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Second-Language Acquisition, Bilingual Education, and Prospects for a Language-Rich Nation

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The real language-resource issue that this country faces is not whether immigrant students are learning English. They really are doing so—not as fast, perhaps, as some would like, but in ways that are entirely consistent with our understanding of the processes of second-language acquisition.

A much more important resource issue, actually, is how to teach English as a second language while preserving the primary language of immigrant students. To do both would greatly improve the linguistic repertoire of the nation.

To illuminate this issue, I will first summarize what we know about second-language acquisition. I will then present some evidence that even a robust language like Spanish is being lost at a surprisingly rapid pace in the United States. Finally, I will urge state school chiefs to help develop our language resources by shifting from a simple focus on learning English to a more sophisticated position that promotes doing what needs to be done to develop a language-rich nation.

THE ACQUISITION OF A SECOND LANGUAGE—THE ESSENTIALS

Researchers often distinguish between the acquisition of a *second* language and of a *foreign* language. Second-language acquisition means that the language learned becomes a functional part of the learner's life. Most commonly, learners acquire a second language when they move to a country where that language is widely used.

A foreign language is far more removed than a second language. The principal feature of foreign-language learning is its significantly contained context—usually a classroom. Foreign-language learning

may well be limited to an academic exercise or preparation for some future activity (for example, a junior year abroad).

Traditionally, learning a foreign language has made much more sense in geographically isolated parts of the world, such as the United States, where people can move great distances without a shift in language. Recently, however, the world economic status quo has changed, and Americans more frequently find themselves in situations requiring second-language acquisition.

It is difficult, for example, not to notice the sharp rise in the number of Americans dressed in traditional Japanese business uniforms during Tokyo rush hours. Many of these business people are struggling to make Japanese their second language. Their knowledge of Japanese—at a foreign-language level of competence—is no longer sufficient.

A major difference between second-language acquisition and foreign-language acquisition is the criterion against which success is judged. Learners in second-language programs are measured against native speakers of English.

American society, for instance, expects immigrants to learn English as a second language and to learn it rapidly and well. The tremendous differences in rate of second-language acquisition (which often vary with circumstances, personality, and language aptitude) are virtually ignored. Second-language programs are

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criticized if they do not swiftly produce fluent speakers of English, ready to compete with native speakers of English.

Meanwhile, model foreign-language programs are measured against seriously crippled traditional foreign-language programs, which included the great disappointments of the audiolingual and FLES (Foreign Languages in Elementary Schools) movements.

The immersion approach, for instance, which models itself after programs in Canada, has been hailed as a success; but it is only a success in relation to programs that have repeatedly failed to produce foreign-language-competent Americans. Indeed, outstanding students who study Japanese in the United States often go to Japan and are seriously demoralized when they discover that they are gravely deficient in their "second" language.

How, then, do learners acquire a second language?

THREE VIEWS OF HOW A SECOND LANGUAGE IS ACQUIRED

Admittedly, our present understanding of the process is far from complete, but our knowledge about it has vastly increased in the past thirty years. Further, our knowledge about second-language learning cannot be separated totally from vast increments in our understanding of language and learning.

In general, though, research in language learning moved from empiricism to a simple cognitivism to cognitivism with greater sensitivity to the context in which learning occurs.

Empiricists believed that learning is the result of experience. Principles of learning were extremely general, extending not just across different domains of learning (for example, learning to ride a bicycle versus learning to count), but even across species—in B. F. Skinner's unforgettable words, "Pigeon, rat, monkey, which is which? It doesn't matter" (quoted in Gracia, McGowan, & Green, 1972).

To the empiricist, second-language learning involved transfer of habits from the native language to the second language. Similarities between the two languages were thought to facilitate learning (positive transfer), while differences were thought to interfere with learning (negative transfer). Thus, a native speaker of Spanish might experience positive transfer in learning the English distinction between definite and indefinite articles because they exist in the native language. On the other hand, the learner would experience negative transfer in learning negation, because

the negative element always precedes the auxiliary verb in Spanish, but follows the auxiliary verb in English.

This paradigm for second-language learning as transfer (it was also called "contrastive analysis," denoting the formal linguistic exercise of contrasting the rule systems of two languages) carried with it the view that the linguistic "reflexes" of the two languages would compete with each other. Since keeping the first language was thought to get in the way of acquiring a second language, learning a second language required suppression of the native language.

For both theoretical and empirical reasons, the empiricist view of second-language acquisition was rejected and replaced by the raw cognitive view. This trend, dominated by Chomsky's revolutionary ideas in linguistics in the late 1950s, characterized the child as a "language acquisition device" that took degenerate and incomplete linguistic data as input and produced highly detailed and abstract knowledge of linguistic rules as output. Knowledge also came to be viewed as highly domain-specific and species-specific.

In the most extreme form of cognitivism, language was considered an innate endowment of the human species—a mental organ. Its development, therefore, was no more a product of experience than a real physical organ, such as the liver. A liver develops, as does language, but people do not "learn liver" any more than they "learn language."

Since language came to be seen as an innate endowment that unfolds, rather than as a capacity constructed through experience, the competition between the two languages was no longer the primary focus for understanding second-language acquisition. Indeed, much of the research during the 1970s focused on the extent to which grammatical development in the second language was unrelated to the qualities of the native language, as well as the parallels between first- and second-language development.

Dissatisfaction with this decontextualized view of learning started in the early 1970s. Within the discipline of linguistics, sociolinguistics emerged as a strong force. William Labov showed impressive correlations between language behavior and social class and argued that this systematic variation needs to be part of our knowledge about language.

Concurrently, psychology moved toward a more ecological and contextualized view of human development. In developmental psychology, the role of the teacher and society in guiding the interrelationships between the various capacities of children (such as thought and language) became prominent.

In addition, cognitive psychologists were increasingly finding the need to posit "executive functions" that oversee ordinary cognition; and the development of the awareness of the executive function (known technically as "metacognition") in children was highlighted. Finally, important overlaps between language and a variety of functions, including discourse, literacy, and social class, became more salient as interdisciplinary inquiry flourished. In particular, Vygotsky's view of culture as an amplifier of human cognition acquired popularity.

Cognitivism influenced by contextual factors does not really deny the existence of the innateness of aspects of language, but emphasizes that any human activity involves the synchronization of multiple capacities (language being one). The current state of second-language acquisition research can be characterized as a plethora of exciting exploratory studies that examine the relationships between language and the tasks for which it is used: communication, thinking, writing, and so forth.

THE ACQUISITION OF A SECOND LANGUAGE—THIRTY YEARS OF RESEARCH

From comments that I have gathered over the years, a composite person-on-the-street's understanding of second-language acquisition might be expressed this way:

The best way for a kid to learn English is to be immersed in it. For example, my grandfather was an immigrant, and he did not speak a word of English when he came to this country. But he learned English fine without being put in a special class for bilingual kids. In fact, the native language probably gets in the way of learning English, serves as a psychological crutch, and probably blows their fuses because not all kids can handle more than one language. If a kid is just exposed to English, he'll pick it up in no time, matter of a few months or a year at most.

By this standard, virtually all immigrant students in the United States are failures because they are not learning English nearly fast enough. In addition, bilingual education programs that provide instruction in the native language are interfering with the development of student proficiency in English.

From the perspective of second-language acquisition research, however, the stated expectations are unrealistic. Furthermore, the native language is not an obstacle to be overcome, but acts as a foundation on

which English can be built. Therefore, bilingual education supports (rather than subverts) the goal of English-language development.

These conclusions are part of a body of research and theory in second-language acquisition. They stem from studies conducted over the last thirty years during the course of the three mentioned trends in the field.

Nine separate conclusions are of key relevance to educators of bilingual children:

(1) The native language and the second language are complementary, not mutually exclusive. Further, native-language proficiency is a powerful predictor of the pace of second-language development.

Research has not supported the old notion that time spent on the native language detracts from the development of the second language. If anything, greater elaboration of the native language results in more efficient acquisition of the second language.

A study I reported in 1987, for example, found a pattern of increasing correlation between Spanish and English vocabulary scores in several groups of Puerto Rican bilingual education students observed longitudinally over a period of three years. Other cross-sectional studies (Cummins, 1984; Snow, 1987) also report high levels of cross-language correlations among their proficiency measures in the two languages. The fact that older children are more efficient than younger children as second-language learners provides further evidence that stronger native-language proficiency translates into better second-language learning.

(2) The influence of the structural patterns of the native language on patterns of second-language acquisition are minimal, especially at the level of grammar.

Although the old literature assumed that overcoming the old habits of the native language constituted the bulk of the difficulty in second-language learning, current researchers no longer hold this view. Learners of English as a second language have much in common, regardless of their native languages. For example, the error-analysis literature reviewed in McLaughlin (1984, 1985) and earlier work reviewed in Hakuta and Cancino (1977) generally show that native-language structures exert a measurable but far from overwhelming impact on second-language acquisition. It is likely that interference errors simply are highly salient, and because of their conspicuousness, they draw a greater share of the attention of teachers and researchers.

(3) Language proficiency is not monolithic, but consists of a diverse collection of skills that are not necessarily correlated. Minimally, a distinction must be made between contextualized and decontextualized language skills. Contextualized, face-to-face conversational skills seem to develop more rapidly than decontextualized skills, although the latter is more important for academic success.

Our understanding of language proficiency has undergone a transformation similar to our conception of intelligence over the years. The earlier view that the complexity of human intelligence could be reduced to a single score on an IQ test, permitting individuals to be rank ordered, is no longer valid (Sternberg, 1985).

Similarly, we are starting to carve up language ability beyond simple notions of "language aptitude." Cummins (1984), for example, distinguishes between communicative language (commonly called BICS) and academic language (termed CALP). Snow (1987) supports a distinction between contextualized and decontextualized language skills. Despite some important differences, these conceptualizations agree on the inadequacy of measuring proficiency in a unidimensional way.

(4) The attainment of age-appropriate levels of performance in the second language takes four to seven years.

Expectations of how quickly children can acquire a second language have dipped as low as six weeks (Epstein, 1977), but this view of rapid learning is presumably based on informal observations and does not reflect development in all aspects of language use.

When Collier recently summarized her own work and that of others, she indicated that immigrant students from a variety of language backgrounds do catch up with native speakers of English, but take considerably longer than the two to three years that students are commonly expected to remain in bilingual programs. Completely closing the language gap takes a minimum of four years, regardless of the type of program or students' language and social backgrounds.

(5) Age may be a factor that constrains phonological and grammatical acquisition of a second language, but not the academic functions of language.

No evidence supports the idea of a biologically determined critical period before which second language happens easily and after which it happens with difficulty. In the short term at least, good evidence indicates that older learners excel due to their greater cognitive maturity, although specific optimal ages have yet to be determined (Snow & Hoefnagel-Hohle, 1977). Collier suggests that children between the ages

of 8 and 12 are the most apt second-language learners. Studies have suggested that phonological and grammatical abilities decline with age, but that this decline is slow and linear.

(6) Research that relates affective factors to second-language learning is not applicable to immigrants learning English because people in this group are highly motivated to learn English. Their attitudes are more likely to affect the extent to which their native languages are maintained.

Studies of English-speaking Canadians learning French in English-speaking parts of the country point strongly to the role of attitudes and motivation in the success of second-language study (Gardner et al., 1985), but these relationships can only be generalized with great caution to the learning of English by immigrants to the United States.

The Canadian studies are of students formally learning a language that is not part of the larger, English-speaking social milieu. Thus the research situation is more analogous to native speakers of English in the United States who are learning Spanish as a foreign language.

The variables of attitude and motivation are not applicable to immigrants, who overall are highly motivated to learn English and to do so quite rapidly. In one 1990 study of Mexican-descent students in northern California, D'Andrea and I discovered that attitude was a far better predictor of the extent to which the students maintained Spanish, rather than how quickly or well they learned English.

(7) Bilingualism is positively associated with greater cognitive flexibility and awareness of language.

The research on bilingualism's effects on mental development has a long history dating back to the birth of IQ tests and their use in the debate over immigration policy in the early part of this century. This complex history (recounted in Hakuta, 1986) is rooted in the myth that bilingualism can cause mental retardation and a variety of other undesirable outcomes. Unfortunately, many of the social policy issues concerning immigrants from eastern and southern Europe in those days are now being replayed in contemporary fashion over the current cohort of immigrants.

Through improvements in research methodology, as well as by expanding the definitions of what is meant by "bilingualism" and by "mental functioning," it became evident that the claims about the negative impact of bilingualism was alarmist and rooted primarily in social prejudice toward new immigrants.

As theory about human cognitive functioning moved from empiricist to cognitivist to contextualist accounts, the wondrous complexity of the phenomenon of bilingualism came to be better appreciated; and with fuller understanding of the complexity, much of the fear has evaporated. Among researchers, there is now overwhelming rejection of earlier indications suggesting negative intellectual consequences of bilingualism.

In fact, comparisons of bilingual and monolingual children, as well as comparisons of bilingual children of varying levels of development indicate that bilingualism can lead to superior performance on a variety of intellectual skills (for a review of this point, see Diaz, 1983). The superior skills can range from test performance on analysis of abstract visual patterns to measures of meta-linguistic awareness, which means the ability to think abstractly about language or appreciate linguistic form rather than content (for example, the ability to state the "The birds is eating" makes sense, but does not follow the conventions of the English language).

There is some controversy over the conditions under which these positive advantages of bilingualism appear, as well as over the specific mechanisms that cause these effects (see Diaz, 1985; Cummins, 1976; Hakuta, 1986); but researchers generally agree that the effects are real.

(8) When skills and knowledge are transferred from a primary to a second language, they do so globally rather than piece by piece.

One of the most fundamental assumptions underlying the efficiency of bilingual instruction is that skills and knowledge learned in the native language transfer to English. Thus, a child learning about velocity in Spanish should be able to transfer this knowledge to English without having to relearn the concepts; acquisition of the relevant vocabulary is enough. Indeed, having the content knowledge already available should greatly facilitate the learning of the appropriate vocabulary items because they provide what Krashen calls "comprehensible input."

In part because of the obviousness that such transfer will occur, little research exists to demonstrate it. Lambert and Tucker (1972), however, noted the phenomenon as they reviewed the results of their classic study of Canadian French Immersion programs (as native English-speaking children received instruction exclusively in French, reading and arithmetic skills simultaneously developed in English):

We refer here to the higher-order skills of reading and calculating, which were developed exclusively through the medium of French and yet seemed to be equally well and almost simulta-

neously developed in English. In fact, we wonder whether in these cases there actually was a transfer of any sort or whether some more abstract form of learning took place that was quite independent of the language of training. These developments took place so rapidly that we had little time to take notice of them. It seemed to us that all of a sudden the children could read in English and demonstrate their arithmetic achievement in that language.

The notion of transfer of skills is also supported by research with a cognitive science orientation. For example, Goldman, Reyes, and Varnhagen (1984) show that bilingual children employed similar comprehension strategies when listening to *Aesop's Fables* in two languages, providing indirect evidence that higher-order cognitive processes manifest themselves regardless of the specific language. Malakoff (1988) showed similarity in performance on analogical reasoning in French-English bilingual children in Switzerland.

Additionally, a host of otherwise bland research on adult bilingual memory for lists of words suggests that the particular language of presentation of specific words can be remembered under some conditions; but that in general, the content transcends language (see Hamers & Blanc, 1989 for a recent summary).

In essence, in the act of learning concepts and skills, people form representational schemas that are independent of the specific language used to learn the concept, even though the act of learning can involve active recruitment of the language to regulate thinking.

Since skills do transfer across languages, it is possible to ask whether transfer occurs on a specific, skill-by-skill basis, or more globally, where an entire structure of skills in a domain transfers as a whole. In one carefully controlled experimental study (Hakuta, 1990), we taught specific temporal and spatial relations concepts in Spanish to Puerto Rican first graders in a bilingual program. Then we assessed the extent to which the transfer to English was componential or holistic. We concluded that the transfer of the skills taught was best described as holistic and depended on the general proficiency level in the native language, rather than on the specific set of skills that were taught.

(9) The expertise in translation that all bilingual children possess demonstrates their considerable ability to transfer regardless of content.

Languages are permeable. Striking evidence that information flows from one language to another can be found in bilingual children's facility with the skills of translation and interpretation, an activity that many

bilingual children perform for family members, schoolmates, and others on a daily basis.

The psycholinguistic properties of this ability have been documented among elementary school children (Hakuta, 1990; Malakoff & Hakuta, 1991). In controlled experimental settings, the children proved to be very skilled at avoiding the pitfalls of literal translation (like failing to transpose word order or translating idiomatic expressions literally). Children showed no evidence of confusion between the two languages, even though in normal conversations with their bilingual friends, they actively engaged in code-switching.

Furthermore, evidence suggested that translation ability is related to a meta-linguistic ability that is unrelated to proficiency in the specific languages. This research has led to a number of attempts to use translation as a way to enhance meta-linguistic ability and to amplify bilingual skills (Walqui, 1989).

To summarize; the major conclusions from the preceding thirty years of research are highly supportive of the program objectives of typical bilingual education programs that attempt to develop English proficiency in students within three to five years. Furthermore, the native language is not in competition with English-language development, nor does learning two languages compromise cognitive development.

THE NEED TO PRESERVE THE LANGUAGE RESOURCES OF THE NATION

The person-on-the-street who suspects that immigrants in bilingual education programs are not learning English is worrying about a pseudoproblem. Meanwhile, however, Americans are ignoring a genuine problem, namely, the erosion and disappearance of native languages.

Figure 1 (Hakuta & D'Andrea, 1992) presents a specific example of what is happening to the languages that immigrant students bring to this country. The data on English and Spanish proficiency for several groups of high school students of Mexican descent were collected in Watsonville, California.

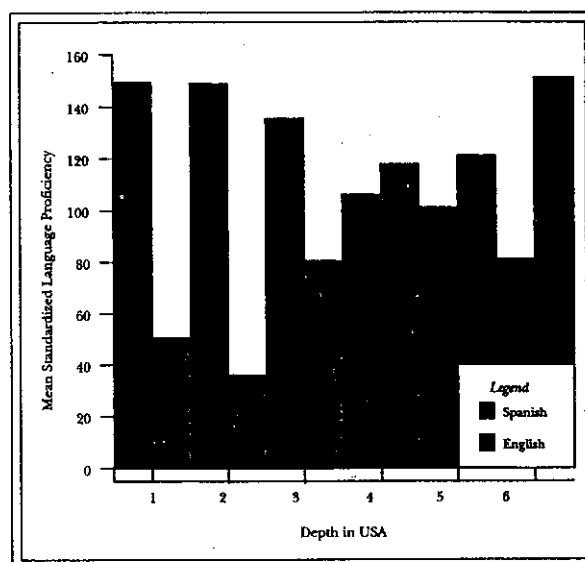
Watsonville is a community that for at least two major reasons would support the maintenance of Spanish: The Spanish language is indigenous to California, and a slim majority (51 percent) of the people in Watsonville are of Mexican background.

The Spanish and English proficiency indicators shown in Figure 1 are composites of proficiency measurements of vocabulary, grammatical rules, and a

cloze test measuring overall reading comprehension (a cloze test requires the test taker to supply words missing from a text).

Figure 1 makes two points. First, there should be no concern that the population represented is not learning English. Even Depth 2 students, who had arrived in the United States when they were ages 6 to 10, are doing well with English. The largest, and only statistically significant gap for contiguous groups, is between Depth 2 and Depth 1 students, who had just arrived when they were older than ten years of age.

Figure 1
Mean Standardized Spanish- and English-Language Proficiency Measures



Rationale:

- Depth 1: Born in Mexico, arrived in the USA when over 10 years old.
- Depth 2: Born in Mexico, arrived in the USA between the ages of 6 and 10.
- Depth 3: Born in Mexico, arrived in the USA when 5 years old or younger.
- Depth 4: Born in the USA, both parents born in Mexico.
- Depth 5: Born in the USA, at least one parent born in Mexico.
- Depth 6: Born in the USA, at least one parent and associated grandparents born in the USA.

The second point made in Figure 1 is that Spanish is maintained through Depth 4, whereupon the bubble bursts. By the second generation, Spanish proficiency is lost.

These data have been demonstrated more indirectly for years. For instance, in a book entitled *Language Loyalty in the United States*, Fishman, Nahirny, Hofman, and Hayden (1966) presented various archival and census data to show that native languages are being lost at a remarkable rate by most immigrant groups. Much of the apparent maintenance of native languages is attributed to new immigration. Fishman and his colleagues characterized American attitudes toward native languages as one of benign neglect, although at times there have been outright instances of xenophobically motivated aggression against some languages, such as German.

Another example: Using information collected by the U.S. Census Bureau, Veltman (1988) conducted a detailed analysis of data on Spanish. He concluded that a two-generation model of loss fit the data better than a three-generation loss and that certainly there is no evidence of longstanding language maintenance, even among the various Spanish-speaking groups in the country. Like Fishman, Veltman wrote that the apparent maintenance of Spanish is due not to the persistence of Spanish, but to fresh cohorts of Spanish-speaking immigrants. Once this immigration stops, even a robust language like Spanish will soon disappear in the United States.

Statistics from 1987 on limited English proficient (LEP) students in California show that almost three-fourths of them spoke Spanish. The languages showing substantial numbers and increases included:

- Spanish, spoken by 449,308 students, or 73 percent of the total LEP student population
- Vietnamese, spoken by 30,906 students, or 5 percent of the total LEP student population
- Cantonese, spoken by 19,781 students, or 3 percent of the total LEP student population
- Filipino, spoken by 14,381 students, or 2 percent of the total LEP student population
- Hmong, spoken by 10,780 students, or 2 percent of the total LEP student population
- Korean, spoken by 10,738 students, or 2 percent of the total LEP student population
- Lao, spoken by 10,283 students, or 2 percent of the total LEP student population
- Mandarin, spoken by 7,334 students, or 1 percent of the total LEP student population
- Japanese, spoken by 4,125 students, or less than 1 percent of the total LEP student population
- Farsi, spoken by 3,881 students, or less than 1 percent of the total LEP student population

- Armenian, spoken by 2,660 students, or less than 1 percent of the total LEP student population
- Portuguese, spoken by 2,641 students, or less than 1 percent of the total LEP student population
- Arabic, spoken by 2,139 students, or less than 1 percent of the total LEP student population
- Other languages, spoken by 28,602, or nearly 5 percent of the total LEP student population.

These LEP students are most frequently considered a problem, but if we value the linguistic resources of the nation, they should be considered as valuable resources who provide opportunities to improve the nation's linguistic repertoire. The problem is not whether they will learn English, but whether they will concomitantly develop their native languages sufficiently to be able to maintain it and use it in ways that strengthen the country's linguistic prowess.

CONCLUSION

Bilingual education programs may offer good contexts for immigrant students to learn English. Paradoxically, however, they do not promote bilingualism, chiefly because society uses a monolingual criterion—changes in English proficiency—to evaluate the effectiveness of the bilingual programs. Bilingual education programs rarely include maintenance of the native language as a goal (Development Associates, 1984).

Indeed, this one-sided, monolingual criterion is often applied in ways that are inconsistent with the reality of how long it takes children to learn a second language, and the bilingual programs are often judged ineffective if they do not produce virtually instant proficiency in English.

Much of the pressure for bilingual educators to portray themselves as promoters of English is due to political pressures, of course; groups such as U.S. English teachers keep a careful watch over bilingual education activities. The English-only movement in many states around the country often captures over two-thirds of voters, too. The evident popularity of this position makes it difficult to generate much enthusiasm for a vision of a linguistically diverse nation (Baron, 1990).

However, while immigrants are learning English and forgetting their native languages, there is increasing need for Americans to know non-English languages as *second* rather than *foreign* languages.

A shift clearly needs to take place in our priorities. We have spent much effort worrying and complaining about a problem that does not exist (immigrants not

learning English) and have left the maintenance of other languages entirely to chance.

In recent years, some important innovations have received attention among bilingual and foreign-language educators (see, for example, the research reported in the edited volumes by Padilla, Fairchild, & Valadez, 1990 a and b). Such innovations, however, have been constructed by language educators working in considerable isolation from the rest of the education enterprise. Until their goals of creating a language-rich nation are tied into the overall architecture of goals for education, they will remain separate and less influential than meritorious.

State school chiefs, working with their boards and staffs, can play an important part in broadening and realigning our vision for bilingual education and in weaving this vision into the larger tapestry of school reform.

REFERENCES

- Cummins, J. (1976). The influence of bilingualism on cognitive growth: A synthesis of research findings and explanatory hypotheses. *Working Papers on Bilingualism*, 9, 1-43.
- Cummins, J. (1984). Linguistic interdependence among Japanese and Vietnamese immigrant children. In C. Rivera (Ed.), *Communicative competence approaches to language proficiency assessment: Research and applications*. Avon, England: Multilingual Matters.
- Development Associates, Inc. (1984). *LEP Students: Characteristics and school services*. The Descriptive Phase Report of the National Longitudinal Evaluation of the Effectiveness of Services for Language-Minority Limited-English-Proficient Students. Washington, DC: U.S. Department of Education.
- Diaz, R. M. (1983). The impact of bilingualism on cognitive development. In E. W. Gordon (Ed.), *Review of research in education, Vol. 1*. Washington, DC: American Educational Research Association.
- Diaz, R. M. (1985). Bilingual cognitive development: Addressing three gaps in current research. *Child Development*, 1376-1388.
- Diaz, R. M., & Klinger, C. (in press). Toward an explanatory model on the interaction between bilingualism and cognitive development. In E. Bialystok (Ed.), *Language processing and language awareness by bilingual children*. Oxford, England: Oxford University Press.
- Epstein, N. (1977). *Language, ethnicity, and the schools: Policy alternatives for bilingual-bicultural education*. Washington, DC: George Washington University, Institute for Educational Leadership.
- Fishman, J., Nahirny, V., Hofman, J., & Hayden, R. (1966). *Language loyalty in the United States*. The Hague, Netherlands: Mouton and Company.
- Garcia, J., McGowan, B., & Green, K. (1972). Biological constraints in conditioning. In M. E. P. Seligman & J. Hager (Eds.), *Biological boundaries of learning*. New York: Appleton-Century-Crofts.
- Gardner, R. C. (1985). *Social psychology and second language learning: The role of attitudes and motivation*. London, England: Arnold.
- Goldman, S., Reyes, M., & Varnhagen, C. (1984). Understanding fables in first and second languages. *National Association of State Board of Education (NASBE) Journal*, 3, 35-66.
- Hakuta, K. (1986). *Mirror of language: The debate on bilingualism*. New York: Basic Books.
- Hakuta, K. (1987). Degree of bilingualism and cognitive ability in mainland Puerto Rican children. *Child Development*, 1372-1388.
- Hakuta, K. (1990). Language and cognition in bilingual children. In A. Padilla, H. Fairchild, & C. Valadez (Eds.), *Bilingual education: Issues and strategies*. Newbury Park, CA: Sage Publications.
- Hakuta, K., & Cancino, H. (1977). Trends in second language acquisition research. *Harvard Educational Review*, 294-316.
- Hakuta, K., & D'Andrea, D. (1992). Some properties of bilingual maintenance and loss in Mexican background high school students. *Applied Linguistics*, 13, 72-99.
- Hamers, J., & Blanc, M. (1989). *Bilinguality and bilingualism*. Cambridge, England: Cambridge University Press.
- Lambert, W. E., & Tucker, G. R. (1972). *Bilingual education of children: The St. Lambert experiment*. Rowley, MA: Newbury House Publishers.
- Malakoff, M. (1988). The effect of language of instruction on reasoning in bilingual children. *Applied Psycholinguistics*, 17-38.
- Malakoff, M., & Hakuta, K. (1991). Translation skill and metalinguistic awareness in bilingual children. In E. Bialystok (Ed.), *Language processing and language awareness by bilingual children*. Oxford, England: Oxford University Press.

- McLaughlin, B. (1984). *Preschool children. Vol. 1. Second-language acquisition in childhood*. Hillsdale, NJ: Lawrence Erlbaum.
- McLaughlin, B. (1985). *School-age children. Vol. 2. Second-language acquisition in childhood*. Hillsdale, NJ: Lawrence Erlbaum.
- Organisation for Economic Cooperation and Development. (1989). *One school, many cultures*. Paris, France: Centre for Educational Research and Innovation.
- Hornberger, N. (1989) Continua of biliteracy. *Review of Educational Research*, 271-296.
- Padilla, A., Fairchild, H., & Valadez, C. (Eds.). (1990a). *Bilingual education: Issues and strategies*. Newbury Park, CA: Sage Publications.
- Padilla, A., Fairchild, H., & Valadez, C. (Eds.). (1990a). *Foreign education: Issues and strategies*. Newbury Park, CA: Sage Publications.
- Purves, A. C. (1988). *Writing across languages and cultures: Issues in contrastive rhetoric*. Newbury Park, CA: Sage Publications.
- Simon, P. (1980). *The tongue-tied American: Confronting the foreign language crisis*. New York: Continuum.
- Snow, C. (1987). Beyond conversation: Second language learners' acquisition of description and explanation. In J. Lantolf & A. Labarca (Eds.), *Research in second language learning: Focus on the classroom*. Norwood, NJ: Ablex.
- Snow, C., & Hoefnagel-Hohle, M. (1977). Age differences in the pronunciation of foreign sounds. *Language and Speech*, 357-365.
- Sternberg, R. K. (1985). *Beyond IQ: A triarchic theory of human intelligence*. Cambridge, England: Cambridge University Press.
- Veltman, C. (1983). *Language shift in the United States*. Berlin, Germany: Mouton Publishers.
- Walqui, A. (1989). *A translation and interpretation curriculum for bilingual high school students*. Santa Cruz, CA: The Bilingual Research Group, University of California.
- Wong-Fillmore, L., & McLaughlin, B. (1986). *Oral language learning in bilingual classrooms: The role of cultural factors in language acquisition*. Unpublished manuscript. Berkeley, CA: University of California, Berkeley.