood enough about linguistics and second-language acquisition to implement the curriculum faithfully (White, 2000). For example, doing a good job with the lessons devoted to promoting cognate use required some knowledge of Latin, Spanish, or another Romance language, which many of the teachers did not have. Some understanding of the morphological structure of English was presupposed in the lessons we designed. Indeed, we also presupposed (incorrectly, in a few cases) that the teach-

They would already know the correct pronunciation and use of the words taught in the curriculum. Knowledge about English, knowledge about linguistics, and cross-linguistic knowledge were all needed if teachers were to optimize the learning the VIP was designed for. Valuable opportunities for the teachers, especially those in diverse classrooms, to understand the exact linguistic and metalinguistic challenges their English-language learners are going through must occur in combination with supplying good teacher manuals and a well-designed curriculum.

Despite its success in promoting positive L1-L2 transfer in Spanish-speaking English-language learners as well as supporting vocabulary and reading comprehension in monolingual English speakers, the intervention has not survived as an intact instructional program in any of the classrooms where it was introduced. It has generated a published curriculum designed for fourth-, fifth-, and sixth-grade English-language learners (Lively et al., 2003); a larger-scale evaluation of the effectiveness of the curriculum is, of course, needed.

Another curriculum that aimed to promote English-language learners' academic performance by being sensitive to their linguistic and cultural background was designed by the Chèche Konnen Center for teaching science to Haitian Creole-speaking upper-elementary and middle school English-language learners. Previous studies (e.g., O. Lee & Fradd, 1996) had concluded that Haitian children were nonverbal and incompetent in science classes. Based on an understanding of the essentially oral Haitian culture and of the common Haitian practice of *Bay Odyans* ("chatting" or "science argumentation"), the research team of the Chèche Konnen Center encouraged the use of such discourse during science classes, supported the use of the students' L1, Haitian Creole, and incorporated students' existing knowledge into science teaching. Thus, the program not only supported bilingualism by encouraging the use of L1, but also showed sensitivity to the C1 by making use of their C1 discourse practice. The research team found that the Haitian students provided with a culturally familiar setting showed growth in learning behaviors and science knowledge similar to that of the mainstream students (Ballenger, 2000; Hudicourt-Barnes, 2003). More rigorous and large-scale evaluations of this approach to science instruction for Haitian immigrants are needed.

The Chèche Konnen project differed from traditional approaches to teaching Haitian children both in the contexts created for learning and in the assessment procedures used. O. Lee & Fradd's (1996) study used tradi-

tional testing, whereas the Chèche Konnen classroom used discourse-embedded assessments. Thus, curriculum design that utilizes English-language learners' L1 and C1 in academic content areas may need to be supplemented, not just by teacher professional development, but also by language- and culture-sensitive measures to assess English-language learners' growth and development in learning.

CONCLUSION

We have sketched the challenges that becoming literate poses to all learners, then elaborated evidence that learning to read is a particular challenge for the L2/C2 learner. There were two themes in our analysis. The first is the complexity of the challenges posed, both to newcomers in a society and to the locals who are responsible for teaching, working with, or interacting with the newcomers, by the need to learn each others' languages, literacies, discourse patterns, and culturally prescribed ways of operating. We have argued that, if L2/C2 learners are to catch up with monolinguals in the academic, linguistic, and literacy skills needed for success in school and in the workplace, educational procedures are needed that enhance transfer, thus exploiting the knowledge of the L1 and C1 that learners bring with them. The second theme is the need, in complex and multifaceted domains like second-language learning and education for language minorities, for practice-embedded and practice-inspired research to complement the contributions of traditional basic and applied research. The fastest route to understanding what educational treatments work best to ensure language and literacy acquisition for various subgroups of L2 learners is to study successful practice, to build on the wisdom accumulated by successful practitioners, and to systematize that wisdom to be able to test it and make it public.

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