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Resource Needs for California's English Learners

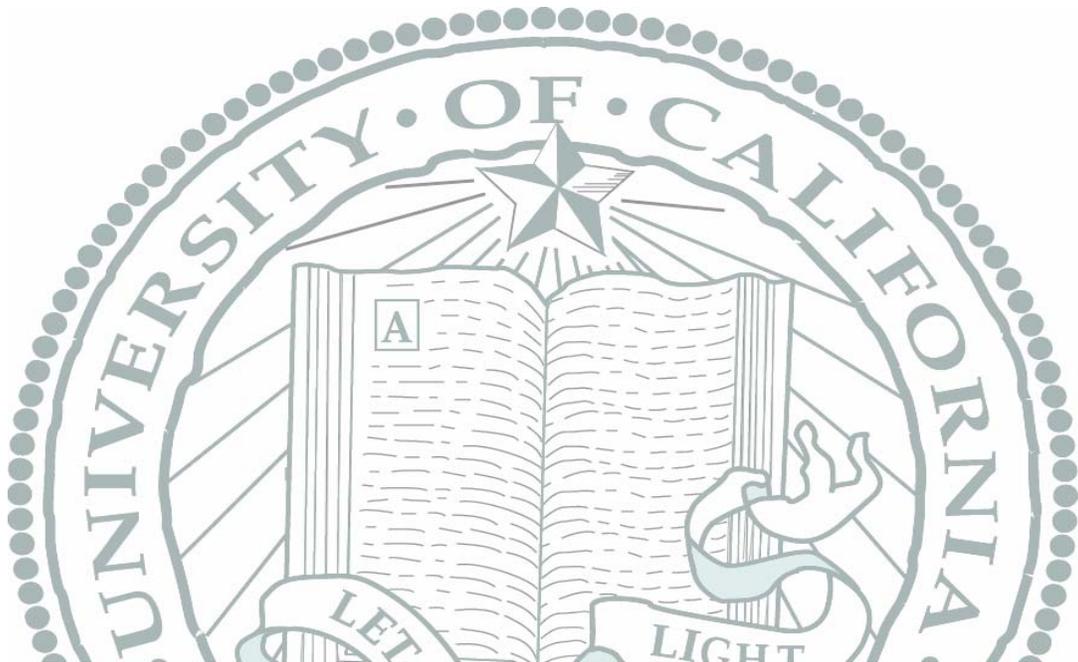
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December 30, 2006

University of California

**LINGUISTIC MINORITY
RESEARCH INSTITUTE**



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Paper prepared for "Getting Down to Facts: A Research Project to Inform Solutions to California's Education Problems," a research project of more than 20 studies designed to provide California's policy-makers and other education stakeholders with the comprehensive information they need to raise student achievement and reposition California as an education leader. The project was directed by Susanna Loeb of Stanford University with funding provided by The Bill and Melinda Gates Foundation, The William and Flora Hewlett Foundation, The James Irvine Foundation, and The Stuart Foundation. We would like to acknowledge the guidance and support of Susanna Loeb through the duration of this study, Julie Maxwell-Jolly for her assistance in carrying out the school case studies, and Kenji Hakuta for providing helpful comments on an earlier draft of this report.

Abstract

This paper examines the amount and type of resources that linguistic minority students—those students who come from households where a language other than English is a spoken—need to meet the same challenging standards and to have the opportunity to achieve the same educational outcomes as other students. In this paper we first describe the nature of the linguistic minority population in California. We then develop a conceptual framework for analyzing their resource needs. Subsequently, we review existing studies that have attempted to estimate the resource needs for this population. Drawing on these existing studies and the results of new data collection, we describe the nature of the resources needed to provide an adequate education for California's English learners. We conclude with policy recommendations about how to approach estimating the real dollar costs of educating English learners and linguistic minority students.

Educating any student requires resources, including school facilities, teachers, and textbooks. Yet students differ in a myriad of ways—in their initial social and cognitive skills when they first enter school, in the level of family and community resources available to support their learning in school, among others. Just as students themselves differ, so too do the resources needed to educate them. In order to meet the same challenging standards and to have the opportunity to achieve the same educational outcomes, some students need more support and resources than other students. What amount and types of resources do such students need? This paper attempts to address this question regarding one population of students—those students who come from households where a language other than English is a spoken, so-called linguistic minority students. Although some of these students arrive at school already proficient in English, most linguistic minority students are not yet proficient in English when they start school, and will continue to lag behind their English-speaking peers for many years afterward. These students, referred to as *English learners (ELs)*, require additional resources and support in order to be successful. Yet while the literature on school finance has recognized to some extent the resource needs of English learners, the resource needs for those children who come from non-English speaking homes and have varying levels of English proficiency have been largely overlooked in this literature. For the most part, once students are classified as fluent in English—whether this occurs initially upon entering school, or sometime later—their needs for specialized educational support are largely ignored and they are typically not supported with any special intervention by the schools. In an earlier study, Gándara and Merino (1993) found this to be a significant reason why some teachers were reluctant to reclassify their EL students, believing they needed ongoing support that they would not receive once they were no longer labeled as EL. Although most low-income students need some additional educational support,

the needs of linguistic minority students differ to some extent from the needs of other disadvantaged populations, such as students from low-income English-speaking families and communities. Moreover, the needs of these students differ from each other depending on their linguistic, social, and academic backgrounds and the age at which they enter the U.S. school system.

In this paper we first describe the nature of the linguistic minority population in California. Then we develop a conceptual framework for analyzing their resource needs. Subsequently, we review existing studies that have attempted to estimate the resource needs for this population. Drawing on these existing studies and the results of new data collection, we then describe the nature of the resources needed to provide an adequate education for California's English learners. We conclude with policy recommendations about how to approach estimating the costs of educating English learners and linguistic minority students.

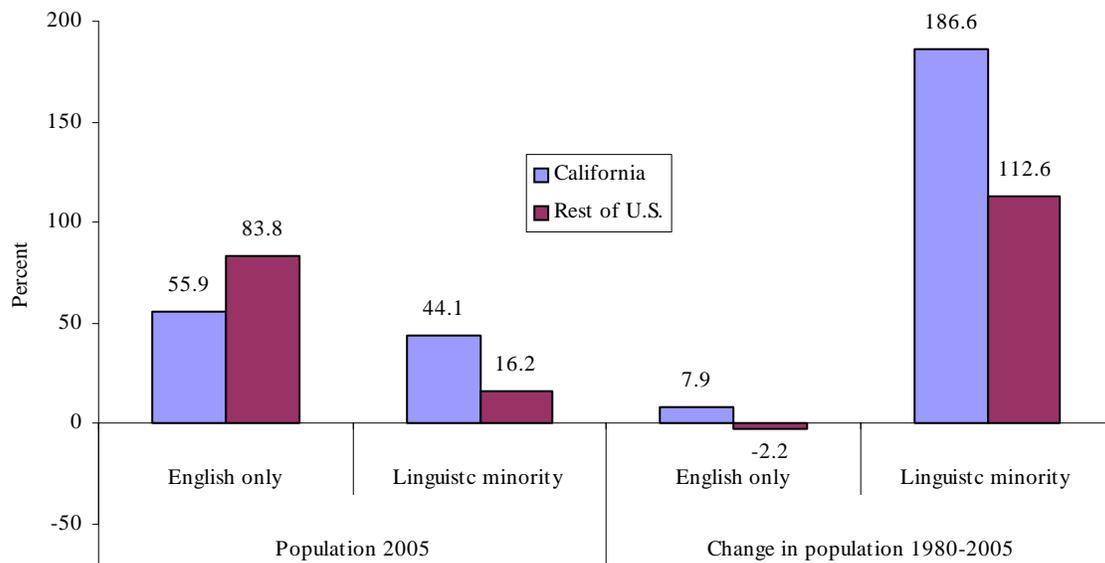
California's Linguistic Minority Population

Linguistic minorities represent one of the largest segments of the school-age population in California. According to data from the U.S. Census, there were 3 million children, age 5-17, living in California who spoke a language other than English, representing 44 percent of the school-age population (Figure 1). This is a much larger percentage than the rest of the U.S. where linguistic minority children represent 16 percent of the population. Overall, 29 percent of all school-age linguistic minority children in the U.S. reside in California. In California, 78 percent of linguistic minority students and 85 percent of English learners speak Spanish.

Over the last 25 years, the linguistic minority population has exploded relative to the English-only population, both in California and in the rest of the U.S. In California, the

linguistic minority population increased 187 percent, while the English-only population increased by only 8 percent. Elsewhere in the U.S., the linguistic minority population increased by 113 percent, while the English-only population actually declined by 2.2 percent. In the U.S. as a whole, the linguistic minority population more than doubled, while the English-only population actually declined. This means that all of the 5 million additional school-age children in the United States over the last 25 years were linguistic minorities.

Figure 1—Linguistic Minority Population in California and the Rest of the U.S., 1980-2005



SOURCE: U.S. Bureau of the Census, *1980 Census of the Population, Volume 1, Characteristics of the population. Chapters C/D, Detailed social and economic characteristics, Parts 1 and 6* (Washington, D.C.: U.S. Bureau of the Census, 1983); U.S. Bureau of the Census, *2005 American Community Survey*. Retrieved October 5, 2006 from <http://www.census.gov/acs/www/index.html>

Most linguistic minority children attend public schools. In the 2004-05 school year, 2.6 million, or 42 percent, of California’s 6.3 million public school children were linguistic minorities (Table 1). Of these, 1.6 million were designated as English learners (ELs) and another 1 million were designated as Fluent English Proficient (FEP). Yet the proportion of EL to FEP students varies as students’ progress through school—in kindergarten only 15 percent of

linguistic minorities were classified as FEP, whereas in eighth grade 54 percent were classified as FEP.¹

Table 1—California Linguistic Minority, Spanish-Speaking, and Latino Public School Students, 2004-05

	English Learner	Fluent English Proficient	Total Linguistic Minority	Total Enrollment
ALL STUDENTS				
K-5	957,818	325,749	1,283,567	2,869,709
Percent of total enrollment	33%	11%	45%	100%
Grade 6-12	612,818	737,480	1,350,298	3,398,375
Percent of total enrollment	18%	22%	40%	100%
Ungraded	20,889	1,349	22,238	54,012
Percent of total enrollment	39%	2%	41%	100%
Total	1,591,525	1,064,578	2,656,103	6,322,096
Percent of total enrollment	25%	17%	42%	100%
SPANISH-SPEAKING STUDENTS				LATINOS
K-5	819,116	219,477	1,038,593	1,439,512
Percent of total enrollment	57%	15%	72%	100%
Grade 6-12	519,018	505,340	1,024,358	1,488,861
Percent of total enrollment	35%	34%	69%	100%
Ungraded	19,644	1,133	20,777	32,721
Percent of total enrollment	60%	3%	63%	100%
Total	1,357,778	725,950	2,083,728	2,961,094
Percent of total enrollment	46%	25%	70%	100%
Percent of all students	85%	68%	78%	47%

SOURCE: California State Department of Education, *Dataquest*. Retrieved September 30, 2006, from: <http://data1.cde.ca.gov/dataquest/>.

How it happens that students are reclassified as English speakers is an important policy area, and one that has resource implications as well.² A number of criteria are used to determine whether linguistic minorities are ELs or FEP—including English proficiency and academic achievement—and these criteria differ for students’ initial classification when they first enter school and subsequent reclassification as *R-FEP* once they progress in school (Gándara & Merino, 1993; Linquanti, 2001). Moreover, local education agencies are accorded considerable latitude in their designation practices, leading to widespread differences in reclassification rates

¹ Based on date retrieved September 9, 2006 from the California Department of Education website, *Dataquest* (<http://data1.cde.ca.gov/dataquest/>).

² For example, Gándara and Merino (1993) found schools often didn’t have the resources to reclassify students.

(Parrish, et al., 2006, Chapter V).³ Because of these differences, it is important to examine the educational needs and performance of both EL and R-FEP (former EL) students. Moreover, as we show below, students who are reclassified continue to have needs, even if they initially meet what appear to be high standards.

School performance

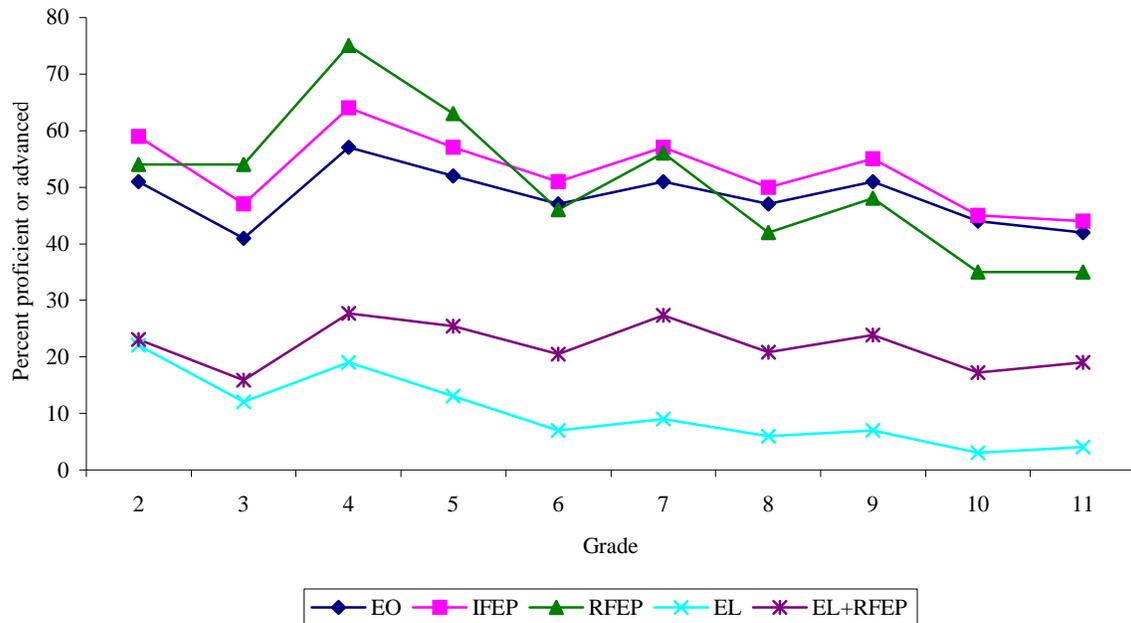
Such an examination reveals that the academic achievement of linguistic minority children, particularly those who are not yet proficient in English, lags far behind children from English-only backgrounds. For example, Figure 2 shows the percentage of students scoring at the proficient level on the California Standards Test in English Language Arts in 2005 by language background.

Fifty-one percent of English-only (EO) students scored at the proficient level in grade 2, with the percentage declining to 42 percent by grade 11. Language minority students who entered school already proficient in English (I-FEP) scored consistently higher than EO students at all grade levels. However, students who were reclassified as FEP (R-FEP) initially performed higher than EO students in the lower grades, but by grade 8 they scored at a lower level.

Because the population of English learners declines as more and more students are reclassified as FEP, it is more appropriate to gauge the combined performance of current ELs and former ELs (identified in the graph as EL+RFEP). Twenty-three percent of this combined population scored at the proficient level in grade 2, with performance peaking in grade 4, declining to 19 percent in grade 11. Over the grade span, the achievement gap between English-only students and current/former EL students remains essentially unchanged.

³ As Parrish, et al. (2006) note, initial classification is primarily based on students' initial score on the California English Language Proficiency Test (CELDT), while reclassification is based on multiple criteria, leading to more variation in reclassification than initial classification (p. V-5).

Figure 2--Performance on California Standards Test, English Language Arts by Language 2005



SOURCE: California State Department of Education, *Dataquest*. Retrieved September 30, 2006, from: <http://data1.cde.ca.gov/dataquest/>.

Performance on other assessments shows similar disparities. For example, 62 percent of current and former EL tenth grade students passed the California High School Exit Exam in 2006, compared to 83 percent of I-FEP students and 83 percent of EO students.⁴

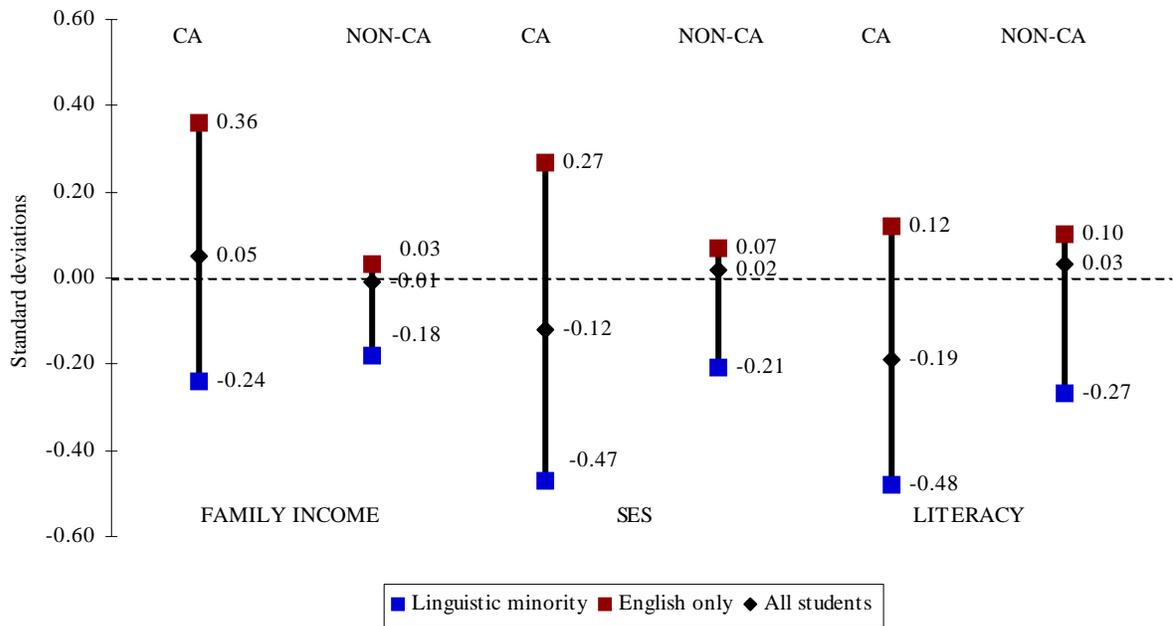
School Readiness

One reason for the underachievement of English learners is that they come from more disadvantaged backgrounds—from homes and communities with fewer resources—and begin school at a significant disadvantage compared to their English-speaking peers, especially in California. Some indicators of this disadvantage for kindergarten students in 1998-99, based on data from the Early Childhood Longitudinal Study (ECLS), are shown in Figure 3.⁵

⁴ Based on date retrieved September 9, 2006 from the California Department of Education website, *Dataquest* (<http://data1.cde.ca.gov/dataquest/>).

⁵ Each indicator was normalized for the entire population of kindergarteners to a mean of 0 and the standard deviation of 1. This allows easy comparisons among different indicators and different groups using a common metric—standard deviations—also referred to as effect sizes (Cohen, 1988). Although there are no strict standards

Figure 3—Selected Indicators of Family Background and School Readiness in California and in the rest of the U.S. by Language Background, 1998-99 Kindergarteners



SOURCE: Analysis of data from the Early Children Longitudinal Study of the Kindergarten Class of 1998 (N=17,424)

One such indicator is family income. The family income of linguistic minority (LM) students in California is .24 standard deviations (SD) below the national mean, whereas the family income of English-only students is .36 SD above the national mean, producing an income gap of .6 SD, which is considered a moderate income gap. This is three times as large as the .21 SD income gap between EO and LM students outside of California. The gap in socioeconomic status (SES), a composite indicator that includes both family income and parental education, is even greater. In California, the gap in SES between EO and LM students is .74 SD, considered a large gap, whereas the SES gap outside of California is a much smaller .28 SD. The gap in initial language (both oral and written) skills at the beginning of kindergarten reflects the gap in SES. In California, the gap in initial language skills is .60 SD, where as outside of California the

to interpret differences in these values, values above .8 SD are often considered large, values above .5 are considered moderate, values above .2 SD are considered small, and values below .2 are considered inconsequential (see Cohen, 1988, pp. 24-27).

gap is .37 SD. The gaps are even larger for Spanish-speaking linguistic minorities. In California, for example, the gap in SES between Spanish-speaking linguistic minorities and EO students is 1.31 SD and the gap in language skills is .87 SD (not shown in figure). These indicators reveal that not only do linguistic minority students in California come from more disadvantaged backgrounds and begin school at a considerable disadvantage relative to English-only students, the relative disadvantage they face is considerably larger than the disadvantage faced by linguistic minority students elsewhere in the U.S., and thus the resources needed to close that gap could arguably be greater in California than in other places.⁶

Conditions for Learning

Linguistic minorities not only begin school with a considerable disadvantage compared to other students, they also are more likely to face poorer conditions for learning in school. Drawing on data from a variety of sources, Gándara and Rumberger, and Rumberger and Gándara (2003; 2004) identified seven inequitable conditions that affect linguistic minorities' opportunities to learn in California:⁷

- (1) **Inequitable access to appropriately trained teachers.** English learners are more likely than any other group of students to be taught by a teacher who lacks appropriate teaching credentials. For example, Rumberger (2002) found that while 14% of teachers statewide were not fully credentialed, 25% of teachers of English learners lacked a teaching credential. Although the percent of teachers lacking credentials has continued to decline each year (in part due to a redefinition of the term “credentialed”), EL’s continue to be

⁶ There are other gaps as well. Linguistic minority students, for example, are less likely to participate in center-based preschool—among California kindergarteners in the fall of 1998, 37 percent of linguistic minority students had attended center-based preschool the year before kindergarten, compared to 62 percent for English-only students (Bridges, Rumberger, Fuller, & Tran, in press). This disparity is larger than in the U.S., where 41 percent of linguistic minority students attended center-based preschool, compared to 59 percent of English-only students (Rumberger & Tran, 2006, Table 4).

⁷ Although this analysis focused primarily on the English learners, the conditions would generally apply to all linguistic minority students.

disproportionately taught by under-qualified teachers. In 2005, less than half (48%) of teachers of EL students had an appropriate EL authorization to teach them (Esch et al, 2005).

(2) **Inadequate professional development opportunities to help teachers address their**

instructional needs. In a recent survey of 5,300 teachers of English learners in California, Gándara, Maxwell-Jolly and Driscoll (2005) found that more than half of teachers with 26-50% of their students designated EL had either zero or one in-service training session devoted to the instruction of EL students over a period of five years. Moreover, a primary complaint of respondents was that the in-service sessions were of uneven quality.

(3) **Inequitable access to appropriate assessment to measure their achievement, gauge**

their learning needs, and hold the system accountable for their progress. Because the state's accountability system consists of standards-based tests developed for English speakers, and makes no accommodation for the fact that EL students are, by definition, deficient in English, these tests are neither valid nor reliable indicators of what these students know and can do (AERA/APA/NCME, 1999).

(4) **Inadequate instructional time to accomplish learning goals.** Across the state, English

learners are provided no additional classroom instructional time even though they have additional learning tasks: acquiring English, as well as learning a new culture and its demands. One way that schools can effectively provide more instructional time is by providing additional instructors within the same time. That is, more one-on-one instruction within the confines of the same number of hours. However, classrooms in California with large numbers of EL students have fewer adult assistants in them to help

provide individual attention for students—an average of 7 hours assistance weekly for classrooms with more than 50% EL students, versus 11 hours for those with no ELs (Gándara et al, 2003).

(5) **Inequitable access to instructional materials and curriculum.** A 2002 survey of 829 California teachers found that among classrooms with over 30% EL students, 29% of teachers reported not having adequate materials in English for their students, while among classrooms with fewer than 30% EL students, only 19% of teachers reported this same shortage (cited in Gándara et al, 2003).

(6) **Inequitable access to adequate facilities.** In the same survey of California teachers cited above, 43% of teachers in schools with more than one-fourth EL students reported their physical facilities were only fair or poor. Among teachers with fewer than one-fourth EL students in their school, only 26% reported similarly dismal conditions on their campus.

(7) **Intense segregation in schools and classrooms that place them at particularly high risk for educational failure.** In 2005, more than half of California’s elementary English learners attended schools where they comprised more than 50 percent of the student body, which limited their exposure to native English speakers who serve as language “role models” (Rumberger, Gándara, & Merino, 2006).

These conditions contribute to the lack of progress in closing the sizeable achievement gap between English-only and linguistic minority students during elementary and secondary school.

A Conceptual Framework for Identifying Resource Needs

In order to analyze the resource needs for linguistic minority students, we first develop a conceptual framework. The framework focuses on two issues: (1) the goals of an adequate education for this population of students—what educational outcomes the resources are supposed to produce; and (2) the types of resources needed to produce these outcomes.

Goals of an Adequate Education for Linguistic Minorities

The first task in determining the cost of an adequate education for linguistic minorities (LM) is to specify the *kind* of education we would be funding. An adequate education for linguistic minorities may not be the same in content and delivery as an adequate education for all students, nor is it necessarily the same as an adequate education for linguistic minorities who may speak English fluently enough to be classified as English speakers, but still go home to family members and a community in which English is used very little. These students will not be exposed to the same breadth or depth of English language input, or opportunities to practice and develop English language skills, as their peers whose home context is English. The goals that both society and communities may have for these students can differ from the goals held for native born, English-speaking students. While the rhetoric of school reform is often cast in terms of “all students can learn” and “all students can meet the same high standards,” in reality few linguistic minorities are expected or given the academic tools to achieve to the same standards as their English-speaking peers. On the other hand, English-speaking linguistic minority students MAY be expected to meet the same goals as their English-speaking peers, but neither are they given the support necessary to reach those goals. The reasons for this are multiple and complex, but among the factors that contribute to this dilemma are: linguistic minority students (whether English-speaking or not) tend to be economically poorer than English-only students and many

come from backgrounds with much lower parental education than their English-only peers (see Figure 3); they have less time to learn academic material because some of their instructional time must be devoted to learning English, or bringing their English skills to the level of their English-only peers; they tend to have less well-prepared teachers than the typical English speaker; and the contexts in which they learn are, on average, more poorly supported and maintained than those of English speakers (Rumberger & Gándara, 2004). They are also much more likely to encounter issues of safety at their schools than do other students, as students in low-income schools and communities encounter more incidences of physical threat, which can both inhibit confidence and distract students from learning (see Gándara et al, 2003). For example, in 2005, 10% of all Latino students (a rough proxy for English learners, as such data are not collected for EL students) reported that they were afraid of being attacked at school or on the way to school, compared to just 4% of white students (NCES, 2005). Some of these factors can be addressed in a straightforward way with increased fiscal resources, some must be considered part of a broader social context in which communities must be supported to help youth thrive, and some require reconceptualization of the needs of linguistic minority students and their teachers, and a sound definition of the goals of our education system for these students.

Cognitive Goals

Most of the focus of educating linguistic minority students has been on those students labeled as English learners and simply on teaching them English, considering this job accomplished when EL students can pass a test of English proficiency. Few, if any, services are routinely provided beyond the point where students are reclassified as fluent in English, and seldom are specialized resources provided for those students who enter school ostensibly fluent in English, but coming from non-English speaking homes.

The CELDT (California English Language Development Test), used in California to determine English proficiency for students in grades K to 12, tests the four modalities of language: listening (comprehending), speaking, reading, and writing from the second grade on. Half of the test is weighted toward listening and speaking, with one quarter each for writing and reading. While the test is theoretically aligned to English Language Development (ELD) standards, it is not aligned to English Language Arts (ELA) standards. Students can score high on the CELDT at an early-advanced or advanced level, and yet score very low on the state's test of English Language Arts. For example, at the 10th grade level, about two-thirds of students scored at the early-advanced or advanced level on the CELDT in 2005, but only 6% were able to pass the ELA standards test at a level of proficient (Rumberger & Gandara, 2005). In sum, the CELDT tests basic communicative English, while the ELA standards test measures students' knowledge of English as a subject matter.

It is because English learners in California have such great difficulty passing tests of English Language Arts (and other academic subjects) at the level of proficient, especially in upper grades, that they have often remained in the category of English learner for 7 years or more (Parrish et al, 2006), unable to reclassify to Fluent English Proficient (FEP) status⁸. This has, in turn, generated great debate about the level of academic proficiency these students should have to meet in order to be reclassified. If they are held to a high bar—full proficiency in English Language Arts—many will never reach FEP status because many students who are NOT English learners never reach that level. But, if they are held to a lower standard, the concern is that students will be placed in a “sink or swim” fashion into mainstream classes before they are ready to “swim” on their own. A graphic example of why educators have this concern is

⁸ The California Standards Tests (CST's) are scored on 5 levels of proficiency –far below basic; below basic; basic; proficient; and advanced. A score of 350 or higher on a scale from 150 – 600 is required to meet the standard of proficient.

illustrated in Figure 2: even at the current relatively high bar, reclassified students show precipitous drops in achievement as the curricular demands become more difficult at upper grades. While the state does not specify the level districts must use, common practice has been to set the bar at “proficient,” but increasingly districts are lowering that bar in an effort to reclassify more students more quickly. The state-commissioned study on the effects of Proposition 227 raises the reclassification dilemma as a core issue in the education of EL students (see Parrish et al, 2006).

In a recent article critiquing the methodologies used in “costing out” studies, Rebell (2007) notes that one of the weaknesses of such studies is their failure to identify the premises behind their outcome standards. In order to address this legitimate concern, we walk the reader through our conceptualization of different possible outcomes standards. We outline four possible standards for an adequate education of linguistic minorities, which would have implications for different types and levels of expenditures, as well as quite different outcomes for students: (1) reclassification to FEP only; (2) reclassification and maintenance of academic proficiency; (3) reclassification, maintenance of academic proficiency, and closing of achievement gaps; (4) reclassification with biliteracy. We then argue that a separate definition of an adequate education for linguistic minority students who test as proficient in English should be considered, and suggest what that might look like. Finally, we consider that schools may also hold non-cognitive goals for their EL students and we review what some of those may be.

(1) Reclassification to FEP only

The first standard is a basic, minimal standard, much like that which is tacitly in place today (and which probably contributes to the exceptionally low performance of EL students in the schools). The goals for this standard are to pass the CELDT test and an ELA standards test

at some unspecified level and at one point in time, in order to be reclassified as a Fluent English Proficient student. This standard does not speak to the students' overall academic proficiency, nor would it consider the skills that students need to maintain whatever level of academic proficiency they have attained at the point of reclassification. Once classified as FEP (or I-FEP in the case of students who begin school with adequate proficiency), all additional supportive services would end, as would any additional resources. This standard focuses almost exclusively on attainment of sufficient English to be mainstreamed into the regular curriculum. Thus, although it represents current practice, it would appear to be a lower standard for adequacy than that which would be set for English speakers, as the current goal for English speaking students is that they will meet standards at a level of "proficient" at EVERY subsequent grade level. Therefore, the state might choose to define an adequate education for EL students at a somewhat higher level.

(2) Reclassification and maintenance of academic proficiency

The second level standard would provide for students to become reclassified as FEP and attain *and* sustain a level of basic or proficient in English Language Arts and other tested areas of the curriculum (e.g., mathematics and science). This would probably align more closely with the definition of an adequate education for all students, certainly as specified by NCLB. Given that English learners, by definition, come to school with greater needs than their peers who already have a command of English, the implications for this definition are that ongoing resources would be needed for schools to bring linguistic minority students to this level, and to maintain them there. This is akin to what happens for low-income students—resources are continuous no matter what level of achievement they attain.

(3) Reclassification, maintenance of academic proficiency, and closing of achievement gaps

This third standard would presume that students achieve English proficiency, maintain proficiency in academic subjects, and close the gap in achievement with native English speakers. This goal implies a focus on achievement across the performance continuum, raising the achievement of high performers as well as lower performers so that the end result is something like parity with native English-speaking peers. We suggest that this standard deserves particular consideration since many school reform efforts purport to be dedicated to this goal, without specifying exactly how this would happen and without acknowledging the need to focus on the entire spectrum of achievement, from high performers to low performers, especially for English learners. However, there are many who argue that it is impossible to reach such a standard given U.S. social policy and the paradigm of public schooling (see, for example, Rothstein, 2004).

(4) Reclassification with biliteracy

Finally, the fourth standard would be achievement of reclassification to English proficiency, proficiency in academic subjects, and biliteracy. While we do not specify that achievement gaps would also be closed, we know from the research on second language acquisition that the closing of achievement gaps is most likely to occur in the context of a biliteracy curriculum (August & Shanahan, 2006; Genesee et al, 2006; Slavin & Cheung, 2004). This goal also incorporates an inherent compensating advantage for EL students. The one area in which these students have a decided advantage over their English-speaking, native-born peers is that they have the immediate potential of becoming fully bilingual and biliterate, with all of the attendant economic and occupational advantages that accrue to those competencies for both the individual and the society (Saiz & Zoido, 2005). Because the state of California does not

routinely test students in their primary language, even when they arrive fully literate in that language, we do not have data on the degree to which the EL students in our schools are literate in their first language. Therefore, it is difficult to know how much developed potential is currently untapped. Given that there were about 158,000 relatively new entrants to California's secondary schools in 2005 (having entered the system within four years as English learners⁹), if we assume that most of these students have had sufficient education in their home country to become literate, it is probably safe to assume that *at least* 100,000 6th to 12th graders already possess literacy in their native language. In addition to the individual returns for bilingualism and biliteracy, it can be argued that the state realizes certain economic advantages as a result of developing this additional human capital.

This fourth definition of an adequate education for linguistic minority students could include providing a socio-economically compensating skill (on an optional basis) for LM students—biliteracy—in addition to meeting the basic educational adequacy definition for all students. The goal of attaining biliteracy would necessarily have to be optional, or voluntary, on the part of students and families (and could be extended to all students in California), as it would entail not only additional resources on the part of the state, but also additional effort on the part of the students.

Language of Instruction

With the exception of the 4th standard—biliteracy—we have been agnostic about the linguistic strategies for achieving these goals. However, the language(s) used for instruction may in fact imply a different level of resources because (1) a different configuration of personnel may be required if a student is educated using the primary language; and (2) it may take more or

⁹ Based on data from the 2005 California English Language Development Test (CELDT). Data retrieved December 22 from <http://data1.cde.ca.gov/dataquest/>

less time to achieve proficiency in English and academic subjects, and to sustain that learning, depending on the linguistic strategy used. So, for each of these goals, we posit that a separate calculation should be considered for English-only and bilingual strategies. It is not evident, however, that the cost differentials would always vary in the same ways. For example, the existing research on the costs of teachers for EL students has found that, all things being equal, using bilingual teachers is a more cost effective strategy than using monolingual teachers and then having to supplement the classroom instruction by bringing in aides and other support personnel (Parrish et al, 1992; Carpenter-Huffman & Samulon, 1981). On the other hand, if no supplemental teaching staff are used in the English-only classroom, it MAY require that teachers have smaller classes in order to achieve the same results. Later in this paper we attempt to build a model for considering the differential costs associated with instruction using primary language versus English-only at the elementary and secondary levels.

Continuing support for LM students

The achievement data presented earlier (Figure 2) show that reclassified English learners fall behind their English-only counterparts in secondary school. Although some of this backsliding may be due to the fact that English learners come from lower socioeconomic backgrounds than English-only students (Figure 3), data presented below (Table 6) show that even linguistic minority students from non-poor backgrounds have lower achievement than English-only students from non-poor backgrounds, which suggests that the disparities are not simply due to SES. Consequently, we argue that the education of linguistic minority students should also incorporate both standards and a resource structure applicable to all students in this category—including those who have been reclassified as English proficient. This would reasonably involve setting the same academic standards for these students, but providing specific

additional support in developing academic English, including systematic exposure to the educational capital resources of the mainstream society (e.g., the books, films, language that middle class Americans share informally with their children). This standard, then, would set expectations equal to those of English-speaking, native U.S. students, but incorporate additional time and other resources to compensate for their lack of informal (where most learning occurs) exposure to the educational capital of their peers. The evidence is strong that to really close the achievement gaps, informal learning would have to be equalized as well as formal learning.

How long might it take before reclassified EL students could be considered sufficiently proficient in English to no longer need educational support? Hakuta, Butler & Witt (2000) presented evidence that it takes most students 3-5 years to achieve oral proficiency in English and at least 4-7 to attain academic English proficiency, depending on the student's background and learning conditions. Proficiency in *academic* English is the standard that would need to be met in order to have confidence that a student but might be able to compete with English-speaking peers without additional academic support. While we could have no certainty in any particular circumstance, we could imagine a formula that allowed us to predict with reasonable accuracy and within a reasonable confidence interval the amount of time that different students would need to achieve this level of functioning.

Hakuta et al (2000) lay out some of the factors that contribute to the differences in time to proficiency. A formula that allowed us to predict time to proficiency would include: the age of the student, and the age at first contact with English; schooling background; socio-economic status of the family, including most importantly parental education; language of the home and community; dynamic assessment of learning abilities and the educational conditions to which the student is exposed, including the general skill level of the teacher; any additional educational

interventions; and the level of linguistic segregation in the school. Given that most EL students in California come from homes with relatively low SES and from schools and communities that are linguistically segregated, and have teachers with relatively little knowledge of how to teach them (Gandara, et al, 2003), it is likely that most of these students will require *at least 7 years* before they can be safely moved into the mainstream without additional educational support. Current rates of reclassification suggest that, in fact, it may take considerably longer (Parrish et al, 2006).

Non-Cognitive Goals

In addition to the cognitive goals of learning English and academic subject matter, most parents want schools to provide instruction and support for their children to develop non-cognitive skills. Such skills also have an economic payoff in the labor market (Heckman & Rubinstein, 2001). As recently as the 2005 Gallup Poll on the public's attitudes toward education, the majority of parents contended that they wanted their children to take a wide variety of courses in school, as opposed to a "concentrated curriculum," and most preferred a "well rounded student" over one who receives A's (Rose et al, 2005). John Goodlad, in a comprehensive study of American schools, found that the parents he surveyed, which included large proportions of Latinos, hoped that their children would be provided a well-rounded education by the public schools. They wanted civic and social education, vocational education, the development of personal talents and virtues, *in addition to* academic instruction (Goodlad, 1984). Latino parents of English learners are often cited as wanting their children to be "buen educados," which translates in English to being "cultured," well-mannered, and cognizant of the needs of others. In other words, people who will be successful members of the society in which they live. Americans often refer to this as civics education, though the Spanish term goes

somewhat beyond this. Some of this can be learned in well-structured classrooms with caring teachers, but the development of personal talents and virtues probably extends beyond the routine of the classroom, especially at the secondary level where teachers rarely have more than one hour with a classroom of 25 or more students.

Another critical non-cognitive attribute is academic self-concept, or confidence in one's own ability to succeed in schoolwork. Richard Snow (1994), an influential American cognitive psychologist, argued that cognitive processes alone could not account for students' learning, but that both affective and conative (motivational) processes had to be viewed as interacting with the cognitive process to produce learning. There is a considerable literature to demonstrate this point in the research on second language learning. A number of studies (see Bialystock & Hakuta, 1994) have shown that individuals who are motivated to learn a language, whether by necessity or desire, are more effective learners of that language. Moreover, there is a multitudinous literature on affect and learning. For example, Bandura's (1982) very large body of work on social learning theory is based on the principle that learners who feel they have control over their own learning are more apt to excel, and that the sense of control is bound up in perceptions of self-efficacy—how they *feel* about themselves and their abilities. English learners are fundamentally learners, like all other students, and so are vulnerable to the same social and psychological factors that affect learning. However, although a number of studies have shown that ethnic minority students have no lower self-concepts than other students—and sometimes actually higher—(Dukes & Martinez, 1994) they nonetheless encounter many more problems in adjusting to the demands of school because of feelings of marginalization and lack of social and academic integration.¹⁰ If they come to feel that they are not capable of learning either a new language or a new content area, they will falter. Moreover, motivation has been identified as one

¹⁰ Linguistic minorities are twice as likely to drop out of school as English-background students (Rumberger, 2006).

of the most critical challenges for secondary English learners; the loss of motivation during adolescence is a key factor in high school failure and drop out (Meltzer & Hamann, 2005). Thus, one could set a goal for English learners—or for all students—of developing, in addition to cognitive skills, affective or motivational skills that would help sustain their ambition to succeed educationally even when the challenge is daunting. Some psychological interventions have been shown to foster these attributes in students (Seligman, 1986).

A final type of non-cognitive skill is cultural competence. As the U.S. becomes more ethnically and culturally diverse, it becomes increasingly important for both newcomers to this country, as well as the native population, to be able to effectively communicate and work together in a multicultural society. Yet newcomers face particular challenges in adapting to a new culture, language, and in the case of students, a new school system. Especially for older students, their ability to succeed in school will be related to their ability to adapt to new cultural circumstances and to integrate successfully with their peers (Olsen, 1998; Suárez-Orozco & Suárez-Orozco, 2001). Health care providers and social workers have recognized this need and have developed educational training programs to teach cultural competency (Betancourt, Green, Carrillo, & Ananeh-Firempong, 2003; Genao, Bussey-Jones, Brady, Branch, & Corbie-Smith, 2003; Hancock, 2005). Business leaders have also recognized the value of cultural competency for managers and employees (Grosse, 2001). Newcomer programs that attempt to ease immigrant students into the U.S. culture, while also teaching the basics of English, have likewise been a feature of some schools and districts, though their implementation has been uneven (McDonnell & Hill, 1993; Short, 2002). Cultural competence may not only benefit immigrant students in the labor market, it may also help them operate to successfully negotiate their multiple worlds of family, school, and community (Phelan & Davidson, 1993). We argue that

while cultural competence needs to be a goal for all U.S. students—and some of this may occur naturally through well-orchestrated, socially and ethnically diverse classrooms—some specific interventions are necessary for newcomers to help them transition into U.S. schools

We make no recommendation, nor do we argue for any particular definition of an adequate education for linguistic minorities. Our point is simply that in order to determine the costs associated with providing an adequate education for linguistic minority students, one must come to some agreement that unique needs exist, and that clear goals should be established. These goals may not be exactly the same as those held for other students, and may require a different mix of resources to achieve. In the next section, we discuss some of the known, and unique, needs of linguistic minority students that should be considered in any cost study.

Types of Resources

While it is obvious that resources are required to produce any desired educational outcome, there is considerable uncertainty and disagreement concerning the amount and types of resources that are necessary. Scholars have identified four types of resources that may impact student outcomes: (1) fiscal or monetary resources, (2) material resources, (3) human resources, and (4) social resources. Although these types are clearly related (e.g., fiscal resources can be used to purchase material and human resources), they remain conceptually distinct and have been distinguished in both the theoretical and empirical research literature.

Fiscal Resources

A major focus of research and policy on school finance has centered on securing adequate and equitable fiscal resources for schools. For example, between 1970 and 1990 lawsuits were filed in thirty-six states challenging whether the states provided adequate or equitable educational resources, and in nineteen cases the state Supreme Court struck down the

states' school finance system (Koski, 2004). In the meantime, researchers have debated whether fiscal resources make a difference (Card & Krueger, 1998; Figlio, 1998; Greenwald, Hedges, & Laine, 1996; Hanushek, 1986, 1996a, 1997; Jacques & Brorsen, 2002). In a major review of 187 studies that examined the effects of instructional expenditures on student achievement, Hanushek (1986) concludes: "There is no strong or systematic relationship between school expenditures and student performance." Other reviewers conclude, however, that school resources can make a difference (Hedges, Laine, & Greenwald, 1994, p.13).

Critics of the efficacy of fiscal resources point out that real expenditures per student have risen dramatically in the United States over the last few decades, while student achievement has changed very little (Hanushek, 1996b). According to these critiques, the problem is not a lack of resources, but how resources are used:

The fundamental problem is not a lack of resources but poor application of available resources. Indeed, there is a good case for holding overall spending constant in school reform. Not only is there considerable inefficiency in schools that, if eliminated, would release substantial funds for genuine improvements in the operation of schools, but there also is a case for holding down funding increases to force schools to adopt a more disciplined approach to decisionmaking. Schools must evaluate their programs and make decisions with student performance in mind and with an awareness that trade-offs among different uses of resources are important (Hanushek, 1996b, p. 30).

Material Resources

There is considerable agreement among scholars that teachers and schools matter. As one scholar noted in his review of the literature, "Teachers and schools differ dramatically in their effectiveness" (Hanushek, 1986, p. 1159). Yet there is considerable disagreement over

what material resources impact student outcomes. Fiscal resources can be used to purchase an array of material resources in order to produce educational outcomes, including facilities (buildings, science and computer labs, etc.), smaller schools and classes, instructional materials (textbooks, computers and software, Internet services, etc.), and personnel (teachers, support staff, and administrators).

Economists attempt to determine what material resources contribute to educational outcomes by estimating educational production functions. By attempting to measure all of the resources used in the educational process and estimating the relationship between these resources and educational outcomes, these studies attempt to find which resources matter. Of course, educational production studies have a number of methodological limitations, including inadequate measures of all of factors that contribute to educational outcomes and that the estimated relationships between inputs and outputs are correlational, not causal. Despite the fact that more than 400 studies have been conducted, there is very little consistent evidence on which material resources affect student outcomes (Hanushek, 1986, 1996a, 1997).

One of the most studied and controversial resources, and the one that represents the largest expenditure, is teachers. More than half of public school expenditures are spent directly on instruction (U.S. Department of Education, National Center for Education Statistics, 2006, Table 156). Yet while most scholars agree that teachers have a considerable influence on student achievement, they disagree on what specific characteristics of teachers matter. Two types of teacher characteristics have been examined in the literature. The first has to do with teacher background characteristics, including degrees and coursework, credentials, and experience. These characteristics are typically used to make hiring decisions and determine teacher salaries, thus they can be considered to be material resources because schools have to spend more fiscal

resources to hire teachers with more experience and advanced credentials. Although a large number of studies have examined the impact of teacher background characteristics on student achievement (Darling-Hammond, Berry, & Thoreson, 2001; Rowan, et al., 2002; Wayne & Young, 2003; Wenglinsky, 2002), many of these studies suffer from methodological limitations, including a lack of control for student background characteristics prior to entering the classroom. A recent review of the research, which focused only on 21 studies that controlled for students' prior achievement and socioeconomic status, found evidence that "students learn more from teachers with certain characteristics," particularly teachers from higher ranked colleges and higher test scores, but the evidence is inconclusive regarding the effects of degrees, coursework, and certification, except in the case of high school mathematics (Wayne & Young, 2003, p. 107). This study suggests that the teacher background characteristics typically used to determine salaries have little systematic relationship to student achievement.

Teacher resources can also be used to reduce class size, which requires hiring more teachers. A recent review of research literature found that small classes generally improve student achievement, although the impact varies in a nonlinear fashion (Ehrenberg, Brewer, Gamoran, & Willms, 2001; Krueger, 2003). One of the largest and most widely studied experimental studies was in Tennessee, where classes were reduced from 22-27 students to 13-17 students (Mosteller, 1995; Finn & Achilles, 1999). A number of studies have documented both short-term and long-term benefits of small classes in Tennessee, especially for minority students (Finn, Gerber, Achilles, & Boyd-Zaharias, 2001).

Another resource is time. In 1963 psychologist John Carroll developed a model of school learning that posited learning as a function of: (1) aptitude, or the time students need to learn (which is inversely related to the quality of instruction and students' ability to understand

instruction); (2) opportunity to learn, or the time allowed for learning, and (3) perseverance, or the amount of time students are willing to spend on learning (Carroll, 1963; Carroll, 1989). The model suggests that some students need more time for learning than other students and that increased time allocated to learning can increase achievement (all else being equal). A number of case studies have documented how effective schools often devote more time to student learning (Gándara, 2000; Farbman & Kaplan, 2005). Yet, as the model suggests, simply increasing learning time will not necessarily increase student learning and, as yet, no rigorous experimental evidence exists documenting the impact of increased learning time. Increasing instructional time requires hiring more teachers or paying existing teachers for spending more time in the classroom.

Other material resources include support teachers, other professional staff (including administrators), professional development for instructional personnel, and instructional materials.

Human Resources

The existing research literature finds limited support for the impact of fiscal and material resources on student outcomes. Yet if there is widespread agreement that teachers and schools vary widely in their effectiveness, there must be other types of resources that distinguish between more effective and less effective teachers and schools. Cohen, Raudenbush, and Ball (2003) argue that conventional school resources—such as teachers' formal qualifications, books, facilities, and time—only offer the capacity to improve teaching and learning, but to do so requires the teachers' *personal resources*, which they define as their will, skills, and knowledge:

The instructional effects of conventional resources depend on their usability, their use by the agents of instruction, and the environments in which they work. When added

conventional resources appear to directly affect learning, it is because they are useable, because teachers and students know how to use them, and because environments enable or did not impede their use...If these ideas are correct, then when added resources lie outside the range of teachers' and students' knowledge, norms, and incentives, they will have no discernible effect (p. 132).

Similarly, Newman (1992) argues that teachers need to have a range of commitments and competences to guide practice and improve student achievement. The concept of human resources is consistent with the economic concept of human capital, which includes cognitive and noncognitive (perseverance, motivation, and self-control) skills (Heckman, 2000). It is also consistent with the literature on policy implementation, which has found that "policy success depends on two broad factors: local capacity and will" (McLaughlin, 1987, p. 172).

Human resources represent a second type of teacher characteristics that are not generally tied to teacher salaries, but that may be more important in improving teaching and learning in schools than such rewarded characteristics as credentials and experience. Yet if these characteristics could be readily identified, then schools could pay a higher salary to teachers who possess them (Schacter & Thum, 2004).

Social Resources

A final dimension of resources critical for effective teaching and learning are the resources embedded within schools that provide the institutional norms, incentives, and supports necessary for human resources to be realized or activated. A number of case studies have found that *social resources*, which represent the social relationships or ties among students, parents, teachers, and administrators, are a key component of effective and improving schools (Anness, 2003; Barnes, 2002; Bryk & Schneider, 2002; Elmore, 2004; Spillane, 2004). In their in-depth

study of school reform, Chicago, Bryk and Schneider (2002) argue that one particular social resource necessary for school improvement is *relational trust*, which represents the reciprocal, social exchanges among all the participants in the schooling enterprise that depend on respect, competence, personal regard for others, and integrity:

We view the need to develop relational trust as an essential complement both to governance efforts that focus on bringing new incentives to bear on improving practice and to instructional reforms that seek to deepen the technical capacities of school professionals. Absent more supportive social relations among all adults who share responsibility for student development and who remain mutually dependent on each other to achieve success, new policy initiatives are unlikely to produce desired outcomes.

Similarly, new technical resources, no matter how sophisticated in design or well supported in implementation, are not likely to be used well, if at all (p. 144).

Hoy, Tarter, and Hoy (2006) suggest that there are three social resources in schools—all of which reflect the collective views of teachers—that affect student achievement: an academic emphasis, collective efficacy, and trust in parents and students. Other institutional characteristics and resources may be necessary to develop and sustain an adequate level of social resources in schools, including a small size, more participative organizational structures, effective leadership, and district support (Bryk & Driscoll, 1988; Newmann, 1993; Spillane, 1996).

Resource Needs for Linguistic Minorities

In order to identify the resource needs for linguistic minority students and English learners, it is important to distinguish among their needs, the needs of all other students, and the needs of other disadvantaged students, particularly low-income students. That is, all students will need fiscal, material, personal, and institutional resources to receive an adequate education.

In addition, all low-income students, including many linguistic minorities, may require more and specific types of these resources to receive an adequate education. Finally, linguistic minorities may need different types of resources to receive an adequate education above and beyond the resources needed for low-income or other disadvantaged students.

For example, all disadvantaged students, many of whom enter school with lower achievement than other students, may require additional resources to achieve the same academic standards as other students who enter school closer to that goal. Those additional resources may be in the form of smaller classes, more instructional time, or additional academic supports like peer or adult tutoring. But linguistic minority students may need a different mix of resources, because they must learn an entirely new language and culture. Of course, many disadvantaged students from English-speaking homes may also need additional support in developing English language skills—a recent study showed that low income children are exposed to many thousands fewer words in English by the time they reach school, and argues that this linguistic deficit is at the heart of much of the achievement gap (Hart & Risley, 1995; 2003). There is little in the research, however, that has investigated the role of non-English language vocabulary in determining the overall linguistic competency of students. Given that most American schools do not assess students' native language abilities, vocabulary in the primary language is not often utilized as a resource for English learners, except in bilingual classrooms.

The National Literacy Panel concluded that to become successful readers, English learners must not only learn the key components of reading that all students need to learn—phonemic awareness, phonics, fluency, vocabulary, and text comprehension—they must also learn extensive English oral language skills as precursors to learning to read. Reading instruction may also follow a different path for these students (Genesee et al, 2006), requiring a

different mix of resources to support it. Similarly, all disadvantaged students may benefit from parental support programs, but the parents of linguistic minorities, many of whom are immigrants, may require more extensive support because they are less familiar with the American schooling system (Delgado-Gaitan, 1990). And the providers of those programs may need additional skills, such as the ability to speak the students' and parents' home language, to be able to effectively deliver the programs.

To meet some of the needs of English learners may simply require different types of resources rather than additional amounts. For example, to teach oral English and other aspects of English as identified in California's ELD standards, teachers will need different skills and knowledge. Similarly, teachers may need different skills, abilities, sensitivities, and knowledge of students' cultural backgrounds to effectively communicate with the parents of English learners, which includes more than simply the ability to speak their language.

Bryk & Schneider argue that:

...our research suggests that effective urban schools need teachers that not only know their students well, but also have an empathetic understanding of their parents' situations and have the interpersonal skills needed to engage these adults effectively (Bryk & Schneider, 2002, p. 139).

Distinctions between the resource needs of linguistic minorities and English learners, and the resource needs for all students, were evident in the recent five-year study of the impact of Proposition 227 (Parrish et al, 2006). As part of that that study, the research team conducted interviews and site visits in 66 schools in California that were "beating the odds" by demonstrating consistently higher performance for their English learners.¹¹ They found that

¹¹ Although these schools demonstrated higher achievement for English learners than most schools, the overall achievement level of these students still lagged considerably behind the achievement of English-only students.

some of the features and practices in these schools were the same ones found in all highly effective schools, such as shared priorities, high expectations, systematic, on-going assessment, and data-driven decision making. At the same time, school personnel identified other practices that specifically addressed the needs of ELs: “ensuring that teachers have knowledge and skills needed to support EL students, having in place systematic, carefully designed plans for provision of ELD instructional services, and deliberately fostering academic language and literacy development across the curriculum” (p. IV-1). Thus, it is clear that linguistic minority students—and English learners in particular—require some resources that are distinct from those of all other students, and all other low income students. The extent to which they also need additional resources, above and beyond those required for other low income students, and especially those from distinct English speech communities, is less clear.

Review of Cost Studies

A growing number of states are attempting to define an adequate education and provide the resources for schools to provide it (Augenblick, Myers, & Anderson, 1997; Duncombe & Yinger, 2005; Guthrie & Rothstein, 1999). At the same time, scholars have undertaken studies to estimate the costs of providing an adequate education, including the differential costs associated with providing an adequate education to students who are disadvantaged due to poverty, language background, and disability. In this section, we review the different approaches that scholars have used to estimate these costs, the limitations of these approaches, and the results from some recent studies.

Approaches to Estimating Costs

Four different approaches have been used to estimate the costs of providing an adequate education: (1) education production functions, (2) successful schools, (3) professional judgment panels, and (4) evidence-base.

Education Production Functions

One widely used approach estimates the costs of educating students based on spending and performance data from a current array of districts, usually within a particular state. These costs are estimated from a production function that includes student performance measures, pupil characteristics (such as poverty, EL status, and disability), educational inputs (such as teacher salaries), and geographic costs differences. By specifying a particular set of student performance measures, the models can identify the additional per pupil expenditures for districts to educate students with particular characteristics to the same performance level. These differential costs are referred to as *pupil weights* and generally range from .1, which denotes a 10 percent differential cost, to 1.0 or more, which denotes that the costs are twice as high or higher to educate disadvantaged students.

Successful Schools

Another approach is to identify so-called “successful” schools and districts that are currently achieving the designated achievement standard, eliminating schools at the extremes that may be particularly efficient or inefficient. Then, by controlling for student characteristics and excluding expenditures targeted to those students (poverty, bilingual, and special education), the analysis provides an estimate of the baseline or foundation cost of providing an adequate education. The differential costs of educating disadvantaged students can then be derived from additional expenditures targeted to those students.

Professional Judgment Panels

The third approach brings together panels of “expert” educators (superintendents, principals, teachers, resource specialists) who collectively design a series of educational programs for elementary, middle, and high schools of different sizes and with different student compositions to achieve a specified educational outcome. Then, with the assistance of the facilitators, the costs of the program components are estimated, yielding an overall per pupil cost estimate and a per pupil weight associated with poor, EL, and special education students.

Evidence-based

The final approach is similar to the professional judgment panel in that an attempt is made to identify the elements of a program needed to provide an adequate education. But instead of having the program elements derived from a panel of experts, the elements are derived from the research literature on “proven” practices (Odden & Archibald, 2001; Odden & Picus, 2004). Then, as with the Professional Judgment Panels, the costs of the program components are estimated.

Limitations

All of these approaches share some common limitations. First, they all define an adequate education based on commonly available data, particularly test scores that at best measure a limited number of cognitive outcomes. To the extent that schools are consciously pursuing other educational goals for their students—such as art, music, interpersonal and cultural competence that both students and their parents may desire and value—and devoting resources to achievement them, then these strategies may underestimate the resources required to provide this broader view of an adequate education.

Second, they also rely on limited and inadequate information on the nature and needs of various student populations, which may underestimate the differential costs of educating these students. For example, information on poor and low-income students is often derived from school information on students participating in the federal school lunch program, which can be very inaccurate, especially at the high school level where students are less inclined to participate. The population of English learners is also derived from school information on currently identified students, which may not provide accurate information on the larger population of linguistic minority students who require additional educational supports. Moreover, the resources needed to provide an adequate education to linguistic minority students and English learners will not only depend on the size of the population, but also on the strength of their English language skills, the number of other languages that are spoken, their concentration, and the specific language backgrounds of the students (Rumberger, Gandara, & Merino, 2006). Schools where the majority of English learners come from a single language background have a greater opportunity to address their needs, as they are more likely to have the language resources to communicate with students, parents, and communities. Schools serving a large number of languages face a greater challenge in grouping students for instruction by teachers able to communicate with them in their own language, and in locating and organizing staff and volunteers who can communicate with all the various language communities.

Third, the approaches provide little information on the nature or quality of the material resources that schools require, on how those resources can and should to be used efficiently, and on the requisite human and social resources that may be as important to providing an adequate education as money and materials. The first two approaches only provide estimates of baseline and differential costs and say nothing about the types of resources that may be needed. The

professional judgment panels and evidence-based approach do provide estimates of material resources, such as teachers, professional development, and instructional materials, but nothing about the qualities of the material resources that may be critical for providing an adequate education. For example, professional judgment panels staff instructional programs with fully qualified teachers, but a recent professional panel conducting an English learner cost study in Arizona “found the minimum teacher training standard insufficient” (National Conference of State Legislatures, 2005, p. 27). Other qualities of personnel—personal resources—are also ignored:

To begin with, we can specify personnel, but the quality, motivation, cooperative behavior, and other features of personnel will determine their effectiveness. The resource patterns say nothing about qualifications in these respects (Chambers et al., 2004, p. 407).

Similarly, professional judgment panels may designate a certain amount of professional development for teachers, but the nature and quality of that professional development may be critical with respect to whether it provides teachers with the skills they need to effectively teach the kinds of students they face in their classrooms. Finally, cost studies lack a theory of action as to how resources will be used and used efficiently to improve student outcomes.

Recent Estimates

A large number of cost studies have been undertaken using all of the approaches outlined above. Here we review a few selected studies to see how the estimates compare. First we will examine estimates of per pupil weights from several studies, comparing the weights associated with poverty and the weights associated with EL status independent of poverty. Second, we will review some descriptions of material resources from two Professional Judgment Panels (PJPs) in California to see the types of material resources used to compute per pupil weights.

Fiscal Resources

All of the techniques discussed earlier can be used to generate overall per pupil cost estimates and estimates of per pupil weights associated with poverty, EL, and special education status. We are particularly interested in comparing the weights associated with poverty to the weights associated with EL status independent of poverty. Since many English learners are poor, the important resource question is how much more, if any, does it take to educate poor EL student compared to a poor English-background student.

Some estimated weights are shown in Table 2. The first studies produced estimates for New York using two different approaches—the first one using the production function approach (Duncombe & Yinger, 2005), and the second one using PJPs (Chambers et al., 2004). The first study estimated a range of weights based on different techniques for making comparisons among districts and using different measures of poverty. Using Census data on poverty, for example, produced estimates of poverty weights ranging from 1.22 to 1.59 (when special education students are included). That is, these estimates suggest that to educate poor students to the same standard as non-poor students requires per pupil funding levels from 122 to 159 percent higher. Educating EL students, controlling for poverty and special education, requires funding levels from 101 to 142 percent higher still. Using subsidized school lunch data (which is a broader measure that includes both poor and low-income students) produced higher poverty weights—ranging from 1.36 to 2.15—but no additional EL weights.¹² In other words, the second set of estimates suggests there are no incremental costs of educating EL students beyond the costs of educating low-income students. The second study estimated per pupil weights for EL students that ranged from .18 for elementary schools to .20 for middle schools. It should be pointed out

¹² The higher weights using the broader population may capture both the effects of poverty and LEP status in the first set of estimates.

that the base funding level in the second study is much higher than the national funding level of \$7,904 in 2001-02 (U.S. Department of Education, National Center for Education Statistics, 2000, Table 162), which may reduce the need for extra expenditures for educating poor and EL students; though it leaves open the question of whether uniformly higher spending has any effect on closing achievement gaps.

The next study used the Professional Judgment Panel approach to estimate per pupil weights for educating two types of EL students in Arizona: low need EL students, who the panel defined as either poor with high English proficiency or non-poor with middle and high English proficiency; and high need EL students, who the panel defined as either poor with low or medium English proficiency or non-poor with low English proficiency. The per pupil weights for low-need EL students range from .24 to .30, while the per pupil weights from high-need EL students range from .48 to .61.

Table 2—Estimates of Per Pupil Spending and Weights for Poverty and EL Status

	Base	Poverty Weight	EL Weight
New York--Duncombe and Yinger (2005)			
Estimate using Census poverty		1.22-1.59	1.01-1.42
Estimate using subsidized lunch		1.36-2.15	
New York--Chambers, et al. (2004)			
Elementary school	\$10,072		.18
Middle school	\$9,899		.20
High school	\$10,443		.19
Arizona--NCSL (2005)			
Elementary school			
Low need ELs	\$4,198		.29
High need ELs	\$4,195		.38
Middle school			
Low need ELs	\$4,060		.30
High need ELs	\$4,049		.57
High school			
Low need ELs	\$4,214		.24
High need ELs	\$4,127		.48
California--Chambers, et al. (2006)			
Elementary school			
Panel 1			
Base model	\$10,315		
High poverty	\$11,562	.38	
High poverty, high EL	\$12,978		.38
Panel 2			
Base model	\$8,960		
High poverty	\$12,023	1.07	
High poverty, high EL	\$12,215		.05
Middle school			
Panel 1			
Base model	\$8,905		
High poverty	\$9,793	.29	
High poverty, high EL	\$10,243		.18
Panel 2			
Base model	\$7,899		
High poverty	\$10,179	.85	
High poverty, high EL			
High school			
Panel 1			
Base model	\$9,285		
High poverty	\$9,890	.17	
High poverty, high EL	\$10,060		.08
Panel 2			
Base model	\$7,035		
High poverty	\$9,352	.87	
High poverty, high EL			

The last study used two separate PJPs to generate two independent estimates of per pupil funding levels for several school configurations in California: a base model that represents the “average” school configuration for an elementary, middle, and high school in the state; high poverty schools with a higher concentration of poor (free and reduced lunch) students, but with the same concentration of EL and special education students; and high poverty, high EL schools with both a higher concentration of poor and EL students, but the same concentration of special education students. From the first and second estimates, it is possible to compute a per pupil weight for poverty, and from the second and third estimates it is possible to compute a per pupil weight for EL status. The results show that the poverty weights are mostly (and in some cases much) higher than the EL weights. The results also show very disparate estimates from the two panels. At the elementary level, for example, the first panel estimated identical weights of .38 for poverty and EL status, whereas the second panel estimated a per pupil weight for poverty of 1.07 and a per pupil weight for EL status of only .05. Also, the estimated costs per student in the base models differed as well. This reflects one of the criticisms of the PJP approach—that it can generate very different estimates of the costs of providing an adequate education, probably owing to very different knowledge and experience of the panel members.

Material Resources

One of the benefits of the PJP approach is that the panel first identifies the elements of an educational program and then determines the material resources to provide it. The panels are not required to identify specific programs, simply alternative features of a basic program in terms of resources. For example, the panel may decide that the best way to provide an adequate education to more disadvantaged students is to reduce class sizes for those students or to extend learning time by either lengthening the school day or the school year.

Differences in the resource allocation decisions are illustrated by comparing the two PJP results for the recent California study. The material resources allocated to the three configurations of elementary schools by the two panels are shown in Table 3. The first panel specified a class size of 20 to 1, and hence the same number of classroom teachers for all grades in all three configurations. However, they specified a higher number of support teachers and instructional aides in the high poverty and high poverty/high EL configurations. They specified a seven-hour school day for all students, and an eight-hour school day for all disadvantaged (poor) students. They also specified a 190-day school year for all students, and another 10 days per year for teacher planning and coordination. Finally, they specified a small number of disadvantaged students to receive preschool and early childhood programs. The per pupil weight for ELs was .38 in the first panel because the panel made substantial increases in the instructional personnel beyond those specified for a high poverty school, primarily for additional support teachers and teacher aides.¹³

The second panel allocated resources much differently. The panel specified larger classes for grades 4-5 than for K-3, and fewer instructional and non-instructional personnel than the first panel. They specified a shorter school day (6.5 hours) than the first panel, but a longer school year (200 days) for most students, with a smaller number of disadvantaged students having a longer school day than was specified by the first panel. Yet they also specified that more students would participate in preschool and early childhood programs. The EL per pupil weight was only .05 because the panel did not specify any additional instructional personnel beyond those specified for a high poverty school.

¹³ This begs the question of using bilingual teachers instead of aides and support teachers.

Table 3—Resource Allocations for Elementary Schools, California Professional Judgment Panels

	Base	Panel 1 High Poverty	High Pov/EL	Base	Panel 2 High Poverty	High Pov/EL
School characteristics						
Enrollment	516	516	516	516	516	516
Percent poor	57	89	89	57	89	89
Percent EL	28	28	60	28	28	60
Percent Spanish ELs	79	79	90	79	79	90
Percent special Education	9	9	9	9	9	9
Program and resources						
1. Class size						
K-3	20	20	20	20	15	15
4-5	20	20	20	24	19	19
2. Personnel						
Classroom teachers	25.5	25.5	25.5	24.0	32.0	32.0
Support teachers	7.0	7.0	9.0	8.0	9.0	9.0
Instructional aides	6.2	6.6	18.9	4.8	5.9	5.9
Substitute teachers	1.6	1.6	1.7	1.7	2.2	2.2
Total instructional personnel	40.3	40.7	55.1	38.5	49.1	49.1
Instructional and pupil support personnel	10.0	14.0	14.0	1.6	3.5	3.5
School administration	5.0	5.8	5.8	4.9	6.4	6.4
Maintenance and operations	1.0	2.0	2.0	2.5	4.5	4.5
Total non-instructional personnel	16.0	21.8	21.8	9.0	14.4	14.4
Professional Development (days/year)	0.0	0.0	0.0	30.5	41.0	41.0
3. School day (hours)						
Instruction						
All students	7.0	7.0	7.0	6.5	6.5	6.5
Disadvantaged students	8.0	8.0	8.0	8.0	8.0	8.0
Number of students served	(294)	(459)	(459)	(103)	(206)	(206)
Number of days served	(190)	(190)	(190)	(105)	(105)	(105)
Teacher planning and coordination	0.5	0.5	0.5	0.75	0.75	0.75
4. School year (days)						
Instruction						
All students	190	190	190	200	200	200
Disadvantaged students	190	190	190	200	200	200
Teacher planning and coordination	10	10	10	9	9	9
5. Preschool program for 4 year olds (#)	43	77	77	65	86	86
6. Early childhood program for 3 year olds (#)	3	3	9	65	86	86

SOURCE: Chambers, Levin, & DeLancy (2006).

All of these approaches specified the same level of adequacy for all students, and thus did not consider different standards for EL students as we suggest above.

What Can We Learn from PJP Studies?

The one conclusion that can be derived from the PJP studies is that there is little consensus on either the amount or types of additional resources needed to educate linguistic minority students above and beyond those needed for other disadvantaged students, particularly poor and low-income students. In part, this appears to depend on how the population of economically disadvantaged students is measured and, consequently, the size of the population. If *economically disadvantaged* is defined simply in terms of poverty, which is a narrower definition—as in one set of estimates for New York (Duncombe & Yinger, 2005, Table 6)—then additional resources may be needed to educate linguistic minority students because many such students are not poor (see Table 6). However, if *economically disadvantaged* is defined in terms of students of both poverty and low-income (as captured by students enrolled in the federal school lunch program), which is a broader definition—as in another set of estimates for New York (Duncombe & Yinger, 2005, Table 6)—then no additional resources may be needed.¹⁴ But even when a broader and more inclusive definition of *economically disadvantaged* is used, a lack of consensus remains. One panel of experts in the recent California PJP study (Chambers, Levin, & Delancy, 2006) concluded that the additional resources needed to educate poor and low-income English learners would equal twice those needed to educate poor and low-income English-background students. Yet another expert panel concluded that hardly any additional resources would be needed to educate English learners beyond those needed to educate poor and low-income students, in part because the per pupil weight for poor and low-income students was much higher than the corresponding weight in the first panel.

¹⁴ In California, for example, 19 percent of students enrolled in grades 1-4 were poor according to estimates from the 2005 American Community Survey (see: <http://www.census.gov/acs/www/index.html>), whereas 49 percent of students enrolled in California public schools participated in the free and reduced-lunch program (see: http://data1.cde.ca.gov/dataquest/APIBase2006/2005Base_StApiDC.aspx?allcids=0000000).

Case Studies of Effective Schools with High EL Concentrations

While cost studies provide estimates of the level of fiscal and material resources needed for schools to provide an adequate education for English learners, they do not provide any insight into how those resources can and should be used to achieve that level of performance. To gain such insight, we undertook case studies of a small sample of California schools that have already demonstrated relatively high levels of performance for their EL students, and queried them about how they spent their funds to achieve their academic results.

Data Collection Methods

Schools were selected for study based on having been nominated in an earlier selection process by the AIR/West Ed team that conducted the state-mandated Proposition 227 study, as well as by reviewing state data on high performing schools at the elementary, middle, and high school levels. Within the confines of both time and human resources, it was decided that the team would conduct five case studies: two at the elementary level, one at middle, and two at high schools. In addition to collecting background data (e.g, school report cards, earlier interviews that had been conducted in some of the schools by the AIR/West Ed team), at least one principal, vice-principal, or other lead administrator, and two teachers nominated by the administration for being knowledgeable about school operations, were interviewed in person or by telephone.

We established an initial list of schools that had relatively high scores for their EL students on state testing (as a measure of “success”) and that represented both geographic and curricular diversity. This initial list of ten schools was pared down to five to represent the greatest diversity possible. Thus, schools in the study spanned curricular approaches from transitional bilingual to English-only, included some schools with more than one major language

group, and in five different school districts. These districts were located primarily in the general southern California area, which is home to most of the state’s EL students, with the exception of one northern California school. Demographic and performance information for the five schools is shown in Table 4.

Table 4—Demographic and Performance Information on Case Study Schools

	Elementary A	Elementary B	Middle	High A	High B
School characteristics					
Enrollment	346	957	851	2925	2740
Percent free and reduced lunch	94	96	82	65	14
Percent Hispanic	54	79	83	97	50
Percent Asian	40				
Percent EL	59	69	59	52	21
Percent Spanish EL	61	85	92		
School performance					
API overall	835	794	706	642	701
Similar schools rank	10		10	9	6
API EL	811	775	673	597	619
Percent reclassified FEP	22	14	21	25	22
Statewide average performance					
API overall	738	738	703	671	671
API EL	662	662	611	586	586
Percent reclassified FEP	10	10	10	10	10

SOUCRE: California State Department of Education, *Dataquest*. Retrieved September 30, 2006 from: <http://data1.cde.ca.gov/dataquest/>.

Based on both past studies that have incorporated school site interviews, as well as the literature on school costs, the research team developed interview protocols (see appendix) for both principals and teachers. The protocols were reviewed in team meetings, and modified accordingly. Given the short turn around time on the study, there was no opportunity to pilot the protocols.

The interviews focused on school organization, goals, curriculum, assessment, parent and community outreach, and classroom instructional practices with the goal of identifying operations, practices, and materials that implicated specific resource needs above and beyond those typical for a public school. In short, we were interested in knowing what, specifically, these schools had done to produce the results they had achieved with EL students, and if these

interventions had costs associated with them. We also probed for where their needs were unmet and what they felt it would take to meet those needs. It is worthy of note, as well, that schools with relatively high API scores for English learners can still have relatively low performance on state standards tests for these students because the API is a composite of scores, rankings, and progress demonstrated across grade levels. Disaggregating these data can reveal a somewhat different picture of achievement for ELs, as shown below.

Altogether, 15 interviews were conducted by a senior researcher/faculty member or by a graduate student researcher. The average interview lasted about 1-½ hours and was tape recorded (with interviewee's permission) and transcribed.

The Case Study Schools

Elementary School A

Elementary School A is located in northern California and serves a relatively small population of about 350 students in K-5. About 54% are Latino and about 40% are Asian, with small percentages of other ethnicities. About 60% of the students are English learners, and the principal characterizes the school as an “immigrant school.” The school offers three strands of programming: ELD, English plus Chinese, and English plus Spanish. Both the Chinese and Spanish programs are transitional, with students expected to be in English-only instruction by the end of 3rd grade. The school's scores are exceptionally high on math CSTs, with about 80% of students proficient at 3rd grade, but much lower in English Language Arts, with about 30% proficient at 3rd grade. For ELs at grade 3, 74% reach proficiency in math, and 26% in English Language Arts. By grade 5 there are an insufficient number of students labeled as ELs to provide reliable percentages. The school has a relatively high percentage of certified bilingual teachers, but does not have a goal of biliteracy for students over the long run. The primary language is

used to help transition students into English and to build self-esteem. For the Spanish speakers, primary language instruction is seen as very important for teaching reading, as Spanish is so consistent in form and phonetics.

Because the school is small, it is not able to generate many additional resources. It has no librarian, no counselors and few support staff other than one resource teacher, and one paraprofessional, who is bilingual in Spanish. Class sizes are about average for the state, with 20 in the lower grades and 28 in upper grades. All of its teachers are fully credentialed and on average its teachers have more experience than is typical for teachers in this state. It had the same principal for 10 years, who has clearly been a strong leader with a very specific vision for the school—that EL students are as bright as any other students, and that all students would meet the state’s high standards. To accomplish this she is said to “push her teachers.” Like all the other schools studied, ES-A is organized around building strong literacy. Considerable time is spent in tracking students’ progress and in preparing them for tests. Teachers note a lot of attention to “test prep.”

Elementary School A’s unique expenditures

This is the only one of the five schools studied that did not routinely offer extra instructional time, and the principal notes that “if we are going to continue with the demands that we have, or to meet the standards. . . . six hours is really not adequate.” It has several teachers who are trained in Reading Recovery, and these teachers, especially the resource teacher, dedicate time to working one-on-one with students in the early grades to bring them to grade level in reading. Some reorganization of classroom time has been dedicated to this, in addition to a good part of the resource teacher’s time.

School personnel have long sought grants to support an arts program, and students receive considerable enrichment in visual arts, dance, and music as a result of partnerships with various community arts organizations. They have also taken advantage of science programs available through museums and other community entities.

This school had few identifiable additional costs associated with instructing English learners. The source of their higher achievement appeared to be related to three factors: (1) this small school has a cohesive faculty that follows the lead (and pressure) of a strong principal who provides a consistent message about the school's goals; (2) the presence of a large number of Asian students whose scores pull up the average for the school¹⁵; and (3) much specific attention to test preparation.

Elementary School B

Elementary School B is located in southern California and serves over 950 students in K-5 on a 4-track year round calendar. The population is 78% Latino and 16% Asian and Filipino. Almost 70% of students are EL. The school offers an English-only program and when both principal and teachers are asked about goals for students, they are clear that getting students to English proficiency is their primary goal. The school relies almost exclusively on several packaged curricula—Open Court, Into English, and Language Arts Today. Teachers receive substantial professional development in using these curricula, but relatively little professional development in other curricular areas. Seventeen percent of teachers in this school are first year, and the overall years of experience of teachers is somewhat lower than for ES-A.

Standards test scores are higher in English Language Arts at ES-B, with about 49% of 3rd graders reaching proficiency, but a bit lower than ES-A on math, with about 70% of 3rd graders

¹⁵ EL test data are not reported by language group in school report cards, so we must surmise from the number of EL students, and the percent of each language group who are EL, as well as the test scores by ethnicity what the relative impact of Asian and Spanish speakers is on the overall EL scores.

achieving proficiency. However, by comparison to the state as a whole, this school is performing well. With respect to English learners, however, 29% are able to reach proficiency in English Language Arts and 59% in math at 3rd grade. With each subsequent year, the percentage reaching proficiency in both ELA and math declines. As with ES-A, teachers note that the principal holds high standards and expects all teachers to meet them. Considerable time and attention is given to tracking individual student progress on tests, and on preparing students for test taking.

Elementary School B's unique expenditures

Because it is a larger school, it is able to generate more resources than ES-A, but also because it has done well enough to stay off of the Program Improvement list, it does not receive additional program improvement funds. The principal has chosen to use the resources she receives largely in providing more instructional time for students. The school has two resource teachers (literacy and math) who support classroom teachers largely in the adopted curricula, a social worker supplied by the district, and an immigrant students program that provides newcomer education during intersession times (20 days a year). Students who are falling behind attend after school tutoring for one hour each day with “coaches” (high school and college students paid an hourly wage by the district), Saturday school (about 300 students for 4 hours), and intersession (20 days at four hours per day during their off-track). According to the vice-principal, all funds for this additional time are provided out of the district's “Beyond the Bell” fund that pays for after school and extended day programs. The school does not make the payments and therefore is not aware of the specific costs. In fact, the district appears to exercise strict control over expenditures of funds, allowing relatively little discretion to principals. All in all, lower performing students may receive significantly more instructional time than the typical

California EL student. Evidently the bulk of this time is spent on literacy and math activities in the school-adopted curricula.

Middle School

Middle School serves about 850 7th and 8th graders in Orange County. About 80% of the students are Latino, about 11% Asian, with small percentages of other ethnic groups.

Approximately 60% are English learners. Overall, about 43% of students score at the level of proficient in English Language Arts in 7th grade, and 39% in 8th grade; on Math CSTs, 40% of 7th graders are proficient, but only 22% of 8th graders (which is probably related to the fact that there are high percentages of proficiency in algebra (71%) which draws off the most able students).

While the school has made its AYP targets and thereby stayed off the school improvement list—even with a challenging, low income population—its test scores reflect only moderate success with its Latino and EL population. As might be expected, only 14-17% of ELs are able to pass the English Language Arts standards test at the level of proficient, but also only 17-18% of both 7th and 8th grade EL students were able to pass the math or science tests at a level of proficient. Asian students in this school do exceptionally well, and while only a little more than 10% of the population, their very high scores pull up the average for the school. The goals of this school for its English learners are quite specific, as articulated by the principal: “...all ELs will advance one level per year in proficiency, until they are English proficient according to the CELDT.” The instructional approach is English-only with no support in primary language.

Middle School’s Unique Expenses

What does this middle school do to support its EL students? Four days a week the school provides an extended day: one half hour before school and one hour after school, and hires teachers to conduct these classes. It has five EL teaching assistants who travel to classrooms to

work one-on-one, and in small groups with EL students. Teachers are beginning school 10 minutes earlier every day to “buy” the additional minutes to have 18 early release days for collaborative work among teachers. The school provides late buses so that students can stay after school for the additional classes. It was not clear how many students participate in the extended day, but during the last school year 21 of 34 teachers in the school participated in offering these classes. AVID plays a strong role in the school, with AVID tutors providing additional support for EL students. The principal indicated that almost all budget decisions were made at the district level and she had little idea of the costs of additional services the school provided or their funding sources. In reality, it is somewhat surprising that scores at this school are not higher for EL students given the amount of additional instructional time that is offered

High School A

High School A serves nearly 4,000 9th to 12th grade students in the southern California area. The school is virtually all Latino with about half of the students labeled as English learners at any one time. The school has been in the school improvement program for failing to meet its API goals, but has recently been removed as a result of making significant progress. Nonetheless, it struggles. At grade 10, 21% of students in the school pass the English Language Arts CST at proficient or above, but only 6% of EL students do; and in Algebra 2, 15% of all students reach proficiency, but only 8% of ELs do. Similar discrepancies are found across subjects and grades. As poorly as EL students perform overall on standards tests, they do much better at passing the high school exit exam (CAHSEE). In fact, they do surprisingly well. While 68% of all students passed the English Language Arts portion in 10th grade, more than half—51%—of ELs also passed; and with 77% of all students passing the math portion, 67% of ELs also passed. Teachers at this school have a little more experience than the average California

teacher and have worked at this school about three years longer on average than teachers in the typical school in the state. The school also has a relatively large number of paraprofessionals who provide support for the classroom teachers. Observers report that the school is extraordinarily well-maintained, orderly, and pleasant to be in. The principal is a long time district employee having been at this school for many years. He is near retirement, but has given considerable thought to what it takes to meet the needs of English learners. This was the first principal to articulate the critical importance of meeting the affective and non-cognitive needs of students, as well as their cognitive needs. He feels strongly that schools need programs that address issues of behavior, cultural adaptation, and navigating U.S. society. Also, like High School B, this school has a lot of additional courses developed to meet the special needs of English learners. In interviews with both the principal and vice principal for curriculum, it was clear that the school was organized around literacy, and almost all programs were geared to support the strong literacy focus. The instructional program is in English, with primary language support via classroom aides or classroom teachers where possible. However, the school strongly encourages bi-literacy by enrolling students in Spanish for Spanish speakers for two years and then pushing them to take AP Spanish and sit for the AP test. The principal places a premium on hiring bilingual teachers, counselors, and other staff to the extent possible.

As a result of being an IIUSP school in the past, High School A received substantial supplemental funding for a few years. With these funds the school purchased additional teaching support, time for teachers to collaborate, and an extra period a day for ninth graders to work on language skills. Throughout the interview, the principal lamented the loss of so many of the supports that he argued had allowed the school to come out of underperforming status. Just as other schools reported the lack of logic behind their having to scrimp and “make do” with

insufficient resources because they had *not* been designated as underperforming, High School A principal pointed out the irony that by doing better, they lost the resources that got them there. Of course, because the school is so large, it is able to generate more funds, and these are augmented by routine grant writing for special projects. This district, unlike most of the others, provides a \$1,500 stipend for teachers who hold the bilingual credential. This is paid by the district. Others noted the inconsistency at their campuses of paying classified personnel—clerical and janitorial staff—an extra stipend for speaking another language, but not doing the same for the teachers.

High School A's unique expenses

As noted, High School A provides a number of different course offerings to augment the standard curriculum and to support the learning of EL students. Among these is a speech class that gives students the opportunity to prepare and give talks in front of the class. This is an effort to help students be more comfortable with talking in English in front of others. The first two years of the school (9th and 10th grades) are organized into what they call the Fundamental School Academy of Excellence, which according to the principal, “emphasize[s] as much as we can literacy skills, basic skills, behavior, character development, the motivation of students. . . .” The principal later explained his notion of character development as “politeness, knowing how to work and talk to the opposite gender. All of those kinds of things are also part of our responsibilities to teach them at school. . . .my vision is to do more of that, but I can’t because it takes time.” The principal believes that the school should provide many opportunities for students to engage in extracurricular activities to be able to engage naturally in English. He attempts to provide numerous clubs that attract Latino students, such as MECHA.

There are seven counselors at the school, half of whom are bilingual, and this is two more than the district provides. The principal has invested Title I and bilingual funds to buy additional counselors who are bilingual, which reduces the counseling load from about 750 to 1 to about 550 to 1. Counselors also coordinate parent meetings, which he would like to have another person do, if he had the funds.

Students who fail classes, and many do, in part because of language issues, have been invited to repeat the courses through before- and after-school classes. This was provided by IIUSP funds, and the principal is now trying to find funding to continue this practice. IIUSP money also paid for twelve teachers to do specific tutoring with students. He has not been able to replace this.

Literacy is supported in a variety of ways, in addition to the speech program. The library is considered a key resource for the school and it is half digitalized, using computers that are now growing old and need upkeep and replacement. Most were purchased with one-time state grants, and so there is no funding for this purpose. Another use of computers at this school was to keep in contact with parents, and parents were automatically notified of student absences, homework, etc. via telephone by the computer. Of course teachers need to input this information through their own computers. It was also noted that because the library serves students who speak two languages and who come to school with widely differing levels of education, the library needs many more and varied books than a typical high school library would have, and it needs more assistants to help students use the library materials.

Professional development is considered key in this school—as it was in all the schools we interviewed—to making the educational program work, and the principal believed that collaboration is an important part of that professional development. As with several of the

schools we interviewed, administration and teachers had come to the conclusion that the best professional development was in-house, using the talents that existed on the campus and sharing knowledge. But, as the principal pointed out, collaboration takes time, and time is money. He needed the time to release his teachers for collaborative work, and he needed teacher mentors to assist, model, and train other teachers in developing stronger classroom skills.

Safety is a key issue in this school. Housed in an urban environment with all the attendant problems, the principal felt that it would not be possible to teach and learn if teachers and students did not feel safe in their school. To this end, the district provides a full time police officer located at the school, and working with the district, the principal also has five security guards on campus, and about eight parents who roam the campus, keeping track of what is going on. All of these individuals are paid, at different pay rates, but a substantial investment is made in security.

Finally, the principal believes that the general condition of the campus, and especially the landscaping, is critically important to how both students and faculty feel about being there. He is careful to provide funds to maintain the campus landscaping as he argues that it gives a good impression of the school and makes people feel good about their environment. Observers commented on the exceptionally attractive campus and the positive image it portrays. This, however, comes at an additional cost.

High School B

High School B is located in the far south of the state, and serves a very diverse population of approximately 2750 students. Slightly over half of the students are Latino, and another 37% are White, with the balance of students divided among several different ethnic groups. Less than 20% of students are English learners, though many come from Mexico with substantially strong

educational backgrounds. In the 10th grade, 32% of students reach proficiency in English Language Arts, however 1% of English learners do; and while 63% of students taking Algebra 1 reach proficiency, there are no EL students enrolled in Algebra 1. Among those students enrolled in geometry at grade 10, 18% reach proficiency on the CST, but only 4% of EL students score at the level of proficient or above. With respect to the high school exit exam (CAHSEE), at the 10th grade level, 79% of all students pass the English Language Arts portion, but only 34% of ELs do, and 81% of all students pass the math portion, with only 45% of ELs passing.

The school has a higher average class size, about 34 per class, but it also has a higher than average number of paraprofessionals to provide assistance in the classroom. Like many of the other schools we interviewed, High School B is organized around literacy, and they place a strong emphasis on writing. The WRITE Institute is a major partner with them in providing ongoing professional development for teachers in literacy. The principal noted that she believed professional development was as important for administrators as it was for teachers and that she tried to attend as much professional development as possible to strengthen her own skills.

The principal felt that it was especially important in addressing the needs of EL students, to distinguish between those who were long term ELs and needed strong academic support, and those who were newcomers and needed more orientation to U.S. schooling and rapid English acquisition, but often also needed to be advanced in their studies. For this reason she has invested in a language assessor. Teachers at this school also described the school as having a goal of biliteracy for as many students as possible. As one of the ELD teachers put it, “If they graduate from here as a 12th grader. . .but still a 7th grade level of Spanish, we haven’t done our job. They are not prepared to compete in a global economy. When people say they want a bilingual employee, they don’t mean they want someone who can speak a rudimentary

elementary school amount of Spanish. They mean well educated.” To this end, the school moves as many students as possible into the Spanish for Spanish speakers classes, and on to AP Spanish.

High School B’s unique expenditures

In an effort to better place students in appropriate curriculum, the school employs a language assessor whose job it is to assess all EL students regularly and interpret the findings for teachers. This person is paid with state EIA funds. As noted, the school also invests heavily in classroom aides to support teachers, especially with language skills. The school also pays for high tech translation services for all parent meetings—parents can use headsets to have all business translated for them. After-school tutorial help is also paid for out of a state-funded source.

The principal also has also been moving money around to fund a fifth year for students who are on track, making good progress, but need an extra year to complete their studies for the diploma. This is a costly innovation, but one the principal feels is critical for those students who must still learn English while in high school. She invests in a reduced class size for the beginning ELD classes where she believes students need more one on one help. This school also provides a lot of additional courses to support EL students, such as a special ELD class paired with each English class, so that students take two hours of English instruction, one geared toward supporting the instruction in the mainstream class.

Like almost all of the schools in this study, at HS-B they also complained of aging computers with insufficient funds to replace, repair, and update computers and software. Some expenditures go into this as the school is also relying on “credit recovery,” or opportunities for students who fail courses to take them online, or through independent study outside of normal

school hours. This requires computers that are in working condition and that have adequate software.

The largest amount of funding for professional development in this school goes to release time for teachers to participate in WRITE Institute work, rather than for the collaboration time that we saw in the other schools. The principal finds collaboration to be very important, but has chosen to put her money into the ongoing professional development activities of the WRITE Institute.

Finally, about \$10,000 per year is invested in the “Teleparent” system that contacts parents, in their home language, with information about school events, particular concerns or issues with their children, notification of students absences, and anything else that the school or teachers want to communicate with parents. They find this to be essential to their goals of keeping parents informed and involved in their children’s education.

Among the things the principal felt she needed, but could not afford, were: (1) more materials for a newcomer program to help students new to the country and the school to adapt, and to introduce them to more cultural, as opposed to purely academic, material; (2) more access to professional conferences for herself and her teachers. (Several teachers at this school and at others mentioned that professional conferences, such as CATESOL and TESOL, were very helpful to them in developing their skills for working with EL students); (3) social integration mechanisms—sports, clubs, activities, field trips. (Like the principal at HS-A, this principal felt these mechanisms were critically important to help students become integrated in the school and amongst their peers); (4) funds for someone to do grant writing and to help identify funds that might be available to support the school.

It was evident that having a much smaller school than HS-A placed this principal at a certain disadvantage in generating funds to support more programming for EL students.

Summary

There are several themes that emerge from the 15 interviews with teachers and principals in the case study schools:

(1) Even schools that were doing relatively well by overall test scores, were not doing as well for EL students, and every school could point to resource needs that would help them do that job better. The great irony was that schools were trying to keep off the underperforming list, but in doing so, they were cheating themselves out of resources that could help them meet their goals. At the same time, getting off the list, and thereby losing funding, felt like the proverbial “no good deed going unpunished” by the schools.

(2) Larger schools are able to access more resources simply because of increased ADA and funding for other special programs on a per student basis. The movement towards small schools needs to consider the financial downsides of having fewer students generating specialized funds.

(3) Additional time is critical. Catch-up cannot normally occur within the confines of a 6-hour day, and all but one of the schools had dedicated resources to lengthening the school day and/or year. The one that had not—because it had no resources to expend on this—felt that it could not maintain its current achievement levels without additional time.

(4) Non-cognitive variables are very important, and receive relatively scant attention because of lack of funding. But teachers and principals thought that motivation to achieve, ability to integrate socially, and self-confidence as a learner, were critical for their EL students to develop, and would help them achieve at higher levels.

Computers are critical resources, especially for EL students, where they may need to catch up with lost units because of coming in late, or getting behind. The computer provides the opportunity to do this catching up outside of class or school, but in a similar time frame. However, funds to update and maintain computers are not available, and this becomes a drain on the core budget.

(5) Schools serving EL students need libraries and materials that span more than one language, and often many grades, because of the diversity in backgrounds of students. They also need books and materials in primary language that can go home to help parents support their children's homework or exploratory reading. Schools also contend that more investment needs to be made in materials, and the people to help students access them.

(6) Communication with parents is critically important and schools used various strategies, but almost all required additional resources—translators or translating machines, “Teleparent” technology, funds to support meetings by paying professional staff to be present, and funds to provide materials and snacks for parents.

(7) With respect to professional development, collaboration was a need that almost all respondents commented on—the need to share knowledge and skills with each other, and also the opportunity to plan and organize curriculum both horizontally among peers at the same grade level, and vertically among teachers serving the same students in the EL program. There simply was not enough time available to do this, and finding any more time was very costly because of the need to provide substitutes for the times that teachers were out of the classroom.

(8) Safety is a critical issue for schools in low income areas. Especially at the middle and high schools, those schools must be made to feel safe for parents, students, and school personnel. This appears to require additional investments in security personnel. A sense of

safety is also conveyed by having a well-maintained, attractive environment. To this end, some principals talked about expending funds on maintenance of the grounds, landscaping, etc.

(9) Whether a school had a primary language support program or not, and independent of the teachers' and principals' philosophical stance with respect to bilingual education, every school needed bilingual personnel—in the office, among ancillary personnel like nurses, social workers, and counselors, and in the classroom, whether it was the classroom teacher (less expensive) or through classroom aides (more expensive), students and families needed to be communicated with, and needed to be understood. Few schools (districts) paid a stipend to teachers, though most did pay extra to classified personnel for additional skills.

(10) Many people pointed out that what made their schools work was the close collaboration and positive feelings among faculty—they commented that everyone works really hard and really cares about kids. Good faculty must be recruited and retained. The strength of the leadership in the school, the environment in which teachers work, and the compensation they are provided, are known to be key features in recruiting and retaining teachers. All other things being equal, school districts that can pay more for specialized skills, like bilingualism, probably can attract more qualified people.

(11) Although interviewees were asked a number of questions about assessment, their responses focused almost exclusively on the extent to which they prepared for the current assessment regime. The one exception was High School B, which had employed a person to conduct primary language assessment and argued this was critical to their goals of retaining and graduating English learners. It must be remembered that these schools were contacted because they had experienced some success with the accountability system in place, and it is therefore not surprising to find that they were spending a great deal of time and resources in responding to that

system. We might have received a more critical stance on assessment if we had interviewed people who were not as successful in meeting the demands of the system.

We consulted the qualitative findings of the Parrish et al (2006) study of the implementation of Proposition 227 in California, in which 66 school leaders were interviewed to determine what they considered to be the most important inputs leading to their success with English learners. We found great commonality at a general level with the findings of that study. For example, the Parrish et al study found that the three most highly ranked inputs were (1) well-trained teachers who were collaborative with one another and who received strong professional development; (2) appropriate curriculum and instructional materials; and (3) a shared vision for the education of EL students (this was typically interpreted as having shared high expectations). These were all things that were mentioned frequently by our respondents as well, but as we were interested in the program elements that implicated additional costs, we dug a little deeper into our interviewee responses to probe for detail. What we found was that skilled teachers were identified as individuals with special characteristics for working with EL populations, as opposed to simply holding the appropriate credentials. According to our respondents these were teachers who cared deeply about the students and often identified with them. Collaboration—and the time for it to occur—was also a commonly mentioned element in our interviews. Appropriate curriculum and instructional materials, we found, went beyond the classroom materials to the availability of a wide range of books and materials geared to different learning levels and languages in the library, in the computer lab, and available for parents. Finally, the shared vision mentioned frequently in the Parrish study was also commented upon often by our interviewees, but there was additional focus on the importance of creating a safe and inviting atmosphere in the school for both students and parents; this implicated factors such as security personnel—

especially in high schools—and school enhancements, such as special attention to maintenance of the school grounds.

Resource Needs to Provide an Adequate Education for Linguistic Minority Students

While we posed several standards that might be considered for an adequate education for linguistic minority students, in reality, neither the schools we studied, nor the literature we reviewed provided much direct help in isolating the different costs that might be applied for each standard. None of the schools studied provided a true biliteracy program, or considered the costs of achieving biliteracy, or even what the cost differences might be between providing English-only instruction as opposed to instruction with primary language support. Nor do existing studies consider longer term support for language minority students who test as English proficient but who receive limited exposure to formal English outside of school. Moreover, there is little evidence that programs are actually closing achievement gaps, and considerable evidence that given current resources and strategies it is impossible to do so for very many students (Rothstein, 2004; Berliner, 2005). Consequently, we do not attempt to elaborate on the costs associated with Standard 1, as it is too minimal, or Standard 3 because those costs are unknowable within the confines of this study.

We instead draw on existing research (see Olsen, 2006 for a recent review) as well as our case studies to first describe the elements of an educational program that would be needed to achieve Standard 2—English proficiency *and* grade level proficiency in all subject areas; and Standard 4—English and academic proficiency plus biliteracy. Both of these standards represent a level of education for English learners and linguistic minority students that would make them eligible for the same postsecondary opportunities that middle class English speakers can expect

to receive from their public schools. Then we identify the resources that would be needed to provide such a program.

What does a Standard 2 Education for English learners and LM students look like?

An adequate educational program for linguistic minority students would contain a number of elements. The specific elements would not only depend on the goals or standards of the program, as we discussed above, but also on the characteristics of the LM population at the school and on the school and district context. Salient characteristics of the LM population that would affect resource needs include family background (income and SES), the number of years in the U.S., age and grade level of the students, native language proficiency, and initial English language proficiency. For example, poor LM students with low initial levels of English proficiency would generally need more resources than non-poor LM students with high initial levels of English proficiency (see NCSL, 2005).¹⁶ Schools with LM students from a single language background, such as Spanish, may need fewer resources than schools with LM students from many language backgrounds (Rumberger, Gándara, & Merino, 2006).¹⁷ Thus, there is no single, prescriptive educational program appropriate for all schools; rather, the instructional program would need to be tailored to the needs and conditions of each school. Nonetheless, all programs would contain many of these elements:

(1) A high-quality preschool program

¹⁶ In California, 39 percent of English learners and 54 percent of LM students were enrolled in the secondary (grades 6-12) level in 2005 (see Table 1). Among secondary students, 24 percent were enrolled in U.S. schools for less than 4 years and of those, only 32 percent were considered proficient in English based on California English Language Proficiency Test (Based on California Department of Education data from Dataquest, retrieved December 30, 2006 from <http://data1.cde.ca.gov/dataquest/>).

¹⁷ In California, 53 percent of the schools (enrolling 61 percent of the EL students) in 2005 enrolled EL students from only one language group with at least 10 students, while 25 percent of the schools (enrolling 38 percent of the EL students) enrolled EL students from two or more language groups with at least 10 students (Rumberger, Gándara, and Merino, 2006).

The data presented above and elsewhere reveal that linguistic minority students begin school at a considerable disadvantage to English background students in literacy and other academic skills (Rumberger & Tran, 2006). Research has also demonstrated that high quality preschool and prekindergarten programs can significantly boost students' school readiness (National Research Council, Committee on Early Childhood Pedagogy., 2000; Rumberger and Tran, 2006). Yet, linguistic minority students are less likely to participate in preschool than English-background students (Rumberger & Tran, 2006). A study by Fuller and colleagues (1996) uncovered the primary reasons for this: there are many fewer preschools available in Latino communities, and many parents are reluctant to turn their children over to staff that do not speak their language or understand the culture of the families. Consequently, improving the educational outcomes of linguistic minority students would be much easier if preschools were more responsive to Latino parents and Latino student participation were increased. This could be done by providing financial subsidies for linguistic minority families, and by helping preschool programs to be more accessible and relevant for immigrant and linguistic minority families.

Preschool education varies enormously in content, quality, duration, and cost, ranging from lower cost part-day "child care" programs to high end full-day programs that offer research-based, developmentally appropriate curricula with state of the art materials and other resources. The costs can vary accordingly, though not always. For example, the per student cost of the federally sponsored Head Start Program is over \$7,200 annually, although these programs vary widely in quality and are usually part-day (NCES, 2005; Zigler & Styfco, 1993). On the other hand, a now often-cited study conducted at the RAND corporation (Karloly & Bigelow, 2005) finds the cost for public supported part-day, "high quality" preschool to be about \$5,200

per student. The definition of high quality for this study included teachers with bachelor's degrees and specialized training in child development, assigned to students at no more than a 10 to one ratio. Other, private preschools can charge much more, but also vary in quality. While the National Association for the Education of Young Children (NAEYC) recommends that preschools should respect diversity, in part by communicating with students and families in the home language and incorporating it into the daily curriculum, there is little in the literature to guide our understanding of how bilingually-staffed programs with materials appropriate for different language groups, offered in private or public settings, might differ in costs from those serving monolingual English speakers. However, it is probably safe to suggest that a mid-range cost figure would likely fall into the area of about \$5,500 per 3-4 year old student for a part-day, high quality, linguistically appropriate program, housed in existing building space, in 2005 dollars.

(2) A comprehensive and appropriate instructional program

Linguistic minority students need a comprehensive instructional program that addresses two areas: English language development (ELD) and the core curriculum. First, linguistic minority students need a comprehensive ELD program that develops all four language domains: listening, speaking, reading, and writing. Although the core curriculum develops the domains of reading and writing, linguistic minority students need additional instruction to fully develop these domains. And, as the recent national literacy panel points out, linguistic minority students also need instruction to develop oral language proficiency, which is linked to English reading comprehension (August & Shanahan, 2006). An appropriate ELD program would address varying levels of English proficiency since linguistic minority students vary widely in the level of proficiency in all four language domains when they enter school. The program would also

develop age-appropriate proficiency so that linguistic minority students in higher grades would master more advanced levels of academic English required to access the core curriculum. The age-appropriate proficiencies in all four language domains are spelled out in the ELD standards.

One way to promote ELD is to provide linguistic minority students with strong English role models in classes that are not segregated from English-only students, and also to have the opportunity to be in a safe classroom environment where they can focus on development of English skills without embarrassment and without having to compete with English speakers for air time. This requires a thoughtful balance in the organization of instruction.

Another way to promote ELD is through primary language development. There is increasing evidence that the development of both oral language proficiency and literacy in the primary language facilitates oral language proficiency and literacy in English (August & Shanahan, 2006). For example, a series of carefully controlled studies reported by Slavin and Madden (1999) found that students who had been in Success for All's Spanish reading program, *Exito para Todos*, outperformed control students who had been in English-only reading programs, on tests of reading in English at the third grade. These students also outperformed their controls in Spanish reading by significant margins. The researchers concluded that the Spanish reading skills had "transferred" to English as students were transitioned into English reading instruction. Several meta-analyses of studies of students taught in high quality bilingual programs versus those in equally well-implemented English-only programs have similarly concluded that the bilingual programs showed a significant advantage over English-only programs (Slavin & Cheung, 2005; Rolstad et al, 2005; Greene, 1997). So, if students and parents desire it and schools have the resources to provide it, the ELD program should include

primary language development. Of course, this is also an avenue to a Standard 4 educational outcome.

Second, linguistic minority students need full-access to the core curriculum. There are a number of instructional approaches to provide access to the core curriculum. For students with more advanced English language skills, access to the core curriculum can be provided with specially designed academic instruction in English (SDAIE) and, when appropriate, with supplemental primary language support. For students with less developed English language skills, the only way for them to have full-access to the core curriculum is through primary language instruction. The research is now quite clear and consistent, as well, that primary language instruction in reading and other subjects provides a long-term advantage to those students who are instructed in this manner (August & Shanahan, 2006; Slavin & Cheung, 2004; Genesee et al., 2006).

A quality education for English learners and linguistic minority students should begin with a thorough assessment of their skills and abilities in both their primary language and English. To the extent that English assessment is used with students who lack significant English comprehension, these students should be assessed with materials that are developed with this in mind—materials that have reduced linguistic complexity and that are normed on students like themselves to the extent possible (Abedi & Gándara, in press). This information then would be used to create an instructional plan for the students. The research is consistent in finding that students do not need to re-learn content they have already learned in a primary language, and most children who have a command of their primary language already have skills in that language that can be built upon for further learning. For example, there is considerable evidence that phonemic awareness in the primary language provides a foundation for learning to read in

the second language, and if students have already learned to read in their primary language, they are substantially advantaged in transitioning to English reading (August & Shanahan, 2006; Durgunoglu, Nagy, & Hancin-Bhatt, 1993).

To provide a comprehensive and appropriate instructional program for linguistic minority students will require additional instructional time. We saw in our data, as well as that of others (see for example, Gándara, 2000), that schools that are especially effective with English learners find ways to expand time for them. Sometimes this is through changing the school calendar, extending the day, grouping class periods to increase time devoted to literacy, adding Saturday classes, or extending the school year. Increased instructional time can also come about through reduced class sizes, which an increasing body of research has shown to be related to improved student achievement, particularly for more disadvantaged students (Finn et al., 2001). However this is accomplished, a strong program for linguistic minority students will incorporate additional time for them to acquire both English and the academic content at their grade level.

(3) Sufficient and appropriate student and family support

Many linguistic minority students come from immigrant families, and many of these families have limited family resources and live in communities with limited community resources. They also have limited knowledge of the U.S. educational system, such as appropriate academic behavior, student and family responsibilities, and school expectations. Thus to meet the same challenging standards as students from more advantaged families and communities requires additional student and family supports.

Students who are unfamiliar with U.S. schools and society, and students from very low income backgrounds who lack much of the social capital of their native-born peers, may also need orientation into U.S schooling and society. Our respondents talked about the need to help

students understand the behavioral norms of their new homeland, the kinds of rules and expectations that they could expect in school and the broader society, how to integrate themselves into the mainstream, among a host of other skills that help young people to succeed in the workplace and in society. Some of these needs can be met in newcomer programs that provide orientation for EL and immigrant students, and some administrators felt that additional class time should probably be devoted to non-cognitive skills as well. They may also be met through additional school staff, such as tutors and counselors.

Parent involvement has long been established as key to student achievement, but many parents of EL students do not feel comfortable or welcomed in coming to school, and often feel that, once there, they have little to contribute. However, parents, no matter what their own educational level, are critical teachers for their children—in motivating and supporting them in school work, monitoring homework and class placements, in modeling reading and other literacy behaviors, in guiding them towards good decisions about school and helping them to plan ahead for post-secondary opportunities. Parents from all kinds of backgrounds can also advocate for their children and for their children’s school with local administrators and school boards. Our respondents were anxious to involve parents in their children’s schooling and incorporated technology—“teleparent” and other computer technologies that keep parents informed on a daily basis about homework assignments, absences, and other school requirements in the language of the parents, parent clubs, English classes, and other strategies to engage parents actively in their children’s education.

Parents of linguistic minority students often have serious financial limitations, and concerns about meeting students’ basic health and welfare needs. If families are refugees, immigrants, and perhaps undocumented, there are additional issues that may get in the way of

school success. We heard from our respondents about the need for community liaison personnel, health care workers, and social workers to help respond to the needs of students so that they could focus on schooling. Most California elementary schools have no full time nurse, no counselors or social workers. Most California high schools have only one counselor for about every 850 students, and few of these are trained in working with non-English speaking parents or can speak their languages (Gándara et al, 2003). It is probably critical for the success of EL students that some of these services be available to them, and that their parents have access to school personnel, especially counselors, who can speak to them about their children's personal and academic needs and the options that exist for meeting those needs.

(4) Ongoing professional support

Even the best teachers require ongoing professional development to strengthen their teaching skills and disciplinary knowledge. Those who are well-trained in teaching EL students may require one kind of professional development, geared to their grade level, and those with less background and skill in the area may require something else, but significant focus on the teaching of EL students must occur as a regular and ongoing part of strong professional development for teachers of EL students. One-shot lessons are less useful than opportunities to continue practicing and developing skills over time. Many teachers and administrators feel that they have substantial expertise among their own teachers, but that this needs to be shared and practiced among all of the staff. Collaboration is viewed by almost all the individuals we interviewed, as well as those interviewed in the Parrish et al (2006) study, as being a key ingredient to strong instruction for EL students. Teachers and administrators note the need for teachers to be able to meet, discuss, review strategies, and share information about students and pedagogy on a regular basis. This requires that teachers—and administrators—be given the time

to engage in this activity on a weekly basis. Ongoing professional support can also be provided by resource teachers and mentor teachers who support the activities of classroom teachers.

(5) A safe and welcoming school climate

Most English learners come from low-income families, and most are clustered in low-income urban environments where school facilities are old, and often uninviting. Some can even be hostile and scary, especially for newcomers. In a recent study, Gándara & Rumberger (2003) found that schools that serve large numbers of English learners were more likely than other schools to have principals and staff who were characterized as rude and uncaring, and to have run-down facilities and lack of adequate space. These schools are often located in troubled inner-city neighborhoods where students can also be distracted by concerns for their own safety. Additionally, EL students are frequently marginalized within the school in programs that separate them from the mainstream of students. Among our respondents we heard about the critical importance of creating a safe, calm campus climate by hiring sufficient security personnel and parents to monitor the campus, and by adding particular environmental enhancements, such as landscaping, paint, and extra janitorial help, to ensure that the campus looks and feels attractive and inviting.

Resources Needed to Provide an Adequate Program

There are several critical resources needed to provide the instructional program outlined above:

Teachers

The most important resource for educating students is teachers, both classroom teachers and support teachers. The program we outlined above argued that to provide an adequate education for linguistic minority students will require additional instructional time and smaller

classes, both of which will require additional classroom teachers. The PJPs suggested additional support teachers were necessary to assist classroom teachers and provide additional services for disadvantaged students. This, of course, depends on class size. With a small enough class size, and a highly trained teacher, additional support teachers may not be needed. However, most schools in our case studies also highly valued resource teachers to support teachers in developing curricula and lessons, and in working individually with students.

While it is critical to provide a sufficient number of teachers to provide an adequate education for linguistic minority students, it is also critical to provide teachers with the proper human resources. First, teachers of EL and linguistic minority students also need specific pedagogical and discipline-specific knowledge. Wong-Fillmore and Snow (2000) argue that all teachers, but especially those who teach EL students, need to know a great deal about the structure of language, its development in the first and second languages, and how to support and enhance it. Understanding how to use cognates in building new vocabulary, using speech markers, and frequent checks for comprehension, are skills that teachers of EL students must have to be effective (August & Shanahan, 2006).

Second, teachers of linguistic minority students also need to know how to use assessments to measure language proficiency and to monitor student progress. Third, teachers of linguistic minority students should be bilingual. We have seen in the literature and in our own data that bilingual teachers who can speak the language of their students are assets in any classroom. These teachers can monitor student learning, identify places where confusions occur, motivate students by building rapport with them, and communicate with students' parents and family members.

Finally, while disciplinary knowledge and pedagogical skill are important, many administrators point to non-cognitive skills as being the most critical characteristics of effective teachers of EL students—compassion, understanding of the challenges that students face, a strong belief in the students’ natural abilities, a deep desire to see students succeed, the ability to motivate students, and a willingness to adapt their instruction to meet the distinctive needs of EL students. A recent review of the literature (Gándara & Maxwell-Jolly, 2005) confirms this view, finding that affective characteristics and “active” teaching behaviors were cited more frequently by researchers as important teacher characteristics than other types of knowledge.

Support personnel

To provide support for linguistic minority students and their families will require a variety of support personnel. High schools in our case studies, especially, wanted—and as possible paid for—more counseling and guidance personnel, and outreach and social workers, especially those who could speak the languages of the parents and community. Safety on the campus is a prerequisite for learning and the secondary schools we studied placed a premium on hiring security personnel. All wanted more library staff—some had none at all. Given that literacy was the highest priority in the curriculum for ALL schools in our study, library staffs are critical resources that can help students identify materials that are suited to their skill level, interests, and needs; yet libraries and staff were generally under-funded or not funded at all.

Appropriate instructional materials

To provide a comprehensive and appropriate instructional program requires appropriate instructional materials. In addition to the core instructional materials, linguistic minority students need both strong English Language Development materials and texts, and bridging material that allows them to access the core curriculum with their more limited vocabularies and

knowledge of English language structure (these may include primary language materials, as appropriate). Beyond that, linguistic minority students would benefit from computer-based instructional materials. For example, digitalized curriculum (and the hardware to run it) allows students to devote more time to studying subjects outside regular classroom hours. This can be especially beneficial for secondary students who may have little time to catch up for graduation. Library books need to cover a wide range of levels and be available in the languages of the students, both to stimulate reading among those who are not yet fluent in English, and to provide the opportunity for non-English speaking parents to read with their children.

English Language Development materials that are designed to reflect the state's ELD and ELA standards, that are of high quality and appropriate across age groups and proficiency levels, still need to be developed. Much of what schools in California have been using for this purpose has been shown to be inadequate (Calfee, 2006). Recent legislation would have directed the State Board of Education to request textbook publishers to submit for adoption textbooks that reflected these characteristics; however the legislation was vetoed by the governor with the message that the use of such materials served to segregate English learners from English speaking students (presumably because EL students would have been learning from different textbooks during the period they were at low levels of English proficiency). Clearly the political and the pedagogical need to be separated on this issue.

Because textbook publishers stand to profit considerably from adoption of their textbooks, they are generally willing to engage in the development of such materials that the State Board of Education indicates it will be willing to adopt. There is little public cost associated with the development of these materials. Purchase of the textbooks, however, does represent an additional cost specific to the needs of English learners. Given the current cost of

textbooks and companion materials, those students at the lower levels of English proficiency who need instruction tailored to their language needs might incur an additional \$150 per student in additional materials. If we were to assume that, based on the percentage scoring at the lower levels on the CELDT, perhaps one-fourth of EL students would need these materials, this computes to about \$45 million, or less than .02% of current per student expenditures.

Valid, comprehensive assessments

To provide an adequate education for linguistic minority students requires valid diagnostic, formative, and summative assessments. Diagnostic assessments are needed to evaluate the skills and abilities of linguistic minority students in both their primary language and English. Formative assessments are needed to provide teachers with ongoing information on progress of linguistic minority students in both language development and subject matter competence. Summative assessments are needed to measure the progress of linguistic minority students in reaching standards and other outcomes, including non-cognitive outcomes.

Moreover, accurate assessment of students' skills can accelerate students' learning, allowing teachers to build on what students already know, rather than assuming that these students know nothing. This can be especially critical in upper grades where students who have received a formal education in other settings are often placed in courses that are below their skill level, placing them further behind than they need to be.

The development of appropriate assessment is a more technically complex, and expensive, undertaking than the development of textbooks and other curricula. These issues have been long debated within the testing industry, but without a sufficiently large market, there has been little incentive to tackle them. With the proper signals to the test manufacturers, there would undoubtedly be interest in engaging in this test development. This probably only makes

sense, though, if the market would be larger than one state (albeit the largest state). So the federal commitment embedded in NCLB to help states develop these assessments, as well as enforcement of NCLB's guidelines that states use valid and reliable tests for EL students, would be important incentives for testmakers to begin developing better assessment tools for EL students. If the federal government were to insist that states adhere to NCLB guidelines for EL testing, the cost to the state should be relatively minimal.

Effective school organization

English learners need opportunities to use the language they are learning in all modalities, and early on they especially need the opportunity to develop their oral English skills. But it is often difficult for English learners to compete for “air time” with their fluent English-speaking peers. Even when the EL students are given time to speak, many will feel embarrassed to talk out loud. So, we routinely see EL students sitting quietly in class, rarely using the language they are supposed to be learning¹⁸. They need a safe, controlled space in which to use the new language. At the same time, English learners need strong models of English and they need to have opportunities to interact in natural contexts with fluent speakers. These differing, and sometimes competing, needs require a careful balancing of how schooling is organized for English learners. Moreover, not all of the teachers in a school are likely to have the same skill in teaching EL students, or to be able to communicate with them.

Distributing teaching resources to most effectively serve these students is another organizational challenge for schools. There has been considerable focus recently on creating small learning communities where “close, caring, and intense relationships between teachers and

¹⁸ A recent study in one California school district (Maxwell-Jolly et al, 2006) showed that during a 4-hour classroom observation period, elementary school EL students averaged only 3 minutes of writing and 3 minutes of speaking in English, while secondary EL students averaged only about 2 minutes of oral production in English and even less of writing.

students, and among faculty who share students” (Acess, 2001, p.127) can be nurtured. There is reason to believe that this kind of school organization can also provide critical educational resources for EL students, but the composition of the classes, the particular skills of the teachers, and the varying opportunities for language use and expression must always be kept at the forefront of such reorganization (Elmore, 2004).

Effective leadership

It was abundantly clear in the interviews that we conducted with principals, as well as those transcripts we read of principals from other studies, that school leadership is a critical factor in the success of low income schools, and especially those serving large numbers of English learners. Principals of successful schools had a focused plan for how EL students would be served, articulated this clearly and consistently to their staff, and they had redistributed resources to attend to the specific needs of these students. Many teachers talked about how hard the principal pressed them for tangible academic gains for their EL students. These principals had given considerable thought to what kinds of professional development was needed, and what kinds of materials needed to be purchased. They had also developed a plan for distributing teaching resources in a way that placed EL students with the teachers most able to help them. Importantly, they had focused resources on strategies that were proven to make a difference, such as buying extra time for these students, before and after school, on Saturdays, and through independent study.

Appropriate district and state support

For schools to develop and maintain effective programs for linguistic minority students requires appropriate district and state support. Research has demonstrated that districts can either promote or impede school reform through the types of support they provide concerning the

selection and placement of school staff, the curriculum, and professional development (Spillane, 1996). Similarly, states can promote or impede school reform through the types of curriculum standards, textbooks, assessments, teacher credential requirements, professional development, accountability, and technical assistance they provide.

Additional Resource Needs for Linguistic Minority Students

A critical point of discussion in a study of resources for linguistic minority students is the degree to which the needs we have outlined differ from, or are in addition to, the needs of both all other students and other disadvantaged students. A variety of evidence suggests that all students need qualified teachers, additional support personnel, appropriate instructional materials, time for collaboration, and ongoing professional development (see Table 5). Indeed, the recent PJP for California specified such resources for the “typical school” (see Table 3). In addition, research suggests that all classroom teachers should possess an array of human resources to make them effective, including subject matter knowledge, pedagogical skills, empathy, efficacy, and the willingness to learn and work collaboratively (Cohen, Raudenbush, & Ball, 2003). And, many have argued that in multicultural contexts, which comprise most of our urban centers across the nation, all teachers need multicultural skills, and knowledge and appreciation of the diversity of cultures represented in their classrooms (Banks, 1988; Sleeter, 2001). Finally, a number of case studies have demonstrated that all schools should possess social resources that foster close and caring relationships among teachers, students, parents, and administrators (Anness, 2003; Barnes, 2002; Bryk & Schneider, 2002; Goodard, Hoy, & Hoy, 2000; Spillane, 2004).

Virtually all cost studies and studies of effective schools acknowledge that there are additional resources required to educate disadvantaged students. Perhaps the most critical resource for schools educating disadvantaged students is more instructional time, because those students have more to learn to reach the same standards as students who arrive at school with high initial achievement levels. And, while they are working to catch up, other students are moving ahead, creating a never closing achievement gap. All the PJPs reviewed earlier (see Tables 2 and 3) were specific about adding more instructional time for poor and low-income students, as well as for English learner students.

Table 5—Resources to educate all students and additional resources needed to educate poor and linguistic minority students

	All students	Additional resources for low-income (LI) students	Additional resources for linguistic minority (LM) students	Summary of Additional Resources
Material resources				
Teachers (reduced student/ratio ratio)	--Credentialed; qualified	--Additional classroom teachers for additional instructional time --Resource teachers	--Additional classroom teachers for additional instructional time --Resource teachers	To achieve reduced class size more teachers needed for LI and LM students
Instructional time	--Sufficient instructional time to learn standards	--Additional time to catch up and meet standards	--Additional time to learn English and standards	LI and LM need more instructional time; not certain if LM need still more
Professional development	--Additional days to focus on higher standards All teachers need time for collaboration	-- Focus on special needs of low income	-- Focus on EL	All teachers need more professional development; not certain that LI and LM need more still
Support personnel	--Counselors --School psychologists --Librarians --Nurse	--Additional counselors --Social welfare workers	Bilingual support personnel	LI and LM need more support personnel, LM need bilingual—not certain if any additional resources for bilingual
Instructional materials	--Appropriate assessments --Textbooks --Computers and software --Library books	--ELD materials Additional range of materials to meet wider needs	--ELD for LM; bridge materials; bilingual materials	Additional resources for LI and LM materials, further additional costs for bilingual books, materials
Assessment materials	Appropriate assessment materials		Primary language assessments	Additional resources for primary language assessment
Parent Involvement	Basic funding to support staff to participate in parent involvement	Additional funding for hospitality	Additional funding for translation	Additional resources for hospitality for LI & LM; some resources for translation
Safe, Secure and welcoming environment	Basic facilities maintenance	Additional security personnel and environmental enhancement for low income areas		Additional resources for environmental enhancement & security in LI schools

Human resources				
	--Subject matter knowledge --Pedagogical skills --Knowledge of assessments --Empathy Multicultural literature; Cultural competency --Self-efficacy --Will to learn and work collaboratively	--Sensitivity to class differences	--Bilingual skills for teachers, counselors, parent outreach	Research resources to identify and nurture non-cognitive skills in education personnel for all students; additional resources MAY be needed to recruit, retain personnel with language and cultural knowledge
Social resources				
	--Academic emphasis --Collective efficacy --Trust			Unknown resources

There was also widespread agreement in the PJPs on the benefit of reducing class sizes for disadvantaged students, which is also strongly supported in the research literature (Betts, Zau, & Rice, 2003; Finn, Gerber, Achilles, & Boyd-Zaharias, 2001; Krueger, 2003). In our case studies, most schools reported that reducing class size for English learners either was or would be a critical intervention to support these students' learning. There is more than one way, however, to reduce class size. One can simply redistribute students among more teachers, or one can place more teachers in the same classroom. In the Los Angeles Unified School District, some schools used school improvement funds to create teaching teams, with two teachers assigned to a classroom with the typical number of students. According to teachers and administrators, this not only effectively reduced class size, but it also provided strong teacher support networks, allowed bilingual teachers to be paired with those who were not, energized the curriculum, and created a different—and more positive—dynamic in the classroom. This is one more way to buy more individualized instructional time for each student. However the teacher-student ratio is reduced implies more teachers, which is a relatively costly intervention.

What is more difficult is to determine whether the resource needs to educate English learner and linguistic minority students are similar to those required for poor and low-income students. We believe the evidence suggests that some needs of English learners are indeed *different* from other students with similar socio-economic backgrounds, and their needs cannot all be met with the same set of resources; however, it is not clear to what extent—if at all—they require *more* resources than those of poor and low-income children. For example, many native-born students come to school with dialect differences and, as we have noted, substantial evidence exists that low-income children have significantly smaller vocabularies than middle class children. These students will have the same, or similar, needs for thorough and accurate assessment of their language and academic skills, and for instruction geared toward developing their oral English and comprehension skills, as well as literacy. Similar ELD is probably required for all of these students, while the specifics of how it is implemented may differ by primary language.

We do not know if the resource needs to teach a second language are even similar to those required to close achievement gaps associated with poverty. The fact that most EL students attain proficiency on the CELDT (test of English language ability) long before they attain proficiency in English Language Arts (if they ever do) suggests that the achievement gaps created by language difference are much more amenable to intervention, and therefore require fewer additional resources, than the gaps created by poverty. Moreover, the finding that students tend to learn English at similar rates, regardless of the type of program (e.g., bilingual, English immersion) they are assigned to (Genesee, et al, 2006), further buttresses the notion that resources needed to learn English are of a different kind than those needed to close achievement gaps. That is, basic language proficiency appears to occur at a pace that is somewhat

independent of the type of instruction provided, whereas academic learning does not appear to occur with similar ease, independent of the interventions provided. Furthermore, the type of intervention provided for English learners can have a significant impact on the cost of intervention. For example, research has shown that providing EL students with a bilingual teacher, as opposed to relying on additional support personnel to augment the instruction of monolingual English-speaking teachers, is the less costly alternative and may result in no additional expenditures (Carpenter-Huffman & Samulon, 1981; Parrish et al, 1993).

The fact that some linguistic minority students are also poor, raises the question of whether the resource needs of this subgroup of linguistic minority students are greater than those of other linguistic minority or poor children. The two California PJP panels concluded that no additional instructional time was needed for English learners above and beyond the instructional time needed for poor and low-income children, although one of the two panels concluded that additional resources (in terms of classroom aides) were needed to educate poor and low-income English learners above those needed to educate poor and low-income students from English backgrounds (Table 3). A clue as to why respondents vary so much was found in our interviews with principals in effective schools for EL students. One principal, who had a significant population of both African American and EL students commented that he found the challenges of educating low-income African American students greater than educating his EL students. He felt that he was making less progress with African Americans, given the same resources. The Arizona PJPs estimated the costs for educating “high need” English learners were higher than the costs for educating “low need” English learners, where need was based, in part, on whether students were poor (National Conference of State Legislatures, 2005). Data from a cohort of California school children who entered kindergarten in the fall of 1998 suggest that while

children who are poor or linguistic minority are further behind students who are neither, students who are both poor and linguistic minority are still further behind (Table 6). These disparities are also evident with students in 5th grade. Thus, these data suggest that students who are both poor and linguistic minority could need additional instructional time to achieve the same standards as other students—even more than those who are *either* poor or linguistic minority—because they have the furthest to catch up. Yet it is not clear how much more instructional time and resources they need beyond those of students who are poor or linguistic minority, for example, whether students who are twice as far behind require twice the instructional time and resources.

The suggestion that additional resources are required for poor and low-income English learners is, however, consistent with the recently adopted California textbook standards for English and Language Arts, which specifies 2.5 hours of ELA instruction for all students, plus an additional 30 minutes of instruction for struggling readers of any language background and an additional 30-60 minutes of instruction in English Language Development.¹⁹

Table 6—Selected background and achievement measures by poverty and linguistic minority status, Fall 1998 California kindergarteners

	Percent	Mean SES	Mean language K	Mean math K	Mean math 5 th grade
English only	47.7	.27	.12	.09	.17
Non-poor	41.7	.45	.20	.18	.24
Poor	6.0	-.95	-.32	-.35	-.17
Linguistic minority	52.3	-.47	-.48	-.51	-.26
Non-poor	33.3	-.11	-.39	-.49	-.10
Poor	19.0	-1.07	-.76	-.82	-.45
Total	100.0	-.12	-.19	-.22	-.05

NOTE: Means are expressed in standard deviations from normalized national mean of zero.

SOURCE: Analysis of data from the Early Children Longitudinal Study of the Kindergarten Class of 1998 (N=1,412)

Many other resource needs appear to be similar for both poor and linguistic minority students. All low income and ethnic minority students need teachers who are sensitive to their communities of origin, believe deeply in them, and know how to motivate them. They also need

¹⁹ See: <http://www.cde.ca.gov/ci/rl/im/documents/rlafwkch9sberev.doc>.

teachers who are skilled in strategies for developing their linguistic and academic skills, and who understand the nature of language development both in both first and second languages, as well as in different dialects. Students who come to school significantly behind their middle class peers—as do most low-income and ethnic minority students—almost certainly need extra time to catch up, and need opportunities to be educated with mainstream peers. This probably does not differ substantially for students whether they are low income, English dialect speaking African Americans, or English learners.

The teachers of other low-income students will also need ongoing professional development in teaching language and other subjects to students with special needs, and they will need time to collaborate and learn from each other, as well as to practice the skills they acquire through professional development. These teachers will need a wide range of materials at different levels of skills and interest to engage their students and help them reach grade level. For those students who are English speakers, but also linguistic minorities, teachers should have access to materials in the students' home languages so that parents who do not speak English can be enlisted in supporting their children's learning.

All of these students, whether English learners or not, need safe welcoming schools where they are free of concerns about personal safety and where they can feel cared for. They need counselors and other ancillary personnel who can communicate with their parents out of understanding for the parents' circumstances. All of these students can also benefit greatly by access to some of the social capital that middle class students take for granted—knowledge of appropriate behavioral norms, including those things that endear them to teachers, knowledge of the culture and the opportunities it provides, formal access to the kinds of enrichments that middle class children get informally, such as tutoring, sports, and other extramural activities.

What then are the differences in the resource elements among English learners, linguistic minority students, and other low income and ethnic minority students to achieve Standard 2? We can only say with certainty that individuals and materials that use the students' primary language, and are created with language difference in mind, would be truly additional. Assessments in the students' primary language, ELD materials that are designed for non-English speakers, and teachers and staff who speak the languages of the students, are the only obvious additions. To a large extent, however, these are resources that now exist. With a little additional effort in recruiting teachers with bilingual and bicultural skills, and possibly some additional incentive for them to come into education and remain there, and some resources to aid teachers in becoming multi-lingual, these resource needs could be met. Primary language assessment, for example, can also be designed to be useful for assessing skills of those students acquiring other languages, and certainly skilled, multilingual teachers and other staff would be a tremendous asset to any school also wanting to provide language enrichment for its English-only students. In sum, English learners and other linguistic minority students, *do* require additional resources, above and beyond those of all other students, but their needs appear to differ more in kind than in quantity from those of poor and low-income students who are also struggling with developing broader vocabularies, a command of academic English, and familiarity with the cultural capital that are such important academic assets for the middle class. If these students are to join the mainstream of the American society and economy, their *unique* needs must be factored into any equation of school adequacy.

A final word about the resources needed to achieve Standard 4—biliteracy. Our view is that if all of the resources listed in Table 5 were in place—that is, bilingual teachers and support personnel, multicultural and multilingual materials, etc.—the task of achieving biliteracy for all

students would be more a question of deployment of existing resources than of acquiring additional ones. A skilled bilingual teacher can provide literacy instruction in two languages within the parameters of the normal school day and without jeopardizing—and in many cases enhancing—the ability of students to meet the standards set for all pupils. We have many successful models to draw on (Slavin & Cheung, 2004; August & Shanahan, 2006). Hence the decision to try to achieve Standard 4 is more a question of policy than of resources, once the basic needs of English learners have been met.

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