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Easy As Pie? Children Learning Languages

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Abstract

Many people seem certain that children learn additional languages rapidly and with ease. This "fact" is widely believed, but research in a number of language learning contexts suggests that it is necessary to refine – if not to refute – this assumption. In this paper, some of the experience and research that have been used in support of the conclusion that "younger is better" will be reviewed. The relevance of this conclusion to different learning and teaching environments will be discussed, and the conventional wisdom that for children, language learning is *easy as pie* will be challenged. The emphasis will be on how different learning contexts and conditions lead to different outcomes as well as how research designed to answer one question is often cited to answer another – one that it cannot in fact answer.

There are many myths about language acquisition. Among the most persistent is the myth that language learning is *easy* for children and that it is accomplished in a remarkably short time. We often hear assertions such as "younger is better" and "kids soak up languages like sponges." Because they think that children learn languages easily, many people take it for granted that it is best to *plunge* them into the new language. The aquatic metaphors of *immersion* and *submersion* are widely used, reflecting the

belief that children will learn best if they are simply surrounded by the language. In schools where children from minority language groups have to learn a new language not only to communicate with others but also to learn the academic material taught in the classroom, another aquatic metaphor—*sink or swim*—may be the most appropriate.

In reality, language acquisition that begins in early childhood and continues into adolescence is usually remarkable for its *ultimate success* rather than for the speed or ease with which it is accomplished. Experience and research show that language learning —for all but a small group of exceptional learners —takes a long time. We also know, again from both experience and research, that most successful second language learners have benefited from at least some periods of instruction or study during which they directed their attention to the language itself, rather than merely *swimming* in it.

It is important to have good information about how quickly, how easily, and how well children can learn languages under different conditions. Most educational systems must make the best use of limited resources, not the least of which is time. Thus, they need to know whether introducing second language learning in the earliest school years is more effective than introducing it later. The choice depends at least partly on the goals and expectations of the education system and the community in which the language learning program is situated. For example, is it considered important – essential – for the children's first language to be maintained and developed as they learn the second language? Or is the children's L1 considered to be a *personal* or *family* matter, not the responsibility of the school? Is the goal of instruction a complete mastery of the second language, such that the learner is eventually perceived as indistinguishable from someone who knows only that language and learned it from birth? Is the learner expected to use the second language as the primary language for all aspects of public life – education, career, shopping, entertainment, and government services? Or does the second language have a limited role in the learner's life, serving mainly as a way of giving access to literature or cultural events? These questions have to be considered when we compare reports of success of language learning and teaching in different settings. That is, what is considered highly successful in one setting will be considered grossly inadequate in another. It is partly because of the different definitions of success that we find so many conflicting claims and conclusions in research studies, policy documents, newspaper editorials, and personal biographies.

In the United States, children from minority language groups who enter school with little or no knowledge of English are less likely than their peers to finish high school – even if they start very young (at pre-kindergarten or kindergarten) and have their schooling entirely in English. In contrast, children who begin their second language schooling later, with a background of L1 education and literacy, are more likely to stay in school and succeed (Collier, 1989; Cummins, 1991; Genesee, et al., 2006). Not surprisingly, those who enter school later, but without literacy or prior schooling in their first language face the greatest challenges because they have so much to learn before they can participate in academic work appropriate for their age group (Hamayan, 1994).

Why do so many people believe that "younger is better" and that time spent in developing L1 abilities is time lost to the acquisition of L2? Some people no doubt base this on their own experience of difficulty in learning a foreign language as adult travelers; others may be reacting to their impressions of immigrants who speak with a "foreign accent". Such beliefs may be dismissed as based on intuition or anecdote. However, the conviction that older learners struggle while young learners find it "easy as pie" to learn new languages may also come from hearing or reading about research on language acquisition and language learning at school. In the following sections, the kinds of research that have been used in support of the notion that L2 acquisition is quick and easy for young learners will be reviewed.

CRITICAL PERIOD HYPOTHESIS

Although they may not know it, many people make assumptions about successful second language learning that are based on the Critical Period Hypothesis (CPH). The CPH has been explored in hundreds of articles, books, and research reports since the early assertions by Eric Lenneberg (1967) and Wilder Penfield (Penfield & Roberts, 1959) that the brain is receptive to language learning for only a short time and that it is essential to take advantage of this "plasticity" if the best outcomes are to be achieved for second language learning. There is indeed much evidence that those who begin to learn a second language later in life are almost always distinguishable from those who have never spoken any other language. Most typically, older learners tend to have some elements of a "foreign accent". Some studies have also identified other subtle ways in which L2 speakers who began learning the language in adolescence or adulthood differ from monolingual speakers of that language.

One oft-cited study can be used to illustrate the findings that are typical of dozens of studies using a variety of methodologies, populations, and analytic approaches. Patkowski (1980) recorded the speech of L2 speakers of English who had lived for many years in the U.S. In addition, he recorded the speech of monolingual English speakers with similar levels of education, living in the same region of the U.S. as the L2 speakers. He wanted to look beyond pronunciation as an indicator of a speaker's ability, so instead of having raters listen to the recordings, he transcribed the conversations – removing any references that might identify the speakers as L1 or L2 – and had native speaker raters read the texts. The raters were asked to place each speaker on a scale from 1 (very little knowledge of English) to 5 (an educated native speaker). The graphs in Figure 1 represent the findings.

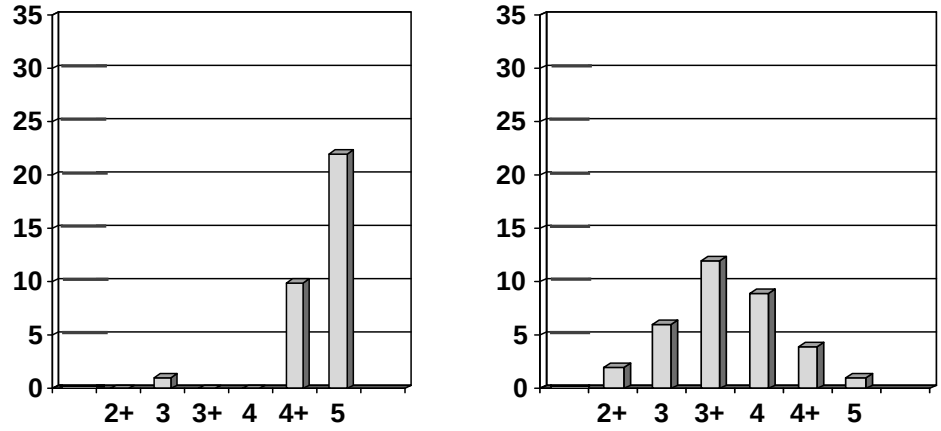

Figure 1. Number of English L2 speakers in Patkowski (1980) rated at each proficiency level (N-33 for each group).

The raters in Patkowski's study judged that nearly all the monolingual native speakers (not shown in the figure) as well as the pre-puberty learners (those who began learning English before the age of 15) used English in a way that was consistent with what is expected from an "educated native speaker". That is, all native speakers and all but one of the pre-puberty learners scored either 4+ or 5 on the rating scale. However, the distribution was quite different for speakers who began learning English after the age of 15. Although a few were given the highest ratings, most were rated nearer a mid-point. It is important to emphasize that they were comprehensible and effective speakers, but

there were subtle elements of their speech that allowed the raters to identify them as being L2 speakers of English.

The findings of Patkowski's study, together with those of many similar studies, suggest that, *given adequate opportunity and motivation*, those who begin learning a language before adolescence are most likely to achieve native-like ability in that language. This research also suggests that, for older learners, second language outcomes are more variable. Some will not do very well; most will fall in the middle of the range of success; and some – exceptional individuals perhaps – will reach levels of skill that make them indistinguishable in all respects from native speakers—even if their pronunciation could not be taken into account.

Other studies have produced similar results, using different methods and different cut-off points for comparing groups at different ages (see e.g., Johnson & Newport, 1989). Some researchers have raised questions about these findings – either in terms of the types of measures used to assess language ability, the way speakers were selected for participation in the study (e.g., Birdsong, 1992; White & Genesee, 1996), or even the possible effects of learners' age at the time of assessment (Stevens, 2006). Nevertheless, the overall weight of evidence points to the same conclusion: most adult and adolescent second language learners do not reach a stage at which they are indistinguishable from monolingual speakers of that language (Hyltenstam & Abrahamsson, 2003).

It is essential to keep in mind, however, that CPH studies have focused on this very specific aspect of the "age of acquisition" question: the likelihood that a speaker can ultimately become indistinguishable from someone who has never spoken any other language. This is a very limited definition of success! Clearly, the presence of an "accent" or of subtle grammatical differences does not prevent a speaker from using a language effectively and even brilliantly (see Marinova-Todd, Marshall, & Snow, 2000). Universities, businesses, and even government offices are filled with successful individuals whose English is slightly or even substantially different from that of monolingual speakers. What is more, and what is often overlooked, is that these individuals *also* have skills in one or more other languages – a fact that enriches their lives and also makes them valuable resources for their communities. Vivian Cook (2007) has argued that, far from being "limited" in some sense, these multilingual individuals should be viewed as "multicompetent". As such, they are inevitably different from monolingual speakers. But that difference is an *advantage* rather than a shortcoming.

What can we conclude from studies of the Critical Period Hypothesis?

- "Pass-for-native" ability is most likely to be reached by those who start learning the language when they are young and who continue to use the language over many years.
- Changes in the way language is acquired occur gradually rather than abruptly.
- Older learners can achieve very high levels of second language ability.
- Some L2 speakers who start learning early do not achieve high levels of L2 ability. An early start is not a guarantee of success.

What can we *not* conclude from studies of the Critical Period Hypothesis?

- Anything about the *rate* of learning: CPH research is about ultimate attainment after many years of language learning, not about the speed with which progress is made.
- Anything about the relationship between age and L2 learning *at school*: CPH research looks at people with many years of exposure in a variety of contexts that may *include* but are not limited to instruction.
- Anything about the role or status of L1: CPH research does not examine the maintenance or development of a learner's first language. The research focuses on the individual's ability to use the L2 and rarely assesses any changes in or loss of L1.

In summary, CPH research provides information about the levels of L2 ability that learners reach after many years of language use. It does not address the question of how *easy* it is for young learners to acquire languages or how quickly they do so. We turn now to some of the other research that may provide insights into this question. This research includes both "natural" and instructed language learning.

BILINGUALISM IN EARLY CHILDHOOD

It is not uncommon for children to acquire more than one language during their preschool years, often in homes where one parent speaks one language to the child while the other parent uses another. There is a vast literature on this type of early simultaneous bilingualism (e.g., Leopold, 1939-1949; Meisel, 1994). The research shows very clearly that children with adequate exposure to more than one language can develop each language at a rate and in a manner that is in most respects comparable to

the development of monolingual children learning only one of these languages. When children successfully acquire two languages in early childhood, they must divide their learning time between the languages. Even so, sharing the time among two or more languages still potentially provides many thousands of hours for each.

For many years, child development literature included warnings that early bilingualism could lead to cognitive and/or linguistic confusion and that children were at risk for school failure and even behavioral disorders if they were "burdened" with more than one language (e.g., Smith, 1931). Subsequent research has not supported the notion that early bilingual development is inherently problematic for young children. Instead, the evidence has mounted that early bilingualism can provide children with benefits beyond the obvious one of knowing more than one language. Among the advantages that bilingual children may develop earlier and better are certain types of cognitive flexibility and metalinguistic awareness (Bialystok, 2001; Cummins, 2000; King & Mackey, 2007).

Research on very early bilingualism has also shown that, although children can learn languages when they are very young, they can also forget them (see, e.g., Burling, 1959). Whether (re)learning these languages in adulthood is easier than it would be for an adult learner without this early experience is not well researched. However, there is no doubt that, if the language a child learns early in life is not maintained and developed as the child grows older, the time may come when the individual has no ability to use the language and, indeed, no memory of ever having known it (Pallier et. al., 2003). In some cases, for example, when a young child is adopted by a family that does not know the child's original language, the ability to replace one language by another may be seen as a sign of a child's resilience. In other cases, the loss of a first language in early childhood can have problematic results. Some young children acquire a second language before they reach school because their family language is not the language spoken in the wider community (e.g., by babysitters, daycare providers, television, and playmates). When children spend many hours away from their parents, they may experience what has been called *subtractive bilingualism* (Lambert, 1974). In this case, when their L2 comes to *replace* their L1, they may lose the ability to communicate with members of their own families (Wong Fillmore, 1991).

What can we learn from research on early childhood bilingualism?

- Children are capable of acquiring two or more languages in early childhood.
- Languages don't compete for "mental space." and bilingualism doesn't "confuse" children.
- Given adequate input and interaction opportunities, the developmental path and the outcomes of multiple languages are similar to those observed in the acquisition of a single language.
- Some cognitive advantages are associated with the development of proficiency in more than one language.
- Early learning is no guarantee of continued development or lifelong retention of a language. Languages can be maintained or forgotten, depending on circumstances.

What can we *not* learn from studies of early childhood bilingualism?

- Anything about *instructed* L2 learning *at school*.

The fact that young children can successfully acquire two or more languages in the pre-school years is not a basis for concluding that young children will be more successful than older children or adolescents at learning language in a school setting. The motivational, affective, and situational characteristics of early childhood bilingualism in the home and family are very different from those that are present at school (Muñoz, 2008a). In order to explore the question of whether "younger is better" for *school* learning, it is essential to look at research that is carried out *in schools*.

SCHOOL-BASED RESEARCH ON SECOND LANGUAGE ACQUISITION

When children arrive at school, they have already spent many thousands of hours (3000 to 5000 per year) learning the language (or languages) of their environment. How many hours of exposure to the second language are available in different kinds of school programs? Table 1 provides an overview of the types of programs in which children learn a second language at school and the number of hours of L2 exposure students typically get in each.

Table 1. Exposure to L2 in different types of school programs

Program type	Hours of L2 exposure per year	Description of instruction
"Foreign language" Students are taught a language that is not typically spoken in their community.	50-200	Variety of pedagogical approaches, from communicative to "grammar-translation"
Immersion Majority language children are taught primarily in their L2.	500-1000	Content-based learning in both Ll and L2; subject matter instruction in L2 is adapted for L2 learners
Mainstream/monolingual/ submersion Minority language children are placed in regular classrooms with majority language students and are taught only in L2	1200	Subject matter instruction is not adapted to needs of L2 learners; some separate "language" classes in L2 may be offered
Bilingual education Minority group children are taught through both L1 and L2 in classes that are separate from those where majority language students are taught	500-1000	Subject matter instruction is offered in both L1 and L2; division of hours is variable, usually involving a *transition* from L1 to L2 over time
Dual language instruction Minority and majority language children are taught in both minority and majority languages	500-1000	Subject matter instruction is offered in L1 and L2; division of hours is variable, but instruction in both languages is continued for several years

Table 1 shows that the number of hours spent in contact with L2 in school programs – even mainstream programs that exclude the use of L1 – is dramatically smaller than the thousands of hours spent on L1 acquisition by preschool children. One might conclude that reaching proficiency in L2 is a hopeless quest, but many learners do become proficient in their second language. Another possible conclusion is that minority language children should spend every minute of school time on L2 acquisition, eliminating time spent on continuing L1 development, but research has shown that maintaining first language abilities and enhancing them through the development of literacy and academic language skills actually

leads to *better* outcomes in L2 education (see e.g., Lindholm-Leary & Borsato, 2006). This suggests that older L2 learners can build on their L1 proficiency, including literacy and metalinguistic awareness, to compensate for the limited time. They are more efficient learners, especially in a school setting (see e.g., Collier, 1987; Muñoz, 2008a). Nevertheless, there can be little doubt that attaining high levels of L2 proficiency is likely to require more time than most school programs can provide and that even under the best conditions, it must be anticipated that students will need several years to reach age-appropriate levels of L2 abilities (Collier, 1989; Cummins, 1991).

What does research show about the ease of learning languages by learners of different ages in different types of programs?

FOREIGN LANGUAGE LEARNING

The Critical Period Hypothesis research showed that there can be a long term advantage associated with an early start, but the research suggests that this may be relevant primarily for out-of-school learning environments, where the L2 is an essential element of a child's interaction with friends, family members, or the community at large (see Muñoz, 2008a). There is little evidence that there is a long-term advantage to an early start in the foreign language classroom setting. This conclusion has been reached time and time again (see e.g., Burstall, 1975, for an early large scale study of foreign language learning in Britain, and Muñoz, 2008b for a review of research), and yet the demand for starting L2 instruction as early as possible seems to persist.

Parents have often sought opportunities for their children to begin learning a foreign language from an early age. In recent years, the importance of English as a tool for economic opportunity has led schools throughout the world to look for ways of improving instruction in that language. In many cases, education authorities have lowered the age at which foreign language (usually English) instruction begins. This is often done in response to pressure from parents, who believe that their children will succeed in learning the language only if they begin early. School-based research does not support this belief that an early start will produce significantly different outcomes.

Most foreign language programs offer 700-2000 hours of L2 instruction, spread over 6-12 years of schooling. That is, at a rate of 50-200 hours per year, students are taught a language that they seldom encounter outside

the walls of their language classroom. The quality of instruction varies greatly, and when the age of instruction is lowered, it is often difficult to find teachers with appropriate knowledge and skill to teach languages to young learners. In some schools, highly proficient and well-trained teachers provide instruction that reflects the best language pedagogy. In other schools, teachers are recruited to teach the language simply because they are native speakers or because they have been trained to teach the language even though they do not have high levels of proficiency in it. In many parts of the world, instructional methods emphasize reading and writing rather than listening and speaking – because of large class size, teachers' limited abilities in the second language, or constraints imposed by the nature of examinations. Arguably, such an emphasis on the written language may have practical reasons as well. Students may have more need for understanding written material, whether for personal exploration of the Internet or for understanding textbooks that are available only in the foreign language.

In many countries, the age of beginning foreign language (usually English) instruction has recently been lowered from 11-13 years to 9 years. In some countries, foreign languages are introduced even earlier – at age 6 or even in kindergarten. Even though children begin instruction earlier, however, the amount of instruction in terms of total time has not changed significantly. Total time is still measured in hundreds, not thousands, of hours. Nunan (2003) has observed the phenomenon of an earlier start in Hong Kong, Japan, Malaysia, China, Vietnam, Korea and Taiwan, where the lowering of the age of beginning English instruction has been widely implemented. He commented that in most of these places, the "luckier students" will actually get "only an average of 50-60 hours of English language instruction a year" (p. 608). In light of the number of hours devoted to L2 by learners who achieve high levels of success, this amount of instruction – even if provided to young students over a period of several years – is not likely to have a substantial impact on long-term L2 abilities.

In Quebec, the age at which English instruction is offered in the French language schools has been lowered from about 9 (grade 3 or 4) to about 6 (grade 1). However, as some Quebec English teachers characterized it, students got 3 more years, but not one more minute. That is, the age of starting was lowered, but the total number of hours of instruction remained at about 700 hours – now spread over 11 rather than 8 years. This choice was made in spite of the fact that a considerable amount of research had shown the effectiveness of a period of intensive English

instruction (about 400 hours in a single school year) when students were in grade 5 or 6 (Collins, Halter, Lightbown, & Spada, 1999; Lightbown & Spada, 1991, 1994).

Significant research projects investigating the effect of an earlier start have been carried out in Spain where the decision to lower the age for the introduction of English as a foreign language allowed researchers to compare the outcomes for the earlier and later starters after the same number of hours of instruction (see Muñoz, 2008a, for review). In these studies carried out among students who were already bilingual (in Catalan and Spanish or in Basque and Spanish), it was possible to compare children who had started learning English at different ages (4, 8, 12 years) but who had had the same number of hours of instruction (100 hours, 200 hours, etc.).

In Catalonia, researchers found that older children made more rapid progress in the first few hundred hours of learning English as a foreign language (Muñoz, 2006). Garcia Mayo and García Lecumberri (2003), Cenoz (2003), and others have found similar results in the Basque country. Older children progressed more quickly in their learning of the L2, even though the younger learners showed evidence of a more positive attitude toward learning the new language. In both sets of studies, researchers found that, when tested after the same number of hours of instruction, students who started later performed better than those who started earlier. The younger learners did eventually begin to catch up, when they reached the age at which they too could take advantage of their literacy skills as well cognitive and metacognitive development to become more effective school learners.

What can we learn from international research on foreign language learning?

- After the same number of hours of instruction, older students are more advanced than early starters. Early starters begin to catch up when they reach the age at which the later starters began.
- Intensity of instruction matters. In a school setting, long term success is enhanced more by intensive instruction for older learners than by starting "drip-feed" courses earlier.
- Finding teachers for young students is often difficult, especially when the starting age is suddenly lowered.

What can we *not* conclude from research on foreign language learning?

- Anything about the achievement of native-like ability. The conditions of learning and the total number of hours available for learning in foreign language classes limits the potential for such levels of proficiency for students who have no additional contact with the language.
- Anything about how *subtractive* bilingualism affects long-term success in L2 learning. Students in foreign language classes continue to receive their subject matter instruction through their L1. A foreign language is seen as an enhancement, not a replacement for L1.

The overall limitations of foreign language classes in getting learners to high levels of proficiency have led education authorities to implement innovative approaches that give students more time to learn. Among these innovations, "immersion" education has been particularly widespread.

IMMERSION EDUCATION

The success of Canadian programs for French immersion is often cited as evidence to support the belief that early L2 acquisition is quick and easy. Since the 1960s tens of thousands of English-speaking Canadian children have received a significant part of their schooling in French. The original programs placed children in French immersion classrooms from kindergarten (Lambert & Tucker, 1972). Other immersion programs start when children are about nine years old; others start at 12 or 13 years. This educational model – including its many variations – has been extensively researched and its success as an approach to language learning has been widely documented (Genesee, 1987). In addition, the model of immersion education that was developed in Canada in the 1960s has been exported to or developed independently in many other countries (Johnson & Swain, 1997; Knell et al., 2007). Although there are many variations in the implementation of immersion programs, all share the following essential characteristics.

- The classes are most often made up exclusively or primarily of students whose L1 is the majority community language.[1]
- Teachers are usually bilinguals. They understand and speak the students' L1 as well as their L2.
- Students have 500-1000 hours of subject matter instruction through the L2 in each school year over a period of several years. The materials are usually adapted to the linguistic level of L2 learners.
- L1 language arts and some other subjects are, at some point in the students' education, taught through their L1.
- The majority language is *always* supported by the school, and over time, students are expected to maintain and develop skills in their L1 as well as their L2.
- The absence of L2 peers limits students' exposure to age-appropriate language registers.

Some characteristics of the immersion model are present in the European Schools, where students learn two or more languages in addition to their L1 (Baetens-Beardsmore, 1993). They are also present in Content and Language Integrated Learning (CLIL) courses (Järvinen, 2005), where students' language learning opportunities are enriched by the addition of subject matter instruction through the foreign language – adding not just more time but also expanding the kinds of things that are *talked about* in the foreign language class (Snow & Brinton, 1997). Subject matter instruction allows for a greater variety of vocabulary and language registers (Dalton-Puffer, 2007).

Immersion education has shown that students can acquire good L2 skills while maintaining their L1. Their overall academic achievement is not negatively affected by having received a substantial part of their academic instruction through the second language. Another finding from research on immersion is noteworthy, however. Children who begin immersion at an early age *do not necessarily* end up with better L2 skills at the end of secondary school than those who began later (see Genesee, 1987, for a review). One of the important reasons for this is that learners need opportunities to *continue* developing L2 skills as they reach adolescence. In some programs, students eventually phase out of L2

[1] In Canada, many students from immigrant backgrounds arrive at school with knowledge of languages other than English – in addition to or instead of English. There was a time when it was considered inappropriate for such students to be placed in immersion classes. In recent years, however, the attitude has changed, and more and more such students are participating – successfully – in immersion education (Swain & Lapkin, 2005).

immersion, finishing their high school education with courses in their L1 only. When compared to students who continue both subject matter instruction and French language classes in high school, the early learners are not more proficient (Turnbull, Lapkin, Hart, & Swain, 1998).
What can we learn from research on immersion and dual language instruction?

- Children from the majority language group do not lose their L1 abilities when they have a substantial part of their education through a second language.
- Immersion students from majority language groups do not fall behind in academic abilities (or if they do experience delays in the first few years of schooling, they usually catch up).
- Immersion students acquire high levels of ability in L2 *comprehension*, but they do *not* acquire native-like *production* skills if their only exposure to L2 is in the immersion classroom setting.
- Immersion education has proven effective for children who start the program when they are very young (kindergarten) and for those who start when they are older (ages 9 to 12). Continued use of the language into adolescence is an essential determinant of their long-term proficiency.

What can we *not* learn from research on immersion?

- Anything about the effects of *subtractive* bilingualism: Students in immersion programs do not lose their L1 as they acquire the L2.
- Anything about the effects of immersion-type education for students from minority language groups in *transitional* bilingual education programs, where the transition is intended to take students *from* L1 *to* L2, with no or limited development of L1 abilities.
- Anything about the effects of students in "submersion" settings, where instructional materials are not adapted to the needs and abilities of L2 learners.

All of the immersion-type models emphasize the maintenance and continued development of skill in the students' first language. Moreover, immersion classes typically exist in communities where the students' L1 is a language with high prestige and obvious utility in their personal lives as well as for their future education and work opportunities. For these

reasons, one must be very careful in drawing inferences about the education of minority group children based on this model.

A special kind of immersion – the *dual language* approach – is being offered in more and more schools in the U.S., with positive results. In this model, students from both majority and minority language groups are placed together in classrooms where they learn each other's language. Literacy training and subject matter instruction are provided in both languages to all students. Dual language education (also called dual immersion, dual bilingual education, two-way immersion) has proven effective for both minority and majority language students (Collier & Thomas, 2004; Lindholm-Leary, 2001). The programs typically begin when students enter school in kindergarten or first grade and continue for several years. In some programs, initial literacy is taught in the students' L1; in others, literacy instruction for both languages is provided from the beginning. In either case, both languages are used extensively for subject matter instruction. One special advantage of the dual language approach is the presence of peers who serve as models for age-appropriate language registers in the L2, something that is almost always missing from *foreign* language classes, even those that offer extended time through immersion or content-based instruction (Tarone & Swain, 1995).

Dual language education is an important innovation in an area where there has been much frustration and disappointment: the education of minority language students in the United States.

THE EDUCATION OF MINORITY LANGUAGE STUDENTS IN THE UNITED STATES

In most educational systems, the goal is to teach students additional languages rather than to "transition" them from L1 to L2. For this reason, students continue to learn through their L1 as they learn L2. Even in some post-colonial settings, where a language of the former colonial power (most often English or French) is the primary language of schooling, students' L1 continues to play an important role in their private lives and in some aspects of public life. The colonial language may be seen as a unifying force in a country where there are many local languages or it is chosen because parents see it as a language of opportunity for their children's future. In these situations, local languages have status outside school, even if they are not used in schooling.

In the United States and in some other countries with large immigrant and minority populations, the goal of the educational system is to ensure

the acquisition of the majority language. Schools do not see themselves as responsible for students' L1 development. Indeed, many people seem to think that the maintenance of children's L1 detracts from their ability to learn L2. Students are discouraged from using their L1, and parents may even be encouraged to use their L2 rather than L1 at home. In a generation or two, immigrant families see their heritage languages replaced by the language of the majority. Skutnabb Kangas (1981, 2000) and Wong Fillmore (1991) have written movingly about how the loss of a language can affect children and their families. In some cases, as children acquire L2 and cease to use L1, they lose the ability to communicate effectively with their family. Such disruption of family communication can ultimately have negative consequences for the community as a whole.

Fewer than 10% of Americans say that they speak a language other than English "well" (Robinson, Rivers, & Brecht, 2006). In light of the potential value of foreign language abilities for global business and intergovernmental affairs, the lack of proficient speakers of other languages may be seen as troubling. It is also somewhat ironic that, at the same time that the U.S. government is calling for more linguistic resources, there is skepticism about the appropriateness of helping children maintain and develop their skills in the language they have learned at home. The basis for the skepticism rests partly on the belief that it is essential to start second language (L2) learning as early as possible in order to take advantage of children's exceptional ability to learn languages "quickly and easily". Unfortunately, this belief can lead to subtractive bilingualism, depriving children of the opportunity to become fully bilingual. Furthermore, as they undertake their education in a language they do not yet know well, children are likely to fall behind in their academic achievement. Such deficits tend to be cumulative, and students fall farther and farther behind. And yet, researchers have shown repeatedly that when children maintain their first language (L1), especially if they develop literacy skills in that language, their L2 development is actually enhanced.

There have been many studies and many reviews of the research on the education of English language learners (ELLs) in the United States (e.g., August & Hakuta, 1997; Garcia & Baker, 2007; Genesee et al., 2006; Rolstad, Mahoney, & Glass, 2005). The research is complex, and comparisons across studies are often difficult because of factors such as drop out rates, socioeconomic differences, definitional differences (for example, in some studies, "bilingual education" refers to programs that are brief and transitional; in others the same term is used to describe

programs such as dual immersion that provide long term, sustained instruction in two languages).

One approach to educating English language learners has been simply to place them in "mainstream" classrooms where native speakers of English are in the majority. In these classrooms, regular grade-level teachers are expected to meet the needs of ELLs as well as those of their English-speaking peers. Such programs have the advantage of providing students with many hours of exposure to the target language. All subject matter is taught in the target language, and there is limited, if any, use of the students' first language. Such an approach may include a few hours a week of direct instruction in English as a second language (ESL) classes, but the ESL teacher may not be able to coordinate the instruction with the work students are doing in their regular classes. Another approach, sometimes called "structured English", provides instruction in English only, but seeks to adapt the language so that it is comprehensible to the ELLs and adapted to their needs. A third approach is bilingual education, in which, for periods varying from as little as a few months to as much as several years, students are taught some of the subject matter through their L1 and some through English while they develop the English skills that enable them to cope with grade level work.

Lindholm-Leary and Borsato (2006) reviewed dozens of studies comparing outcomes for ELLs in different types of programs. The first question they asked was "Are programs designed for ELLs better than mainstream programs for the learning of English?" In this analysis, they combined results from various bilingual education approaches, structured English immersion, and ESL support programs. Their conclusion was that students in programs that took account of the special needs of ELLs did at least as well and often better than those in mainstream English-only situations. This was true in terms of test scores but perhaps more importantly, it was also true in terms of drop out rates and attitudes toward education. Even though some studies found small advantages in the test scores of students in mainstream programs in the first year or two of schooling, those advantages were not maintained, and children who had received a substantial amount of instruction in their L1 or specialized instruction in their L2 surpassed the mainstream students by the time they were in late elementary or secondary school.

Lindholm-Leary and Borsato also compared performance on academic subject matter by students in bilingual, ESL, and structured English immersion programs. Long-term results generally favored students who had sustained periods of instruction in L1 while they were developing

their English language abilities. A further comparison was made between results for bilingual education that was essentially brief and transitional (early exit) and bilingual education that continued the use of L1 for longer periods (late exit). Some evidence of advantages for early exit programs was found in the earliest grades, when students' performance in English was better than that of peers who were receiving more instruction via their L1. However, by grade 3, the trend was clearly in favor of the late exit programs, including dual immersion, and the differences were particularly striking for mathematics (see also MacSwan & Pray, 2005).

Cummins (2000) and Collier (1989) and others have argued that children who enter schools in the U.S. without a good knowledge of English may need several years to acquire age appropriate ability to use the language in cognitively challenging academic environments. The research evidence suggests that the inclusion of opportunities for students to continue academic learning *though* their L1 has the potential to improve outcomes in subject matter learning. There is no evidence that devoting time to learning through the L1 and developing literacy skills in the L1 is itself any impediment to the acquisition and development of the L2. Indeed, there is evidence to the contrary. For example, Riches & Genesee (2006) looked specifically at the interaction between L1 and L2 proficiencies with regard to literacy. They found evidence that strong L1 skills, especially L1 literacy skills, were associated with long-term success in L2 abilities for minority language children.

Teachers and school administrators often feel that they must devote all their testing and tracking resources to students' English learning and their academic learning, measured through English. Thus, growth (and loss) of L1 and the ability to display knowledge through the L1 are often completely absent from official school records. Even program evaluations of so-called bilingual programs often have minimal or no information about children's L1 abilities over time. Such tunnel vision, focused exclusively on tests of L2 knowledge and subject matter knowledge tested in the L2, can greatly underestimate the growth and development of the bilingual child. Ignoring L1 abilities misses an opportunity to build on strengths rather than lamenting limitations.

Many people continue to believe in the myth that children can master a language in a short time and that the best way to learn a language is to be immersed in it and to pay as little attention as possible to languages known before starting to learn the new language. This latter belief has been proven unfounded time and time again. Although it may be politically advantageous for some to claim that maintaining and

developing skill in L1 interferes with long-term success in learning L2, such a view is not supported by the research.

What can we learn from U.S. research on the education of minority language children?

- For minority language students' English ability and academic success, special programs are more effective than mainstream programs that have no provision for L2 learners.
- Bilingual programs are better in the long run than programs that exclude L1 instruction.
- Late exit programs are better than those that place students in mainstream L2 instruction before they have built good literacy skills in the L1.
- L1 abilities support L2 development. This is especially true for literacy.
- Additive bilingualism is better than subtractive bilingualism for long-term academic success – not to mention the benefits of knowing more than one language.
- Beginning L2 after L1 is well established is no impediment to L2 success.
- Successful language learning takes thousands of hours, whether in monolingual mainstream or bilingual programs.

What can we *not* learn from U.S. research on the education of minority language children?

- A simple solution for a complex problem.

On the basis of the evidence accumulated by researchers, bilingual education offers the greatest promise for the education of minority language children. However, many educators and parents are unconvinced because they have seen cases where bilingual education was perceived as failing to deliver on that promise. The rejection of bilingual education would be premature, however, and it is important to understand why some bilingual education programs have not produced the hoped for results. Every school, every classroom, and certainly every large school system faces many challenges. Some of the things that may have limited the success of bilingual education programs in the U.S. include

- Too little time devoted to the L1 – both in the sense that too few hours in a school day are used to encourage L1 growth and in the sense that L1 instruction ends after too few years.
- Too little attention to the L1 because the school system sets goals and measures achievement only in the acquisition of the L2 and on subject matter knowledge tested only through the L2.
- Too many teachers – both L1 and L2 – who are poorly prepared, unmotivated, or overwhelmed by the challenges their students face.
- Testing requirements that take classroom time away from teaching and that encourage or require teachers to focus mainly on preparing for tests.

Meeting the challenge of educating children from minority language communities in the U.S. will not be easy, but attempting to do so by insisting on the earliest possible replacement of the L1 by the L2 ignores the findings of research showing the benefits of strong bilingual approaches. Second language acquisition is a challenge for learners at any age, and educational policy based primarily on the myth that language learning for young children is "easy as pie" is not likely to succeed.

CONCLUSIONS

The belief that children learn languages easily and quickly has led education authorities in many countries to introduce L2 instruction as early as possible. The benefits of such early instruction remain to be demonstrated. In foreign language settings, research evidence suggests instead that children who are past early childhood – age 10 or 11 – are more efficient school learners, having a good understanding of what language is, what school is, and how to learn at school. If they have been schooled in their first language, they bring their knowledge of concepts and the L1 vocabulary that goes with this knowledge. Literacy and an academic vocabulary in L1 are powerful platforms on which to build L2 abilities and academic learning through L2.

Children who learn languages in early childhood – whether in school or elsewhere – may also forget these languages if they are not sustained as they grow older. If the loss of L1 occurs before L2 is well established, the effects of subtractive bilingualism can be substantial for families and for the larger communities. In schools where minority language children are taught exclusively through their L2, they may experience a period during which they are deprived of opportunities to learn through a language they

already know. They begin to fall behind in their academic work and may take so long to catch up that they eventually drop out and cease trying. At that point, they are left with an incomplete education in either language.

In this paper, we have reviewed the types of evidence that have been used to support the hypothesis that children learn languages quickly and easily and the related hypothesis that it is essential to begin L2 instruction as early as possible. In support of this hypothesis, the evidence taken from non-instructional contexts has been found to be weak or inappropriate, and inadequate as a basis for educational policy. The evidence from school-based research does not support the idea that only students whose L2 exposure begins in the earliest school years will achieve high levels of L2 proficiency. Furthermore, school-based research shows that a strong background in L1, especially literacy, is the best foundation on which to build L2 ability. Achieving high levels of language proficiency takes thousands of hours. This is just as true for young children as it is for older learners.

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