

Final Report:
**Longitudinal Study of Structured English Immersion Strategy, Early-Exit
and Late-Exit Transitional Bilingual Education Programs for Language-
Minority Children**

EXECUTIVE SUMMARY

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NOTE: Due to the constraints of the electronic environment, some figures have been reconstructed or omitted from the electronic version of this document.

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INTRODUCTION

The primary objective of the Longitudinal Study of Structured English Immersion Strategy, Early-Exit, and Late-Exit Transitional Bilingual Education Programs for Language Minority Children is to compare the relative effectiveness of two alternative programs (structured English immersion strategy and late-exit transitional bilingual education) with that of the program typically funded through the Bilingual Education Act, the early-exit transitional bilingual education program. The characteristics of each instructional program are detailed, as well as the success with which each program meets the needs of limited-English-proficient students. These data provide information to policy makers and practitioners about these alternative approaches for bilingual education and the requirements for the successful implementation of each approach.

The Longitudinal Study is an eight-year project beginning in fiscal year 1983-84 and ending in fiscal year 1990-91. Year one of the project realized four major tasks: (a) finalizing the study design (Ramírez, Wolfson, Tallmadge, & Merino, 1984); (b) developing data

collection instruments; (c) preparing literature reviews (Ramírez, Schinke-Llano, & Bloom, 1984; Schinke-Llano & Ramírez, 1984); and (d) selecting study sites (Ramírez, Wolfson, & Morales, 1985). Year two of the project was the first of a four-year data collection effort. The first, second, and third years of data collection documented information on the students in the study to establish comparability between students and their instructional programs and to confirm implementation of the program models. These data comprised the First Annual Report (Ramírez, Yuen, Ramey, & Merino, 1986), Second Annual Report (Ramírez, Yuen, & Ramey, 1987), and Third Annual Report (Ramírez, Yuen, & Ramey, 1988). Data from the fourth and final year of data collection are integrated with the data gathered in the first three years and presented in the Final Report. The final years of the project were dedicated to developing the analytic model to address the primary study objective. This summary discusses the major findings from Volumes I and II of the Final Report.

ALTERNATIVE INSTRUCTIONAL PROGRAMS

How are immersion strategy, early-exit, and late-exit transitional bilingual education programs the same and how do they differ? Succinctly, these three programs have the same instructional goals, the acquisition of English language skills so that the language-minority child can succeed in an English-only mainstream classroom. As defined in this study, these instructional programs differ primarily in the amount and duration that English is used for instruction as well as the length of time students are to participate in each program.

All instruction in an immersion strategy program is in English. Teachers have specialized training in meeting the needs of limited-English-proficient students, possessing either a bilingual education teaching credential or an English as a Second Language (ESL) teaching credential, and strong receptive skills in the students' primary language. Drawing from the Canadian Immersion program models, the target language (in this study, English) is taught through the content areas. That is, a strong language development component is included in each content lesson. The use of the child's primary language is limited to use on a case-by-case basis, primarily to clarify English instruction. Assuming that a limited-English-proficient (LEP) student begins the program in kindergarten, it is expected that this student would be ready to be mainstreamed within two to three years (i.e., after first or second grade).

In an early-exit program, there is some initial instruction in the child's primary language, thirty to sixty minutes per day. This is usually limited to the introduction of initial reading skills. All other instruction is in English, with the child's primary language used only as a support, for clarification. However, instruction in the primary language is quickly phased out over the next two years so that by grade two, virtually all instruction is in English. Students participating in this model are expected to be exited from the early-exit program and mainstreamed into an English-only classroom by the end of first or second grade.

In contrast, students in late-exit programs receive a minimum of forty percent of their total instructional time in Spanish (Spanish language arts, reading, and other content areas such as mathematics, social studies, and/or science). Students are to remain in this program through the sixth grade, regardless of when they are reclassified as fluent-English-proficient (FEP).

Prior to answering the question of the relative effectiveness of these three programs, the issues of program fidelity and comparability of site background characteristics across programs must first be addressed.

STUDY QUESTIONS

Data analyses are effected in two phases; the first phase addresses the issues of fidelity of treatment and comparability of background characteristics, and the second addresses the issues of program effectiveness.

The analyses in Phase One focus on the following questions:

- To what extent do each of the instructional programs in this study reflect its respective instructional model?
- How comparable are the students, parents, teachers, schools, and districts across the three instructional programs?
- What recommendations can be made regarding the learning and instruction of language-minority students from these data?
- What do these data suggest for policy makers?

The first question is addressed to confirm the instructional treatments that are evaluated. The second question is posed to ensure that critical background characteristics that might potentially affect student outcome (e.g., student socioeconomic level, parent education, years in the United States, teacher training/experience, proportion of language-minority individuals in the school and community,

etc.) are comparable across programs. Using a racing metaphor, as in all fair races, it is important that all of the runners begin at the same starting point. It is only after confirming the instructional treatment and determining whether those factors deemed critical to student achievement are the same (or controlled for) across the programs (Phase One), that the analyses assessing the relative effectiveness of the three instructional programs is effected (Phase Two).

Phase Two of the analyses address these questions:

- What is the relative effectiveness of the immersion strategy and early-exit programs?
- What is the relative effectiveness among the three implementations of the late-exit instructional model?
- How does the academic growth of immersion strategy, early-exit, and late-exit students compare to the norming population used in this study?
- How does the academic growth of the three implementations of the late-exit program compare to this norming population?
- What recommendations can be made regarding the learning and instruction of language-minority students from these data?
- What do these data suggest for policy makers?

Accordingly, study results are presented in two volumes, Phase One in Volume I and Phase Two in Volume II. This executive summary highlights the major findings presented in Volumes I and II of the Final Report.

GENERALIZABILITY

Are findings from this study applicable to all English immersion strategy, early-exit, and late-exit instructional programs?

No. First, study results are relevant only to those programs serving Spanish-speaking language-minority students. Research suggests that second language learners of English with a primary language other than Spanish acquire English language skills differently.

Secondly, study results are applicable only to those instructional programs exhibiting the same characteristics as those in this study. The research objective was to examine three specific instructional treatments. Structured English immersion strategy and late-exit programs which most resembled their instructional models were selected from the field in 1983. In effect, these programs represented the optimal (and not the range of) implementation of each instructional model. Further, because of the need in the research design to maximize the comparisons between the instructional models, early-exit programs were selected from school districts that also had a structured English immersion strategy program. Thus, they also are not representative of all early-exit programs.

In sum, study findings are limited to programs serving Spanish-speaking language-minority students and that exhibit the same characteristics as the study programs selected.

FINDINGS

VOLUME I: INSTRUCTIONAL TREATMENT

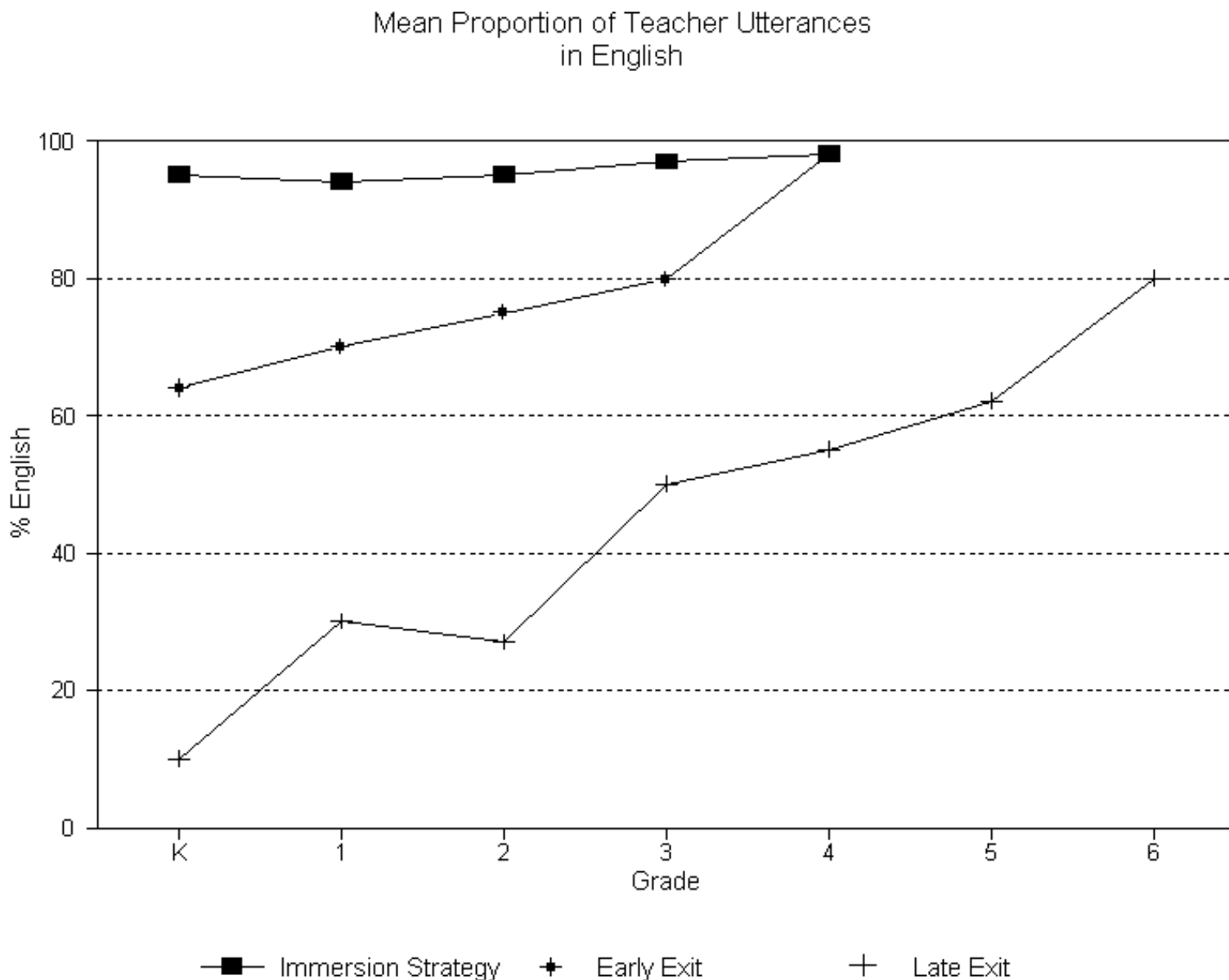
LANGUAGE OF INSTRUCTION

Do the three programs represent three distinct instructional programs?

Yes. As grade level increases within each program--immersion strategy (grades kindergarten through four), early-exit (grades kindergarten through four), and late-exit (grades kindergarten through six)--programs differ in the language(s) that are used for instruction (see Figure 1). With one exception, these differences are consistent with their respective program models. English is used almost exclusively (94.3% to 98.6%) in all immersion strategy classrooms. Early-exit teachers use English approximately two-thirds of the time in kindergarten and first grade, subsequently increasing its use to about three-fourths in grade two, more than three-fourths in grade three, and almost all of the time in grade four. Late-exit teachers exhibit a slower increase in the use of English for instruction. English is used sparingly in kindergarten (< 10%), one-third of the time in first and second grades, about half the time in third grade, and about 60% in fourth grade. In two of the three late-exit districts, English is used approximately 60% of the time in

grade five and about three-fourths of the time in grade six. The third late-exit district was the exception in that English was used almost exclusively in grade five (92%) and in grade six (94%), more closely resembling an early-exit than a late-exit program at these upper grade levels. In sum, the immersion strategy, early-exit, and late-exit transitional programs in this study represent three distinct instructional programs differing primarily in the amount and duration with which English and Spanish are used for instruction. These differences are consistent with the instructional models defined for study in this project.

Figure 1



INSTRUCTIONAL STRATEGIES

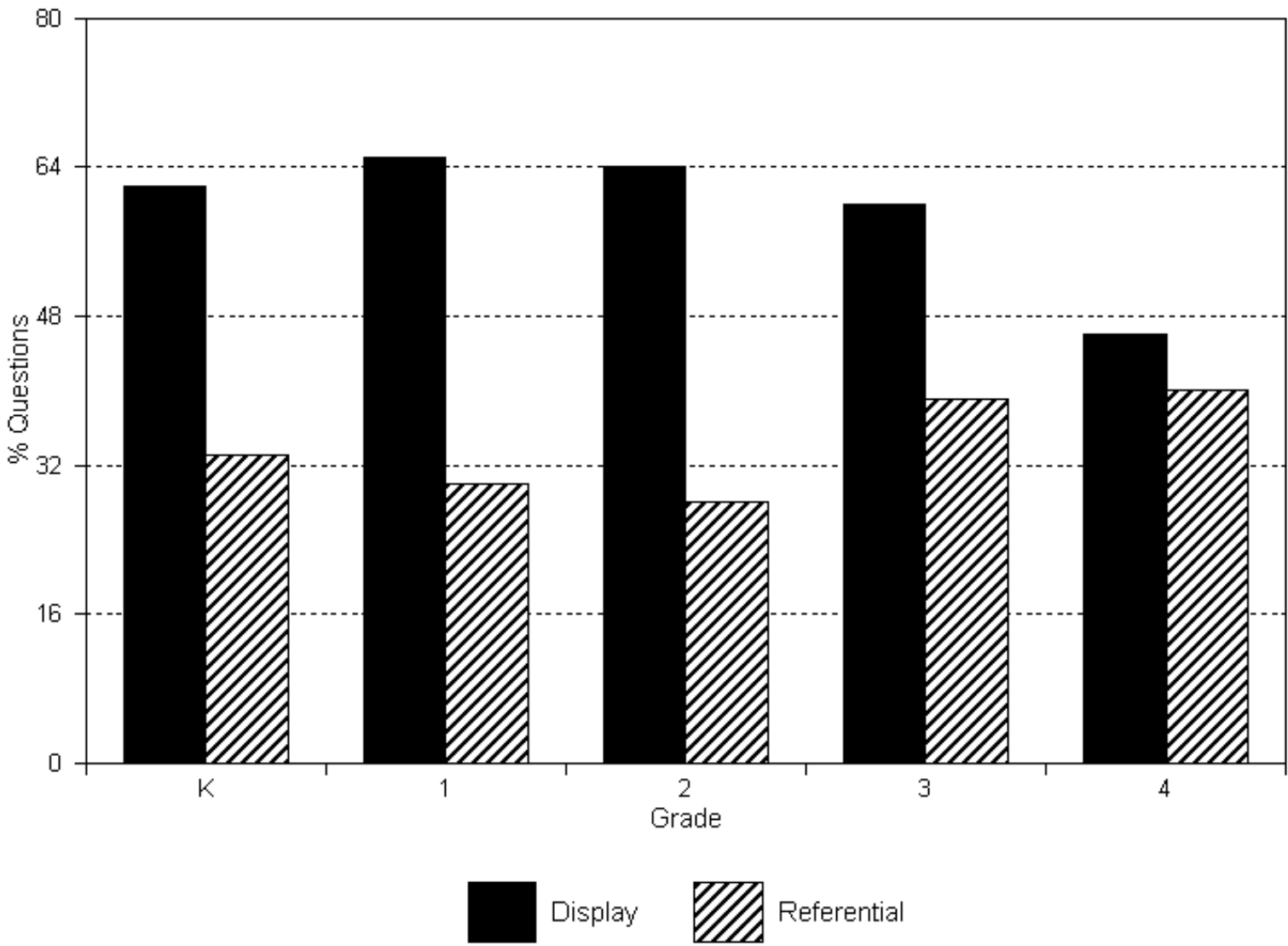
Are the instructional strategies comparable among immersion strategy, early-exit, and late-exit programs?

Yes. Notwithstanding the differences in language use patterns noted above, there are surprisingly more similarities than differences among the three programs regarding how teachers use language for instruction. Teachers are positive and supportive of their students through the feedback they provide to them. Teacher statements are the same across all three programs and all grade levels regardless of whether teachers use Spanish or English: explanation, question, command and feedback. Of concern, teacher questions typically are low-level requests for information recall rather than more cognitively demanding requests requiring critical thinking (see Figure 2). Classroom activities tend to be teacher-directed. Nonetheless, instructional strategies are positive and supportive of students in each program.

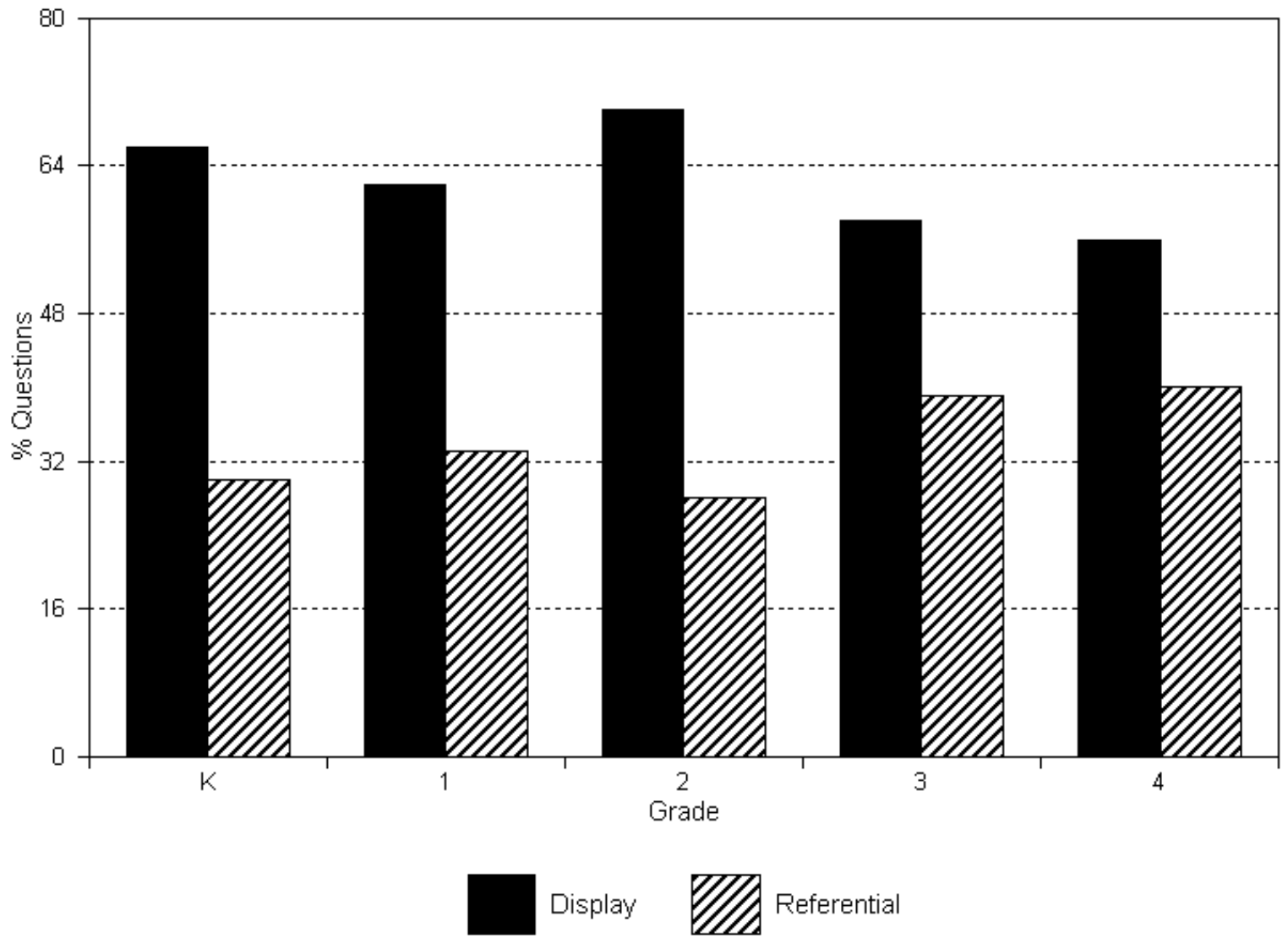
In sum, teachers in each of the three programs use the same instructional methods in teaching limited-English-proficient students, regardless of the language used for instruction.

Figure 2

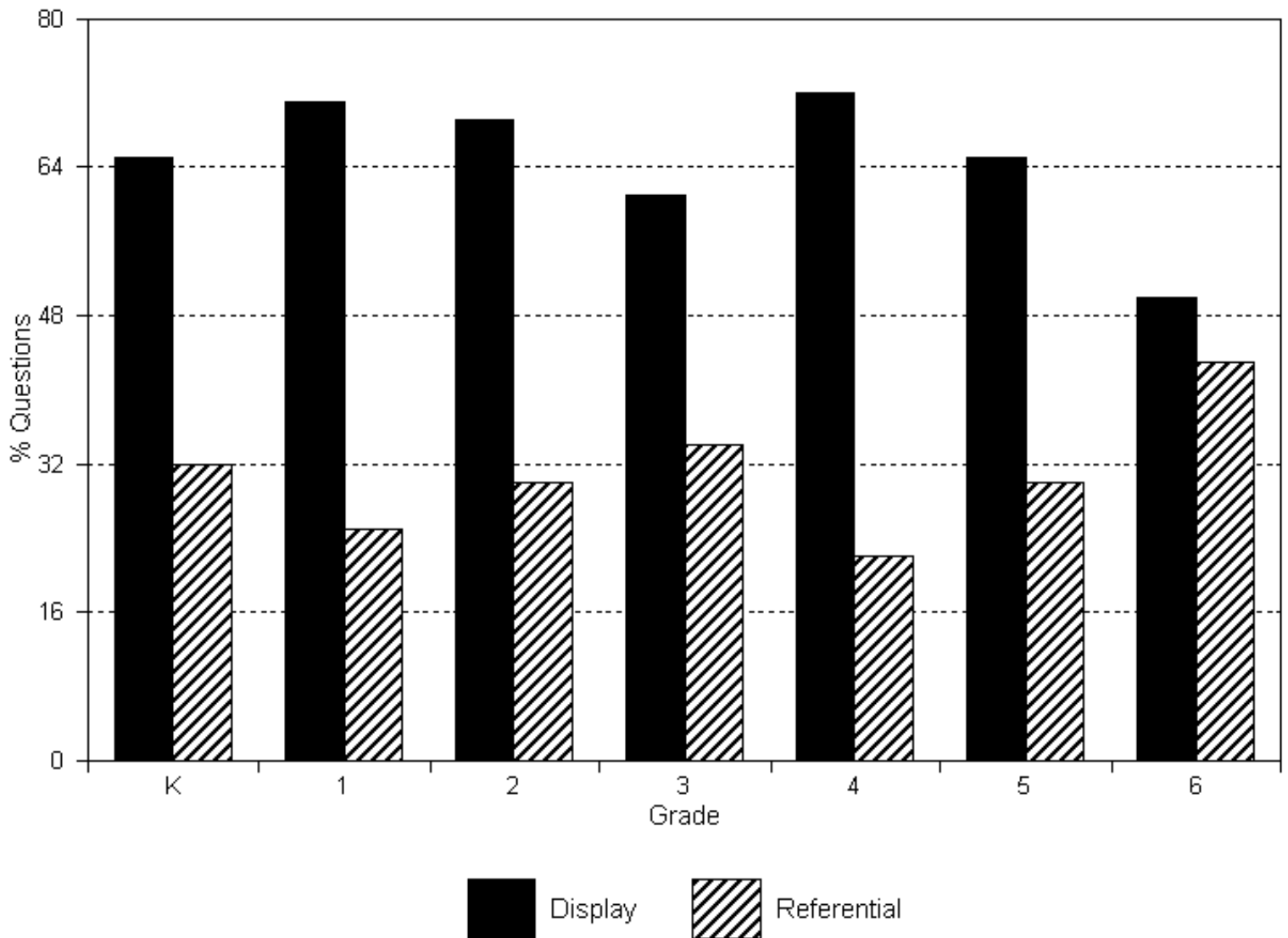
IMMERSION STRATEGY



EARLY-EXIT



LATE-EXIT



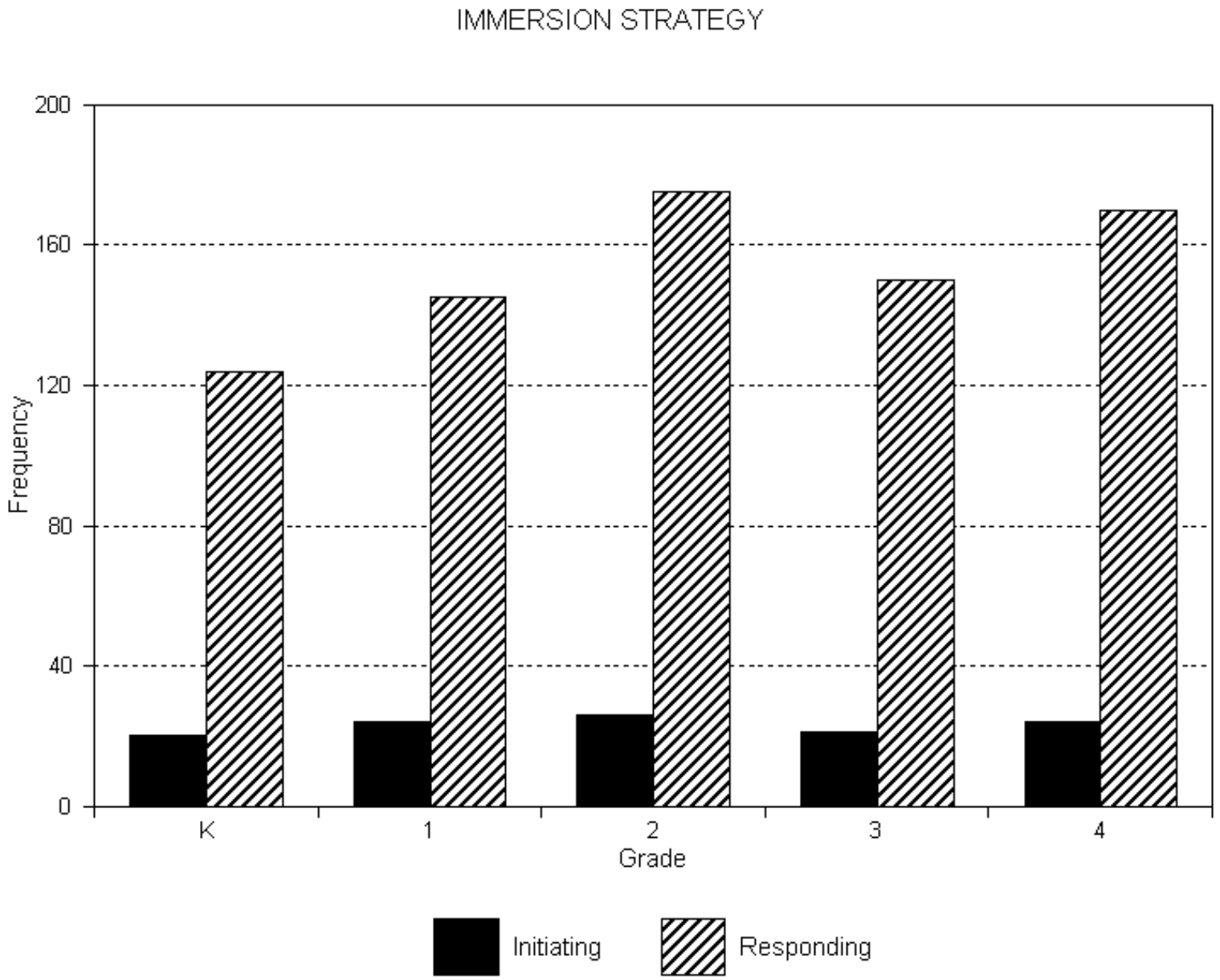
Proportion of Types of Teacher Questions

Do teachers in the three instructional programs provide an ideal language learning environment?

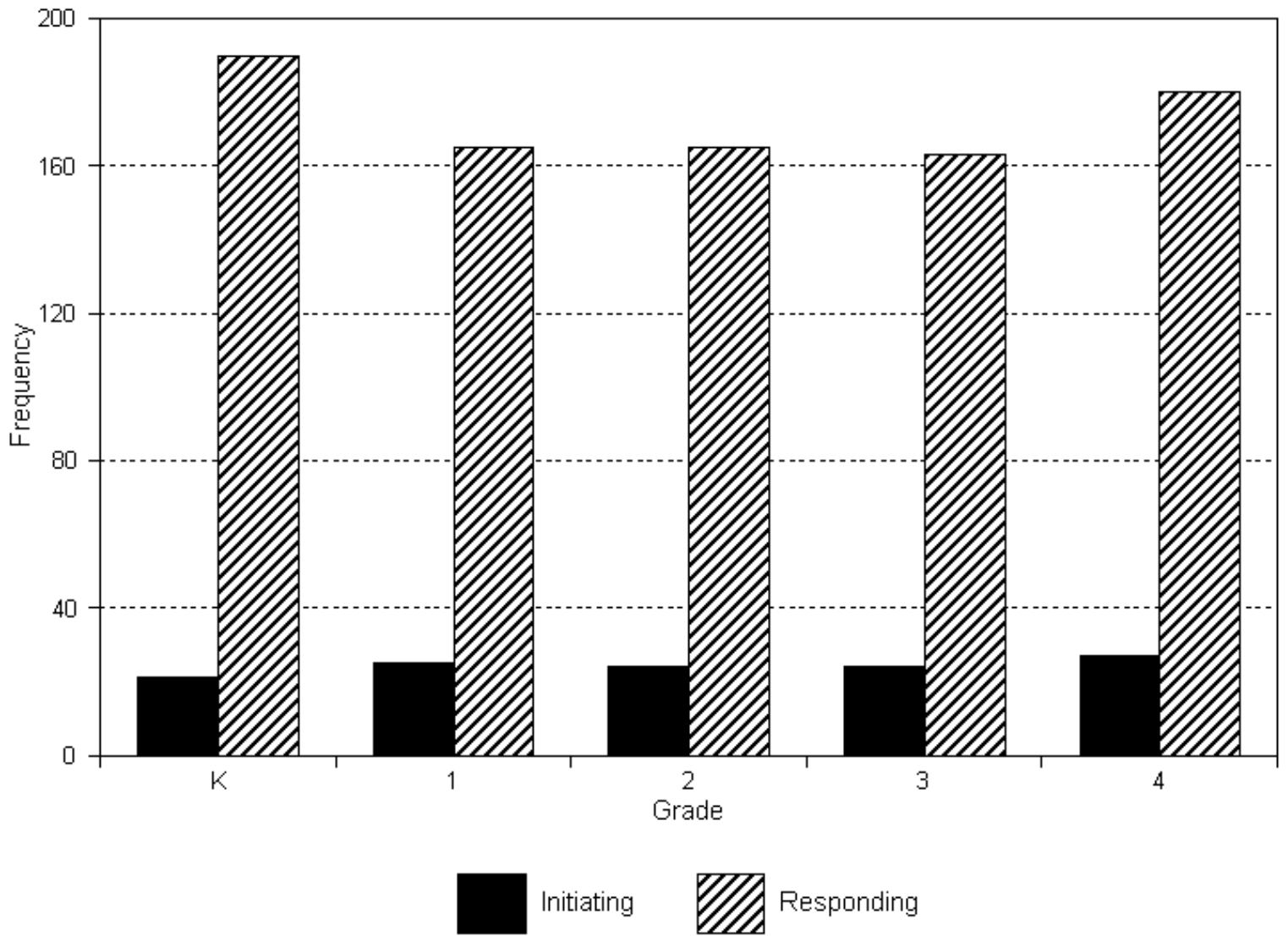
No. Consistently across grade levels within and between the three instructional programs, students are limited in their opportunities to produce language and in their opportunities to produce more complex language. Direct observations reveal that teachers do most of the talking in classrooms, making about twice as many utterances as do students. Students produce language only when they are working directly with a teacher, and then only in response to teacher initiations (see Figure 3). Of major concern is that in over half of the interactions that teachers have with students, students do not produce any language as they are only listening or responding with non-verbal gestures or actions (see Table 1). Of equal concern is that when students do respond, typically they provide only simple information recall statements. Rather than being provided with the opportunity to generate original statements, students are asked to provide simple discrete close-ended or patterned (i.e., expected) responses. This pattern of teacher/student interaction not only limits a student's opportunity to create and manipulate language freely, but also limits the student's ability to engage in more complex learning (i.e., higher order thinking skills).

In sum, teachers in all three programs do not teach language or higher order cognitive skills effectively. Teachers in all three programs offer a passive language learning environment, limiting student opportunities to produce language and develop more complex language and thinking skills.

Figure 3 - Frequency of Student Initiating and Responding Behaviors



EARLY-EXIT



LATE-EXIT

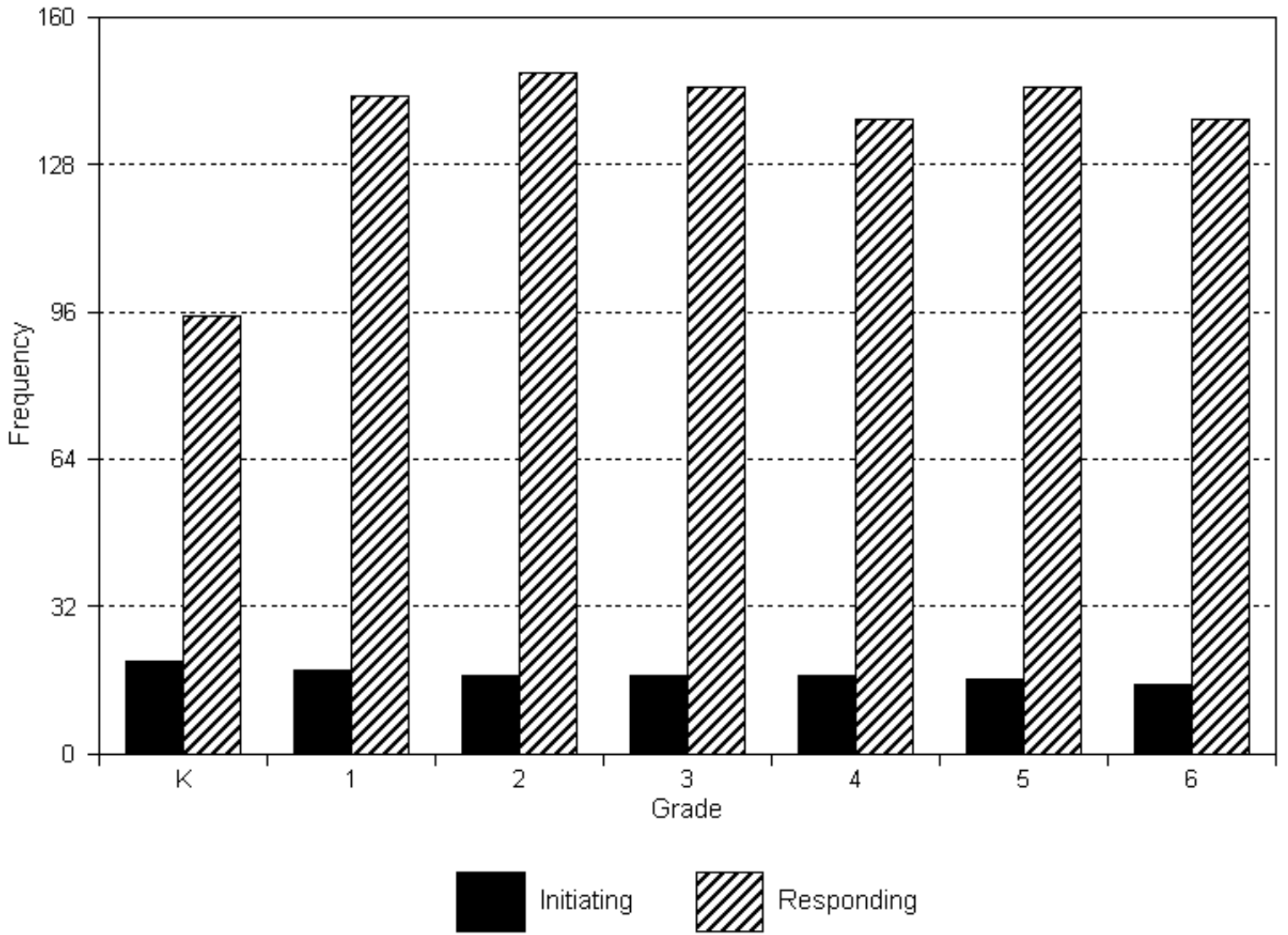


Table 1

Mean Proportion of Student Responding Behaviors by Type, Program, and Grade

Grade		Program		
		Immersion Strategy	Program Early-Exit	Late-Exit
K		$\bar{X} = 122.1$	$\bar{X} = 192.1$	$\bar{X} = 95.7$
	% Ask Question	1.1	0.3	0.5
	% Repetition	11.5	9.2	8.4
	% Expected Response	27.4	28.4	30.7
	% Free Response	6.2	6.7	10.1
	% Free Comment	3.7	2.3	1.9
	% Non-Verbal	40.3	41.8	42.1
	% No Response	5.4	4.3	2.4
	% Other	0.0	0.0	0.0
	% Listening	4.4	6.9	3.9
1		$\bar{X} = 141.9$	$\bar{X} = 166.9$	$\bar{X} = 143.4$
	% Ask Question	1.1	1.0	1.1
	% Repetition	5.8	7.6	5.2
	% Expected Response	34.2	29.1	35.8
	% Free Response	7.7	8.3	6.0
	% Free Comment	2.6	2.7	2.0
	% Non-Verbal	37.3	38.7	37.9
	% No Response	4.8	4.6	4.8
	% Other	0.0	0.0	0.0
	% Listening	6.4	8.0	7.2

2		$\bar{X} = 172.1$	$\bar{X} = 166.5$	$\bar{X} = 149.9$
	% Ask Question	1.1	0.9	0.6
	% Repetition	4.6	3.8	3.6
	% Expected Response	35.2	32.4	35.4
	% Free Response	7.4	5.8	6.3
	% Free Comment	2.0	1.7	2.5
	% Non-Verbal	39.2	41.3	41.0
	% No Response	3.8	5.9	4.4
	% Other	0.0	0.0	0.0
	% Listening	6.6	8.2	6.2

3		$\bar{X} = 149.1$	$\bar{X} = 164.9$	$\bar{X} = 146.7$
	% Ask Question	0.8	0.9	0.6
	% Repetition	3.8	2.3	2.3
	% Expected Response	30.2	25.0	33.3
	% Free Response	6.4	7.0	9.1
	% Free Comment	1.3	1.4	1.7
	% Non-Verbal	41.0	45.5	38.6
	% No Response	7.0	6.3	5.4
	% Other	0.0	0.0	0.0
	% Listening	9.6	11.7	8.9

				$\bar{X} = 137.3$
6	% Ask Question	*	*	0.6
	% Repetition	*	*	2.2
	% Expected Response	*	*	24.7
	% Free Response	*	*	5.9
	% Free Comment	*	*	1.7
	% Non-Verbal	*	*	46.6
	% No Response	*	*	5.5
	% Other	*	*	0.0
	% Listening	*	*	12.8

Do teachers speak differently to limited-English-proficient (LEP) students than to fluent-English-proficient (FEP) and/or English-only (EO) students?

No. Teachers across programs and grades tend to say the same things to LEP, FEP, and EO students when separated by these language classifications. However, teachers do speak differently to students when student groups are comprised of LEPs, FEPS, and/or EOs than when groups are separated by language classification levels. Teachers tend to explain, model, and monitor more often, but ask fewer questions, give fewer commands, and provide less feedback when students are mixed by language status than when separated. Teacher attempts to adjust their language behavior through realia is limited to immersion strategy and early-exit kindergarten teachers. Nonetheless, teachers in all three programs exhibit some sensitivity to the special needs of LEP students when they are mixed with FEP and/or EO students.

OTHER CRITICAL INSTRUCTIONAL ISSUES

Are the three programs comparable in the total amount of instruction provided per day by content area?

Yes. Each program allocates approximately the same amount of instructional time in reading, language arts (collapsing across English and Spanish), mathematics, and social studies. However, reflecting their respective instructional models, the three programs do differ in the amount of English language arts instruction provided across grades. Students in immersion strategy classrooms are provided with the most instruction in English language arts, followed by early-exit, and late-exit programs.

Do classroom instructional activities vary by program and grade?

Yes, by grade, but only slightly. Typical student activities include seatwork and discussion activities, with low to moderate involvement in drillwork, listening, interim or other activities. The frequency of these passive learning activities and discussion activities wherein students either do not produce much language or produce simple information recall provides students with a less than ideal language learning environment.

Are the three programs comparable in the assignment and correction of homework?

No. Consistently, late-exit teachers assign and grade homework with greater frequency than do immersion strategy or early-exit teachers (see Figures 4 and 5).

Figure 4

Percent of Teachers Reporting Homework is Assigned 4 Times or More Per Week

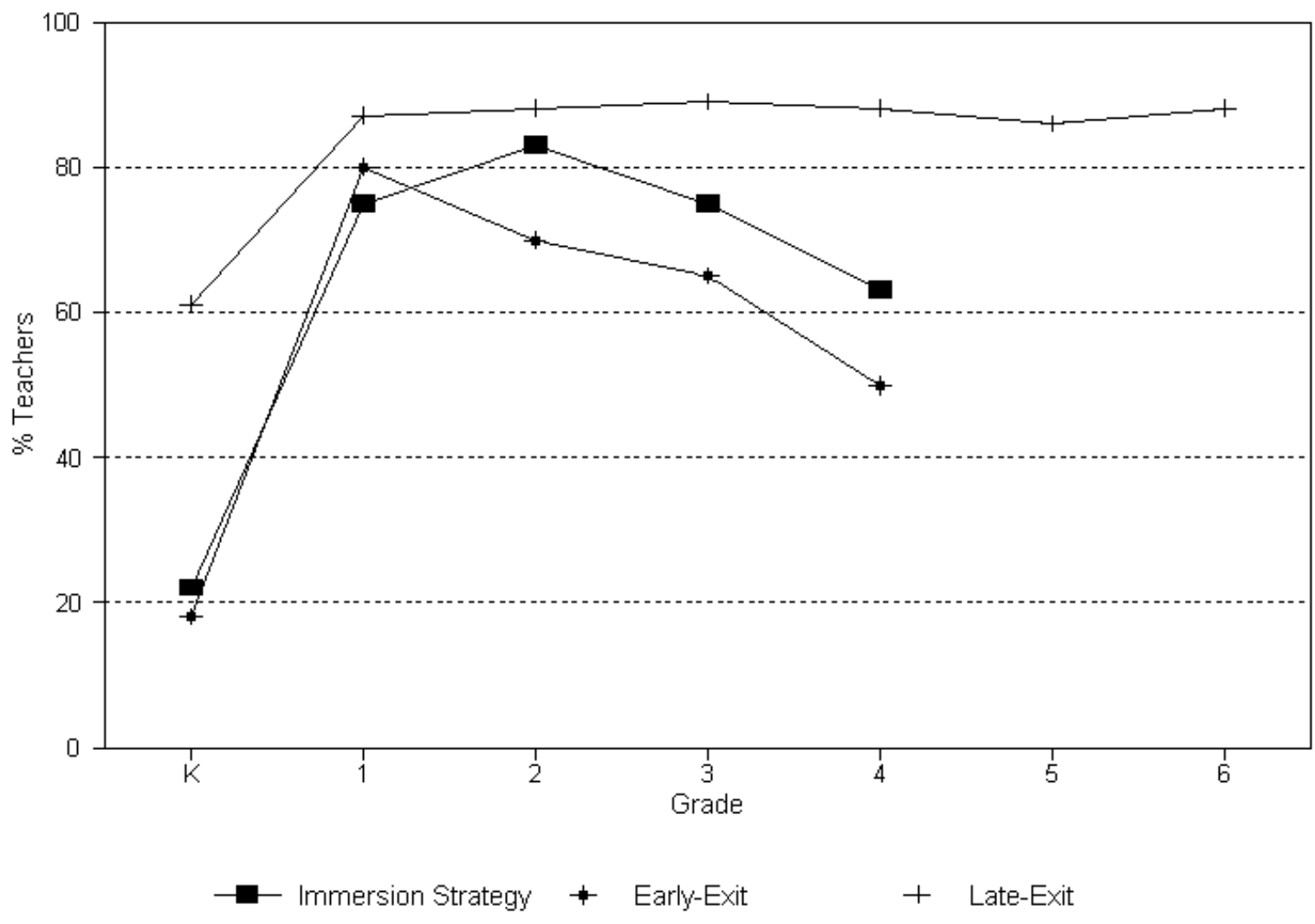
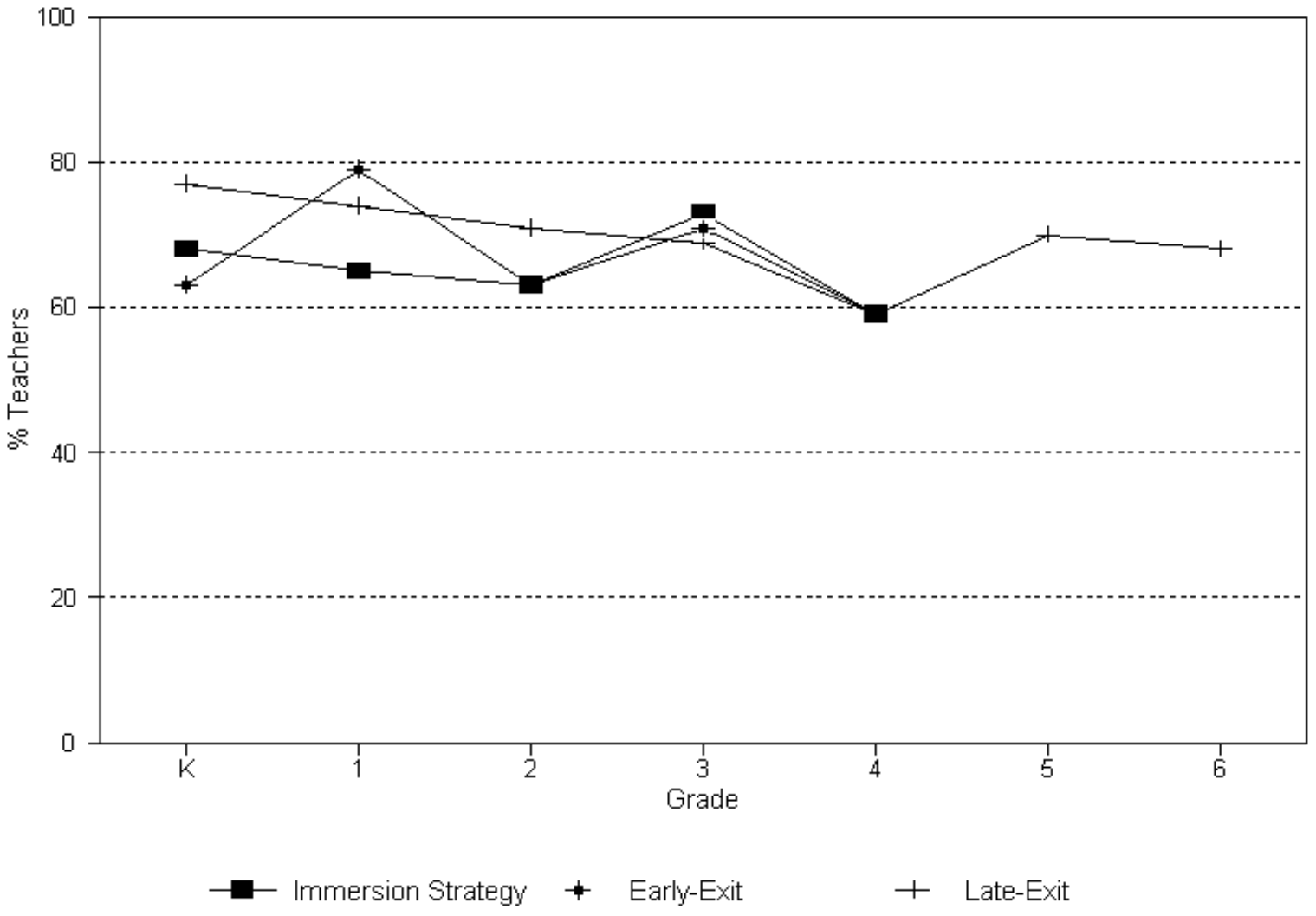


Figure 5

Percent of Teachers Reporting Homework is Almost Always Graded and Returned



Are students engaged in their assigned tasks?

Yes. Across programs, grades, and language classification levels, students exhibit a high level of task engagement (86.5%).

Are the parents of target students in each of the three programs equally involved in supporting their children's learning?

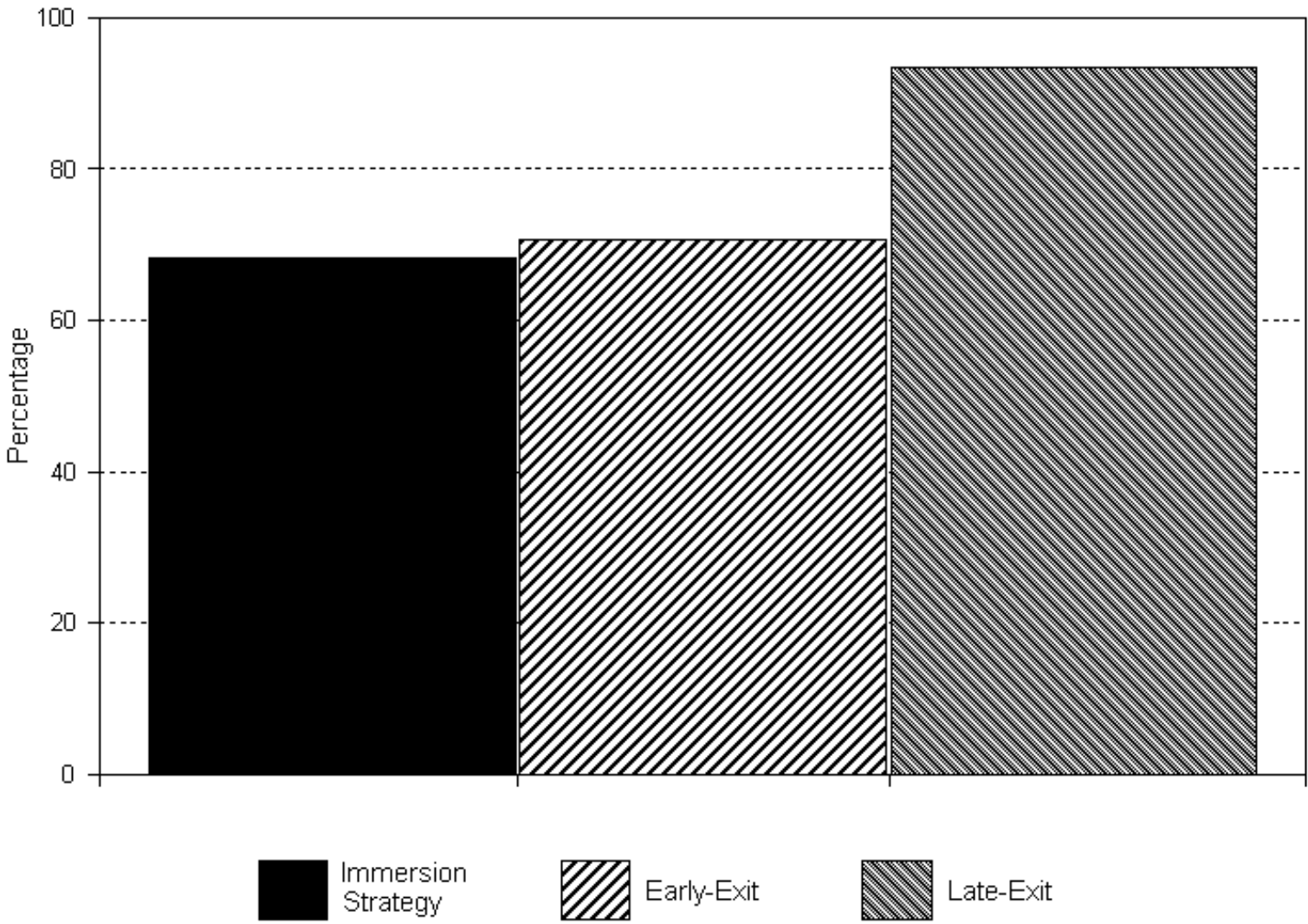
No. Late-exit parents are more aware that their children have homework and ensure that it is completed than either immersion strategy or early-exit parents. Except for kindergarten, teachers across grades and programs always assign homework. While three-fourths (75%) of early-exit and four-fifths (83%) of immersion strategy parents report that their children have homework, almost all (98%) late-exit parents are aware that their children have homework. While the majority of parents in all three programs help their children with homework, it is noteworthy that almost all parents in the late-exit program (93.3%) are more likely to help their children with homework than either the immersion strategy or early-exit parents (68.2% and 70.6%, respectively) (see Figure 6).

In sum, parents in the late-exit program are more likely to help their children with homework than in either the immersion strategy or

early-exit programs. This is attributed to the fact that the greater use of the child's primary language makes it possible for parents to participate and support their child's learning.

Figure 6

Percentage of Parents Reporting They Help With or Monitor Children's Homework



RECLASSIFICATION AND MAINSTREAMING

Do the programs differ in the rate that students are reclassified from limited-English-proficient to fluent- English-proficient (i.e., identified as having improved their English language skills to a level where they can successfully participate in a mainstream English-only classroom without special language support services)?

Yes. Contrary to expectations, by the end of four years in their respective programs (i.e., third grade), slightly more early-exit students (72%) are reclassified than are immersion strategy students (66%). Consistent with its instructional model, while half of the limited-English-proficient students in late-exit programs are reclassified by the end of third grade, almost four-fifths are reclassified by the end of sixth grade (see Table 2).

Table 2**Percentage of Students Reclassified to FEP during the Study, by Years in Program**

Number of Years in Program	Program		
	Immersion %	Early-Exit %	Late-Exit %
1 (End of K)	3.9	12.6	11.8
2 (End of 1st)	21.2	25.4	12.7
3 (End of 2nd)	37.9	43.8	28.0
4 (End of 3rd)	66.7	72.0	50.8
5 (End of 4th)	*	*	67.0
6 (End of 5th)	*	*	78.6

Note: Implications are slightly biased as LEP students who exited from the study were dropped from the calculations while FEP students who exited from the study were retained in the calculation. This tends to slightly increase the percentage of reclassified students as years in program increases.

Do LEP students stay in each program about the same length of time?

Yes. The reclassification rates notwithstanding, and contrary to clear program objectives, early mainstreaming does not occur in either immersion strategy or early-exit programs. After four years in their respective instructional programs, three-fourths of the immersion strategy and over four-fifths of the early-exit students who had entered their programs in kindergarten are not mainstreamed (see Table 3). That is, students tend to be kept within the instructional program, even those who have been reclassified as FEP. Consistent with their instructional model, late-exit students are not mainstreamed until the seventh grade. In sum, at least for the first four years of program participation (i.e., kindergarten through grade three), students in any of the three programs tend not to be mainstreamed.

Table 3**Percentage of Students Mainstreamed during the Study, by Years in Program**

Number of Years in Program	Immersion %	Early-Exit %	Late-Exit %
1 (End of K)	1.3	1.6	*
2 (End of 1st)	10.7	9.1	*
3 (End of 2nd)	19.4	14.0	*
4 (End of 3rd)	25.6	16.9	*

Note: Implications are slightly biased as LEP students who exited from the study were dropped from the calculations while FEP

students who exited from the study were retained in the calculations. This tends to slightly increase the percentage of reclassified students as years in program increases.

STUDENT, TEACHER/CLASSROOM, SCHOOL/DISTRICT CHARACTERISTICS

Are target students (i.e., study participants) comparable between programs with respect to their home backgrounds?

Overall, yes. Target students generally come from families with two adults and three children. While most target students were born in the United States, over three-fourths of their parents were not. Almost three-fourths of the families are of low income (< \$15,000/year). However, proportionately more late-exit families are of the lowest income levels than are early-exit or immersion strategy families.

While roughly one-third of the target students attended preschool, proportionately more immersion strategy students than either early-exit or late-exit students attended preschools where only English was spoken.

Is the support for English and Spanish language use in the homes of target students comparable between programs?

Yes. While most communication between parents and children in the home is in Spanish, siblings use more English with each other. Half of the households receive English language newspapers and half receive Spanish language newspapers. Most other media sources are in English (television, radio, tape, and record player). Most target students play with friends who use both English and Spanish, and they live in neighborhoods where Spanish is spoken at least half of the time. There are no differences between programs.

Are teachers comparable between programs with respect to their language proficiency, ethnicity, training, and attitudes towards the education of LEP students?

No. Late-exit teachers tend to have backgrounds similar to their students, are sufficiently fluent in Spanish to teach in it, and have advanced training in meeting the needs of language-minority students. In contrast, immersion strategy and early-exit teachers generally are not Hispanic, are not sufficiently proficient in Spanish to teach in it, and do not have as much advanced training as do late-exit teachers. Teachers in each program also differ markedly in their attitudes on how limited-English-proficient students should be taught, essentially concurring with the underlying rationale of their respective instructional models.

Do programs differ on critical classroom characteristics that might affect student achievement?

Yes. There are marked differences by program with respect to classroom composition and how students are grouped. Late-exit classrooms have noticeably fewer EO students than immersion strategy or early-exit classrooms. Across programs, the proportion of FEP students increases and the proportion of LEP students decreases per class as grade level increases. Classes across programs are fairly uniform in size, ranging from a mean of 21.8 to 27.1 students per class.

Are project administrators and school site administrators comparable between programs?

Not with respect to their personal and professional backgrounds. Proportionately more late-exit program directors and principals share similar personal characteristics with their students, have Spanish as their first language, and have specialized training to work with language-minority students than their counterparts in early-exit programs. Nonetheless, proportionately more early-exit administrators exhibit these characteristics than do immersion strategy program administrators, who tend to be white, speak Spanish as a second language, and have half the amount of specialized training.

All program administrators appear to understand the theoretical and instructional concepts underlying their respective programs. There is greater inconsistency within and between programs in these understandings as well as differences in attitudes among principals regarding these areas than among project administrators.

Are schools comparable between programs?

To some extent. All school site personnel report that they use multiple criteria to determine language classification, and they have

written curricula for all content areas. Half of the early-exit and late-exit sites report that such written curricula are also available for Spanish language arts and mathematics. Moreover, from one-third to three-fourths of their student bodies are language-minority and low income.

There are program differences at the school and classroom level. Proportionately more of the student body is language-minority at early-exit schools than at either immersion strategy or late-exit program schools. At the classroom level, sites that have only one of the three programs tend not to mix EO students in their classes. In contrast, sites having both an immersion strategy and an early-exit program provide for some mixing of students by language classification in classrooms. However, across programs, mixing of students in classrooms does not usually begin until fourth grade.

VOLUME II: PROGRAM EFFECTIVENESS

The complexity of the study design precluded a direct analysis that concurrently assessed the relative effectiveness of all three programs. The analyses had to be effected in four separate steps. First, it was possible to assess the relative effectiveness of immersion strategy and early-exit programs where they existed within the same schools. Second, a somewhat less direct analysis examined the relative effectiveness of the immersion strategy and early-exit programs in schools that had only one of these programs within districts that implemented both programs. Third, a separate analysis examined the effectiveness of three districts that had only a late-exit program in their schools. These first three analyses were the most rigorous as they systematically considered the potential effect of non-program factors. Fourth, the academic growth of students in each of the three programs was compared to the growth of the national norms used in this study. This last set of analyses were primarily descriptive efforts directed towards illustrating the academic growth of limited-English-proficient students in each program relative to this norming population. In contrast to the others, this last set of analyses allowed us to examine differences in the distribution of scores between programs. Please note that while these analyses do provide us with valuable insight into understanding how achievement changes over time for each program relative to the norming population, they are limited in that they are based on unadjusted scores; that is, potential effects of non-program factors were not considered.

RELATIVE EFFECTIVENESS OF IMMERSION STRATEGY AND EARLY-EXIT PROGRAMS

Is achievement in mathematics comparable between structured English immersion strategy and early-exit transitional bilingual education students?

Yes. Limited-English-proficient students in structured English immersion strategy and early-exit programs (as defined in this study) do not differ in their mathematics skills or the rate at which they develop when tested in English. At the end of first, second, and third grade, students in the two programs have comparable skills in mathematics, according to both the two-program school analyses and the one-program school analyses.

Is achievement in English language skills as defined by the CTBS comparable between structured English immersion strategy and early-exit transitional bilingual education students?

Yes. Limited-English-proficient students in structured English immersion strategy and early-exit programs (as defined in this study) demonstrated comparable English reading skills at the end of third grade. However, differences in their growth rates were noted. While immersion strategy students had higher language skills than early-exit students at the end of first grade, by the end of third grade both groups were again comparable. This suggests that there is a temporary boost in language skills among immersion strategy students in first grade which decelerates thereafter, resulting in growth comparable to that of early-exit students from kindergarten through the end of third grade. Except for the temporary boost occurring in second grade rather than first grade, the one-program school analyses also found no difference in English language skills at the end of third grade.

Is achievement in English reading skills as defined by the CTBS comparable between structured English immersion strategy and early-exit transitional bilingual education students?

Yes. While early-exit students had higher English reading skills than immersion strategy students at the end of first grade, by the end of third grade students in both programs read equally well. As in language, the immersion strategy students exhibited a boost in

reading skills. However, this boost occurred in second grade rather than in first grade and appears to have been sufficient to bring them up to the level of the early-exit students. These results are evident in both the two-program school analyses and the one-program school analyses.

In sum, after four years in their respective instructional programs, limited-English-proficient students in immersion strategy and early-exit programs (as defined in this study) demonstrate comparable skills in mathematics, language, and reading when tested in English.

EFFECTIVENESS OF THREE IMPLEMENTATIONS OF THE LATE-EXIT PROGRAM

The effectiveness of three implementations of the late-exit program was assessed following the general analytic steps used to compare immersion strategy and early-exit programs. As school districts that choose to implement a late-exit program do not provide either an immersion strategy or an early-exit program, it is not possible to compare these alternative instructional programs, nor is it possible to disentangle the effects of district and school from treatment effects. However, utilizing school and district level data it is possible to compare the three alternative late-exit programs with one another taking into account non-program factors that might have affected the results.

Do students in the three late-exit sites have the same skills in mathematics at the end of grade six?

No. At the end of third grade, students in all three implementations of the late-exit program had comparable skills in mathematics. However, by the end of sixth grade, the two late-exit sites that provided approximately forty percent or more of the instruction in the students' primary language (sites D and E) had significantly higher mathematics skills than students in the late-exit site who were abruptly transitioned into English instruction. The mathematics skills of students in the two late-exit sites with substantial primary language instruction did not differ.

Do students in the three late-exit sites have the same skills in English language at the end of grade six?

No. The late-exit site with the consistent level of primary language instruction (site D, at approximately 40%) and the highest level of English language scores at the end of first grade realized higher scores at the end of sixth grade than either of the other two late-exit sites. By the end of sixth grade, students in the remaining two late-exit sites (sites E and G) had virtually identical English language skills.

Do students in the three late-exit sites have the same skills in English reading at the end of grade six?

No. The late-exit program with the consistent level of primary language instruction (site D, at approximately 40%) and the highest level of reading scores at the end of first grade posted higher scores at the end of sixth grade than either of the other two late-exit sites (sites E and G).

In sum, there are differences between the three late-exit sites in achievement level for mathematics, English language, and English reading at the end of sixth grade. Students at the site with the highest skills in English language and reading in first grade (site D) also completed sixth grade with the highest scores in these two areas. Students in the two remaining sites (the one with the most use of Spanish and the one with the most use of English) ended the sixth grade with the same skills in English language and reading. However, although all three late-exit sites had comparable mathematics skills in grade one, by the end of grade six, students in the two late-exit sites that used the most Spanish for instruction (sites D and E) posted higher growth than the site which abruptly transitioned into almost all English instruction (site G).

Do students in the three late-exit sites have the same growth in mathematics, English language, and English reading?

Yes in English language and reading, and no in mathematics. While there may be differences between the three implementations of the late-exit program in English language and reading achievement as noted above, they do not differ in their rate of growth from first grade to sixth grade in these two areas. However, in the late-exit site wherein students were abruptly transitioned into English (site E), their rate of growth in mathematics was markedly lower (almost none) than the two late-exit sites providing forty percent or more of primary language instruction (sites D and E). What is important to note is that the growth for the students in the late-exit site wherein students were most at-risk and which provided the most primary language instruction (site E) was consistently greater than for the

norming population. If this growth were sustained, in time their achievement would approach that of the norming population.

Students in all three late-exit sites show different growth rates between first and third grade than between third and sixth grade. The 1-6 analyses note that students in each of the three sites and in each content area realized greater growth in the early primary grades (K-3) than in the later primary grades (3-6).

There is wide variation in the effectiveness of the late-exit program between districts and schools within districts. Presumably this variation in results reflects the variation in implementation (i.e., proportion of English used for instruction) in the three late-exit sites. The variation in results among the three late-exit sites and the apparent sensitivity of the late-exit model (as suggested by the within-program and between-program variation in results) strongly suggests the potential merit of effecting an operational analysis to try to identify those district, school, and classroom features that can be adjusted to maximize student learning.

There are differences in the growth curves between immersion strategy, early-exit, and late-exit students. While the growth curves for immersion strategy and early-exit students show growth from first to third grade in mathematics, English language, and reading skills, they also show a slowing down in the rate of growth in each of these content areas as grade level increases. This deceleration in growth is similar to that observed for students in the general population. In contrast, the growth curves for students in the late-exit program (particularly in the implementation that was most faithful to the late-exit instructional model) from first grade to third grade and from third grade to sixth grade suggest not only continued growth in these areas, but continued acceleration in the rate of growth, which is as fast as or faster than the norming population. That is, late-exit students appear to be gaining on students in the general population.

COMPARISON OF THE ACADEMIC GROWTH OF IMMERSION STRATEGY, EARLY-EXIT, AND LATE-EXIT STUDENTS WITH THE NORMING POPULATION USED IN THIS STUDY

The TAMP analyses were completed to allow a comparison of the growth of each of the three instructional programs to the norming population used for this study. As the scope of work required that the test data for this study had to be comparable to that of other federal studies (e.g., Sustaining Effects Study), an older version of the CTBS was used. The norming population used in the TAMP analyses is the norming population for that version of the CTBS. If other norming populations were to be selected, while the form of the growth patterns would not change, their relative position to the norming population curve might. In addition, the growth of the norming population is based on a cross-sectional sample rather than a longitudinal sample, which causes a number of difficulties. Other limitations to the TAMP analyses are that they are based on unadjusted test scores, i.e., non-program factors are not considered. With these caveats in mind, the TAMP analyses provide a good description of the patterns in academic growth for limited-English-proficient students.

Is there a difference in the rate at which immersion strategy, early-exit and late-exit students increase their mathematics skills relative to the norming population used in this study from kindergarten to third grade?

Yes and no. It appears that from kindergarten to first grade, students in all three programs increased their skills in mathematics as fast as or faster than the norming population used in this study. From first to third grade, however, it seems that students in each program experienced a growth in mathematics that was slower than this norming population (see Figures 7 through 12).

Is there a difference in the rate at which immersion strategy, early-exit and late-exit students increase their English language skills relative to the norming population used this study from kindergarten to third grade?

No. It seems that from spring kindergarten to spring first grade and from spring first grade to spring third grade, students in all three programs increased their skills in English language as fast as or faster than this norming population (see Figures 13 through 18).

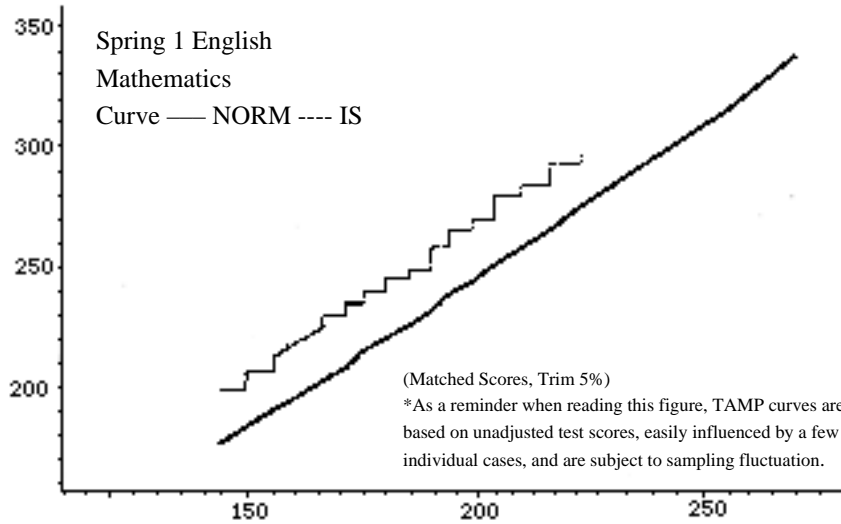
Is there a difference in the rate at which immersion strategy, early-exit and late-exit students increase their English reading skills relative to the norming population used in this study from kindergarten to third grade?

No. As with English language skills, it appears that students in all three programs realized a growth in reading skills that was as fast as or faster than this norming population (see Figures 19 through 24).

Figures 7 and 8

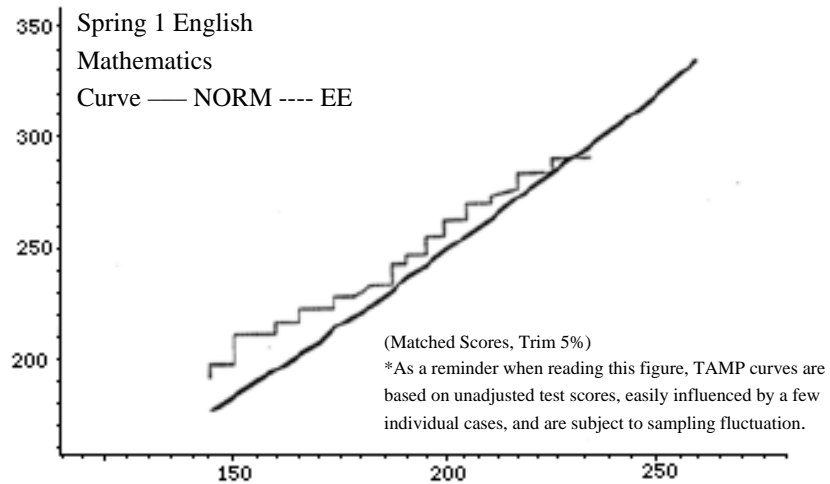
English Math Spring 1 vs. English Math Spring K*

Tamp Curves: Norming Population and Immersion Strategy Program



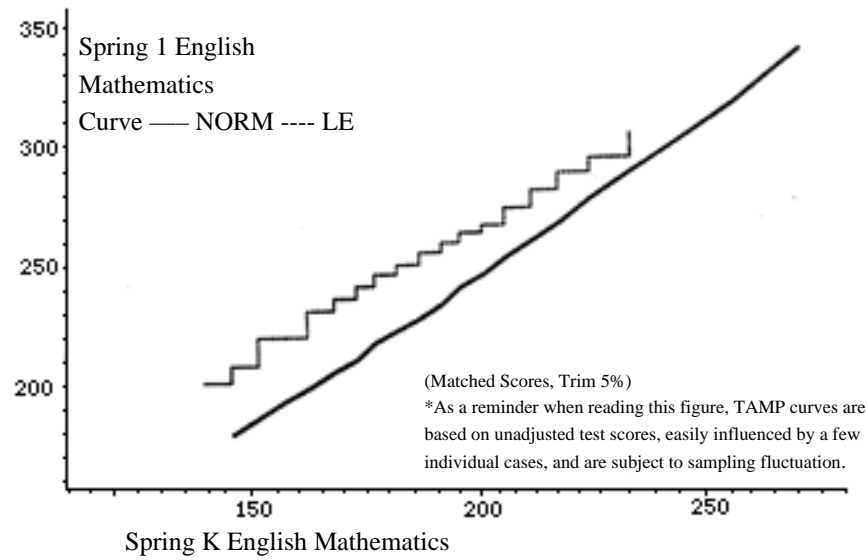
Spring K English Mathematics

Tamp Curves: Norming Population and Early-Exit Program

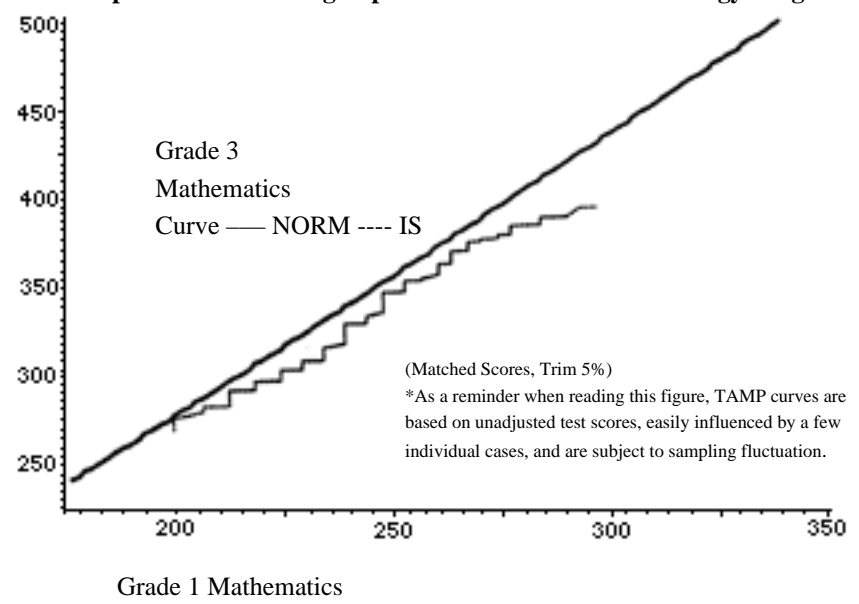


Spring K English Mathematics

Figures 9 and 10
English Math Spring 1 vs. English Math Spring K*
Tamp Curves: Norming Population and Late-Exit Program

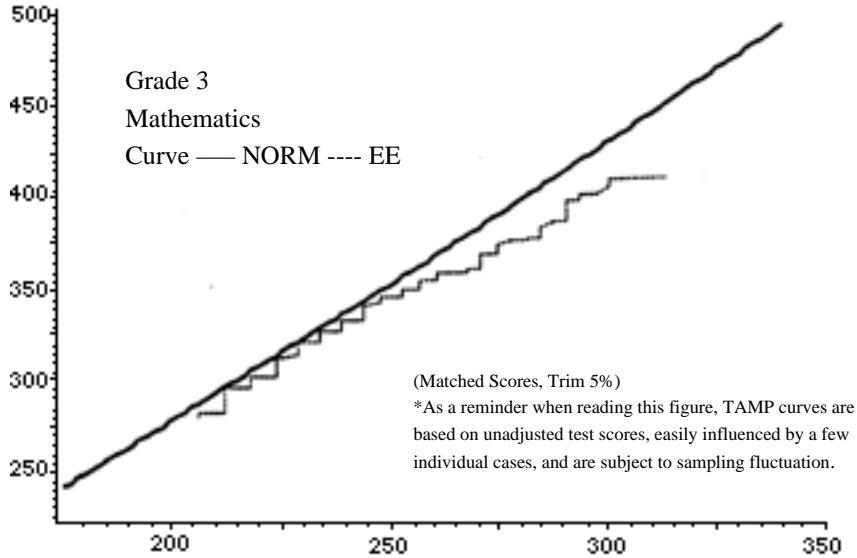


Math Grade 3 vs. Grade 1*
Tamp Curves: Norming Population and Immersion Strategy Program



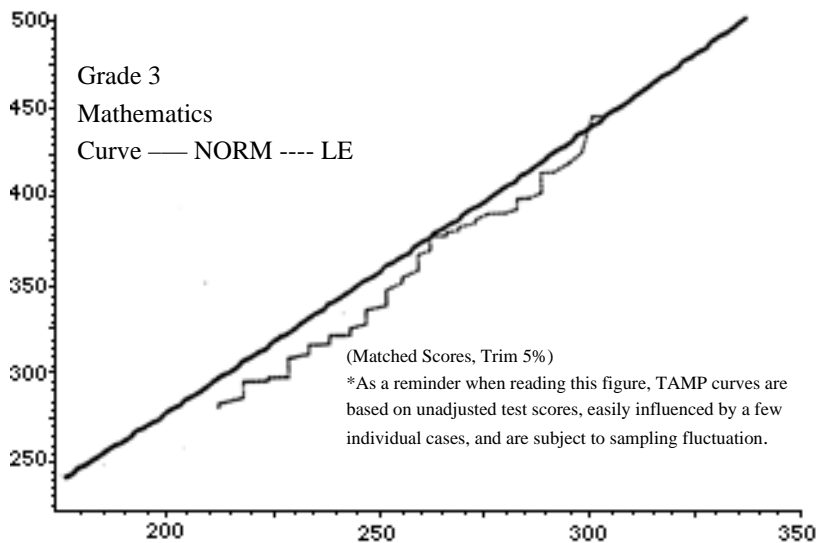
Figures 11 and 12
Math Grade 3 vs. Grade 1*

Tamp Curves: Norming Population and Early-Exit Program



Grade 1 Mathematics

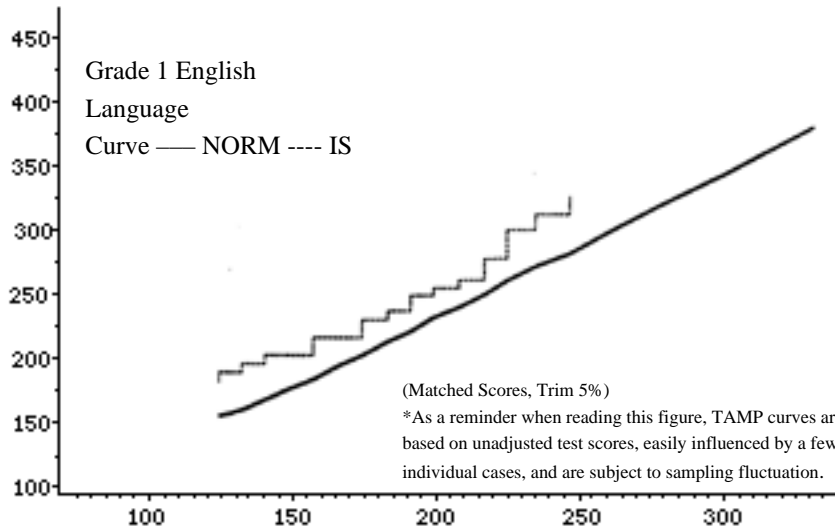
Tamp Curves: Norming Population and Late-Exit Program



Grade 1 Mathematics

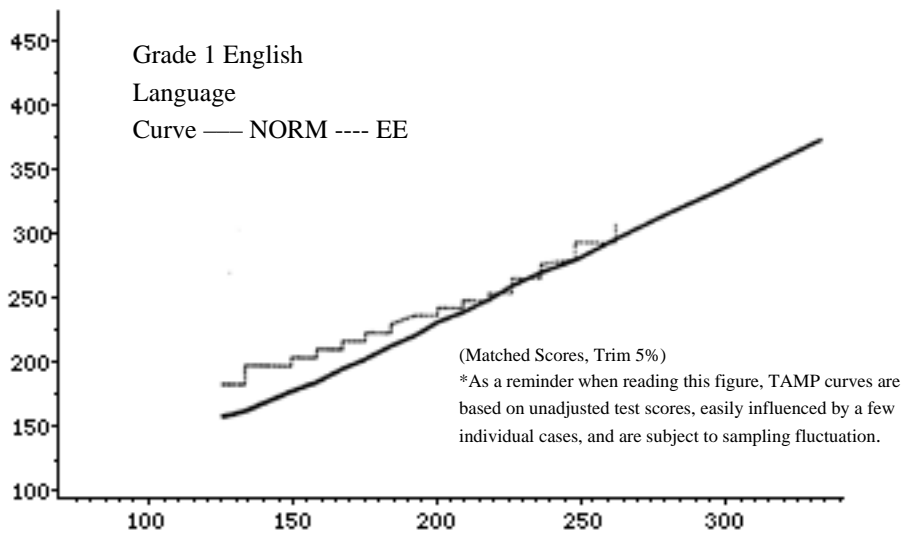
Figures 13 and 14
English Language Sprint 1 vs. English Language Spring K*

Tamp Curves: Norming Population and Immersion Strategy Program



Spring K English Language

Tamp Curves: Norming Population and Early-Exit Program

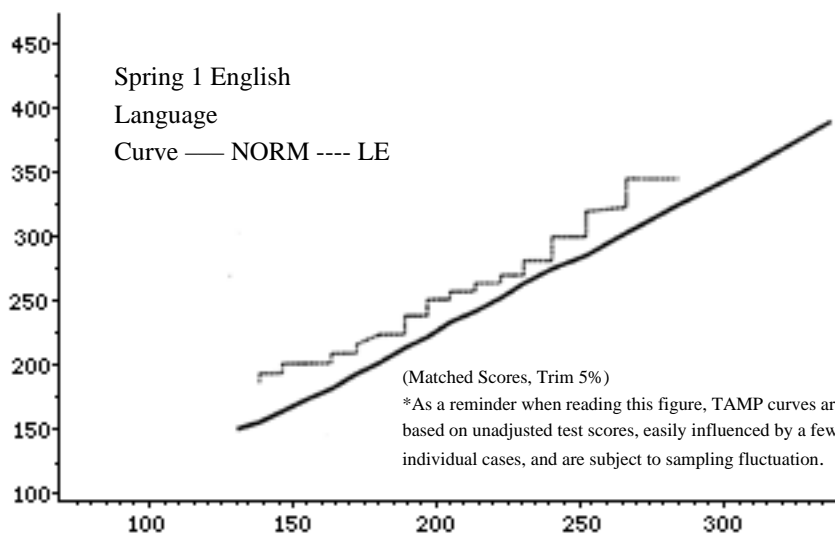


Spring K English Language

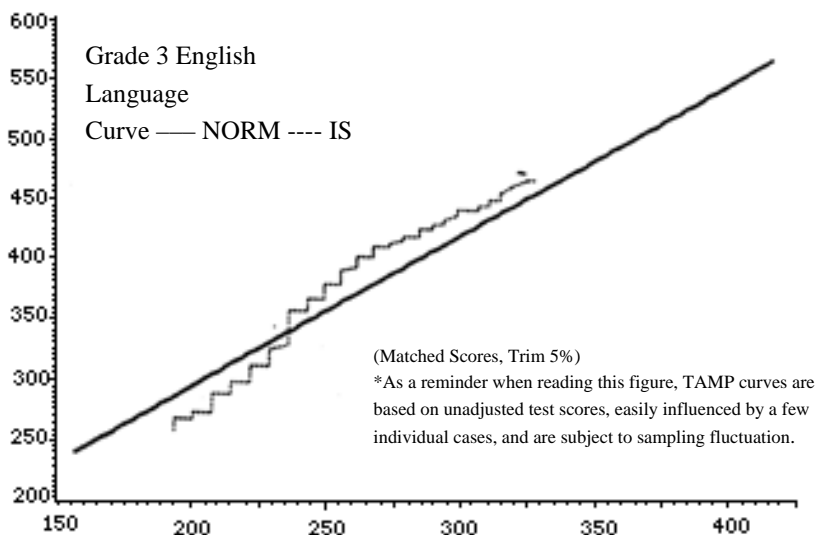
Figures 15 and 16

English Language Sprint 1 vs. English Language Spring K*

Tamp Curves: Norming Population and Late-Exit Program



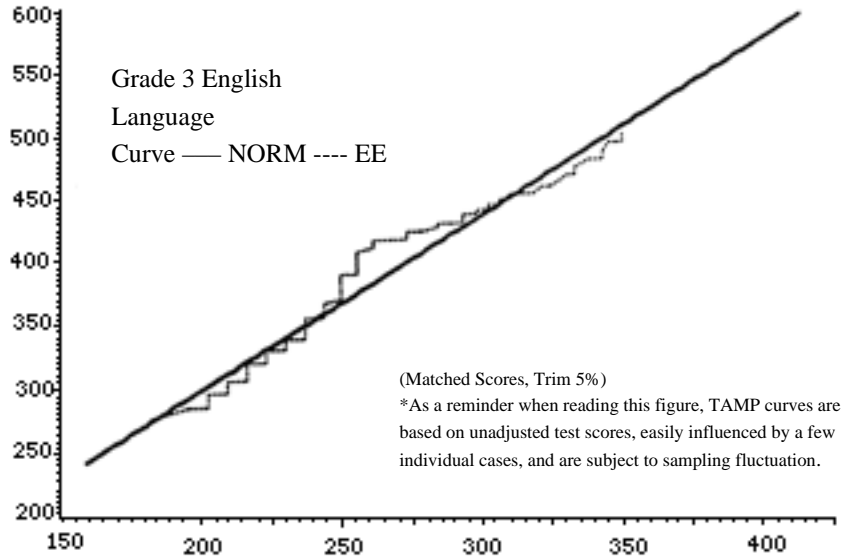
Spring K English Language
Tamp Curves: Norming Population and Immersion Strategy Program



Grade 1 English Language

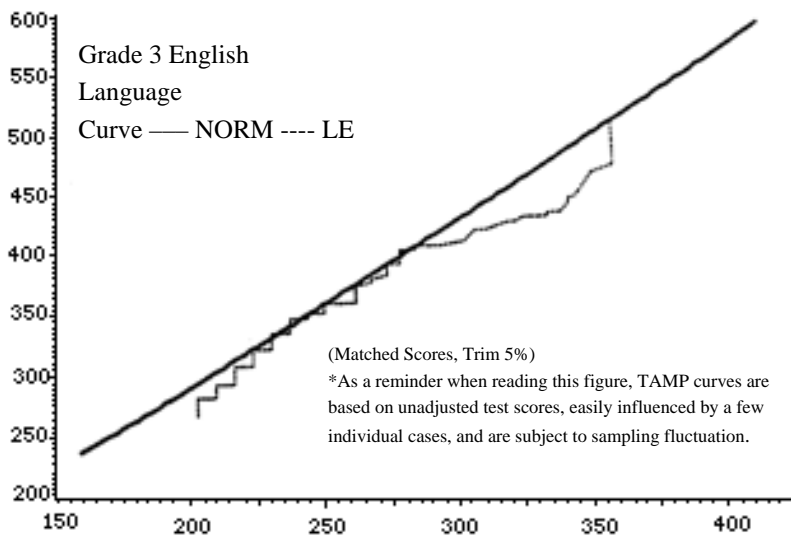
Figures 17 and 18
English Language Grade 3 vs. Grade 1*

Tamp Curves: Norming Population and Early-Exit Program



Grade 1 English Language

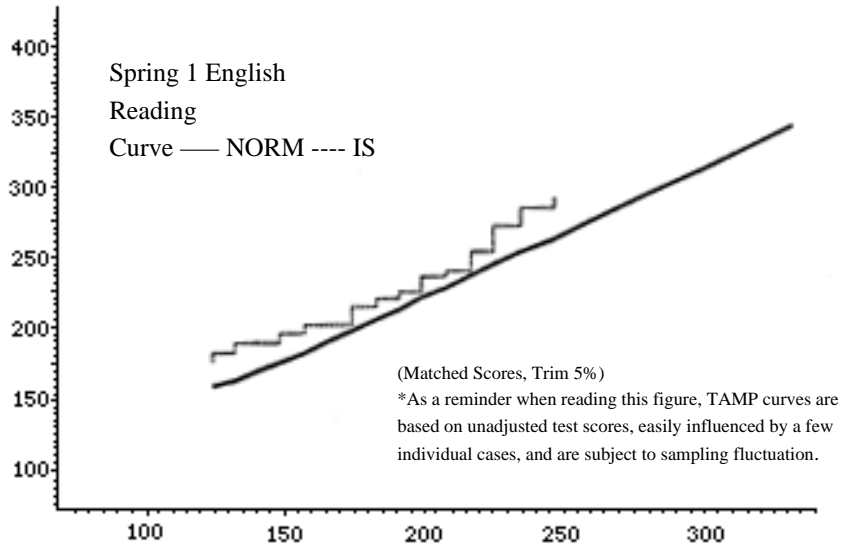
Tamp Curves: Norming Population and Late-Exit Program



Grade 1 English Language

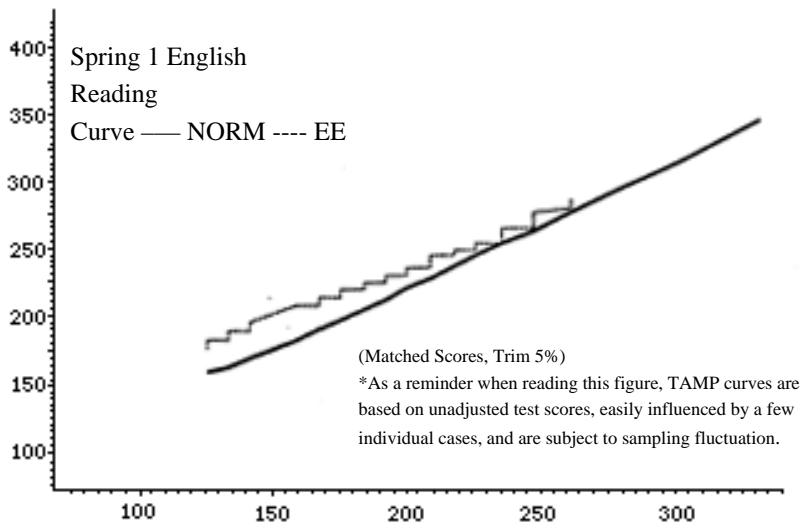
Figures 19 and 20
English Language Sprint 1 vs. English Language Spring K*

Tamp Curves: Norming Population and Immersion Strategy Program



Spring K English Language

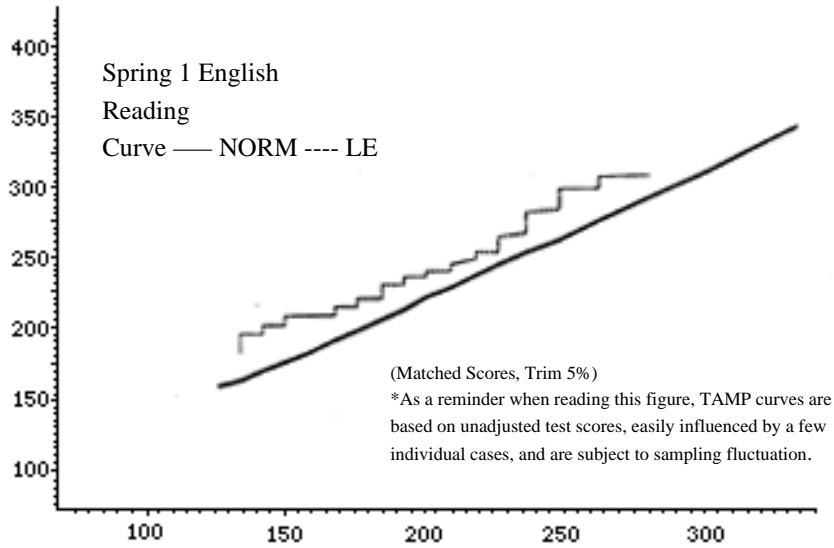
Tamp Curves: Norming Population and Early-Exit Program



Spring K English Language

Figures 21 and 22
English Language Sprint 1 vs. English Language Spring K*

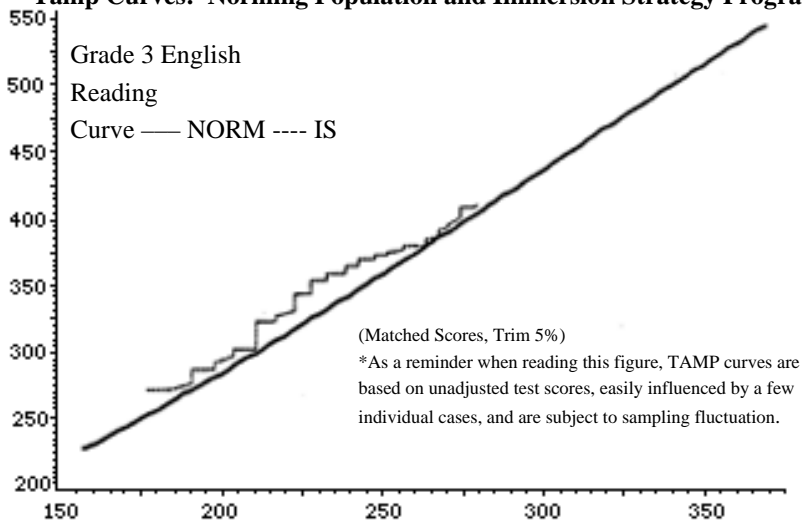
Tamp Curves: Norming Population and Late-Exit Program



Spring K English Language

English Reading Grade 3 vs. Grade 1*

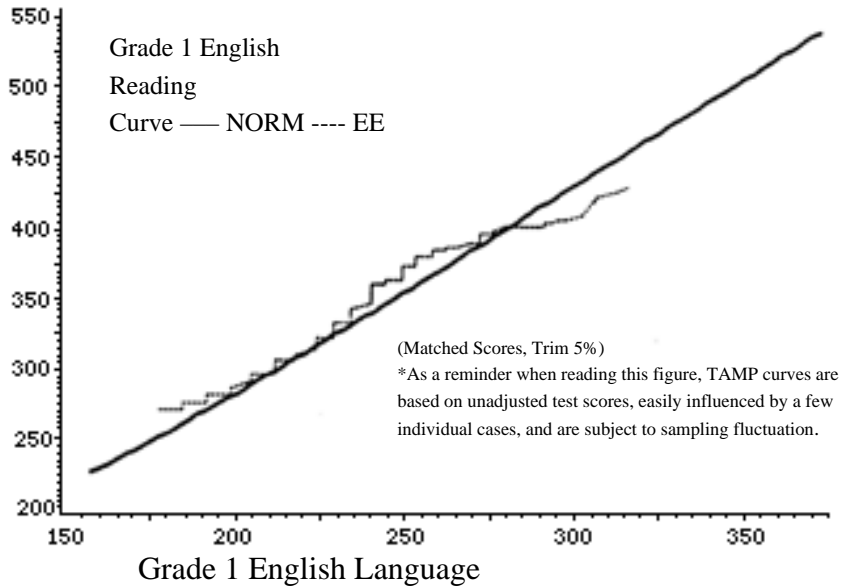
Tamp Curves: Norming Population and Immersion Strategy Program



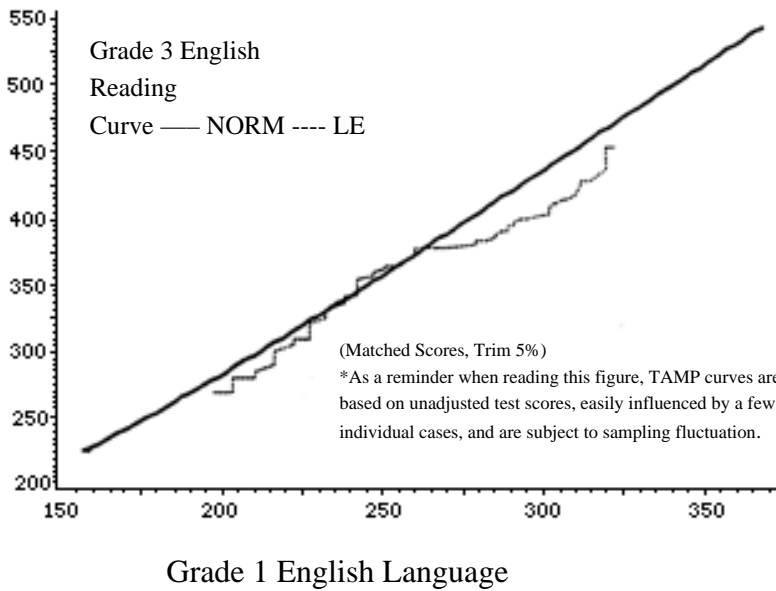
Grade 1 English Language

Figures 23 and 24 English Reading Grade 3 vs. Grade 1*

Tamp Curves: Norming Population and Early-Exit Program



Tamp Curves: Norming Population and Late-Exit Program



Is there a difference in the rate at which students in each of the late-exit sites increased their skills in mathematics relative to the norming population used in this study from first grade to sixth grade?

Yes. The TAMP curves suggest that students in site E, who were provided with substantial instruction in their primary language and a slow phasing in of English instruction over time, consistently realized the greatest growth in mathematics skills, faster than this norming population. Students in site D, who were exposed to a consistent proportion of instruction in their primary language (approximately 40%), realized growth in mathematics that was equal to this norming population. Noteworthy is that after covariates were considered, there was no difference in the achievement of students in sites D and E, although students in site E had more stress in their environment and fewer resources than site D students.

In contrast, it appears that students in site G who received about 40% of their instruction in their primary language in kindergarten and first grade, but were then abruptly moved into almost exclusive instruction in English (comparable to that provided in early-exit and immersion strategy programs), experienced a marked decrease in growth in mathematics skills over time relative to this norming population. It seems that these students lost ground relative to this norming population, paralleling what is commonly observed for disadvantaged students in the general population (Bureau of the Census, 1985; Burton and Jones, 1982; Escutia and Prieto, 1987; Levin, 1986; National Center for Education Statistics, 1989; National Commission on Secondary Education for Hispanics, 1984; Orum, 1986; Rumberger, 1983; United States General Accounting Office, 1987; Vargas, 1988) (see Figure 25).

Is there a difference in the rate at which students in each of the late-exit sites increased their English language skills relative to the norming population from kindergarten to sixth grade?

Yes. As in mathematics, by the end of sixth grade it appears that the late-exit students in site E, who started below average and had had the most opportunity to develop their primary language, increased their English language skills faster than the norming population used in this study. If sustained over time, this would suggest that these students are gaining on this norming population and would eventually approximate the average English language achievement level of this norming population. Students in site D, who received less, although considerable, primary language instruction, appeared to increase their English language skills at the same rate as this norming population. It seems that these students are keeping their position relative to this norming population. Site G students, who were transitioned quickly into English in second grade, appeared to exhibit a decrease in their rate of growth in English language skills, suggesting that these students, regardless of their skill levels in third grade, were losing ground relative to this norming population (see Figure 26).

Is there a difference in the rate at which students in each of the late-exit sites increased their English reading skills relative to the norming population from kindergarten to sixth grade?

Yes. As in mathematics and English language, it seems that those students in site E, who received the strongest opportunity to develop their primary language skills, realized a growth in their English reading skills that was greater than that of the norming population used in this study. If sustained, in time these students would be expected to catch up and approximate the average achievement level of this norming population. It appears that once again site D students, who were provided with two-fifths of their instruction in their primary language through grade five, seemed to increase their English reading skills at the same rate as this norming population. That is, they kept up with this norming population. Site G students, who were abruptly transitioned into English instruction, appeared to experience a slower increase in English reading skills from third grade to sixth grade relative to this norming population; they seemed to be losing ground (see Figure 27).

In sum, a consistent pattern seems to be emerging in the TAMP figures. It appears that students who were provided with a substantial and consistent primary language development program learned mathematics, English language, and English reading skills as fast as or faster than the norming population used in this study. As their growth in these academic skills is atypical of disadvantaged youth, it provides support for the efficacy of primary language development in facilitating the acquisition of English language skills. The TAMP curves using unadjusted scores suggest that limited-English-proficient students who are abruptly transitioned into an English-only instructional program appear to lose ground (in terms of decelerating rate of growth) relative to this norming population in all three content areas, a pattern which is consistent with the growth of disadvantaged students in the general population (Bureau of the Census, 1985; Burton and Jones, 1982; Escutia and Prieto, 1987; Levin, 1986; National Center for Education Statistics, 1989; National Commission on Secondary Education for Hispanics, 1984; Orum, 1986; Rumberger, 1983; United States General Accounting Office, 1987; Vargas, 1988). While the HLM analysis confirms the lower growth in mathematics for students who are transitioned abruptly, it notes that the growth rates in language and reading are the same as those of students in the two late-exit sites

wherein substantial amounts of primary language instruction are provided. Nonetheless, if the pattern of observed growth rates are sustained over time, students with substantial amounts of primary language instruction would be expected ultimately to outperform those students who are transitioned quickly into English instruction in English language and reading skills.

These findings suggest that providing LEP students with substantial amounts of instruction in their primary language does not impede their acquisition of English language skills, but that it is as effective as being provided with large amounts of English. Of equal importance is the finding that students who are provided with substantial amounts of primary language instruction are also able to learn and improve their skills in other content areas as fast as or faster than the norming population, in contrast to students who are transitioned quickly into English-only instruction.

CONCLUSIONS

FIDELITY OF TREATMENT

The three programs in this study represent three distinct instructional models, differing primarily in the amount and duration of English and Spanish used for instruction. The language use patterns are consistent with those of their respective theoretical models as outlined in this study, i.e., immersion strategy, early-exit, and late-exit transitional bilingual programs.

Data show that the programs in this study are more similar than different in the instructional strategies used. Regardless of the language used or the language classification of students, the basic instructional paradigm is explanation, question, command and feedback. With two exceptions, the three programs are comparable with respect to the quality of instruction provided (i.e., engaged academic time, use of realia, complexity of language, content, or context of utterances). Two indicators of program quality suggest an advantage of late-exit programs. First, late-exit teachers assign and correct homework more often than either immersion strategy or early-exit teachers. Second, late-exit language minority parents are more involved in their children's schooling than parents of children in the immersion strategy or early-exit programs.

Of concern is that the instructional strategies used by all teachers in all three programs make for a passive language learning environment, limiting students' opportunities to develop more complex language and critical thinking skills.

Contrary to expectations, immersion strategy and early-exit programs tend not to reclassify or mainstream their students early, but to keep them in their respective programs for at least five years (i.e., through grade four). Consistent with their instructional model, late-exit students are reclassified more slowly than immersion strategy or early-exit students, and are mainstreamed after grade six. Thus, at least through grade four, all three programs are comparable in that few, if any, children are mainstreamed.

COMPARABILITY OF STUDENTS

With two noteworthy exceptions, students are more similar than different across the three instructional programs. Typically, students come from very low income (<\$15,000/year) households comprised of two parents and three children. While parents tend not to be born in the United States, most students are. There is support for English language skills in the home. While students use Spanish in speaking with their parents, they tend to use English with their siblings, and a mixture of both with their peers. Most media sources (television, radio, books, magazines, newspapers) also tend to be in English.

Similarities notwithstanding, proportionately more late-exit families are of the lowest income levels than are early-exit or immersion strategy families. Moreover, proportionately more immersion strategy students than either early-exit or late-exit students attended preschools where only English was spoken. As both of these characteristics have been associated with academic achievement, they are considered in the analyses of academic achievement reported in Volume II.

COMPARABILITY OF TEACHERS AND CLASSROOMS

Teachers differ markedly by program on a number of characteristics that need to be considered in the analyses of academic achievement. Late-exit teachers tend to have backgrounds similar to their students, are sufficiently fluent in Spanish to teach in it, and have advanced training in meeting the needs of language-minority students. In contrast, immersion strategy and early-exit teachers generally are not Hispanic, are not sufficiently proficient in Spanish to teach in it, and do not have as much advanced training as do

late-exit teachers. Teachers in each program differ markedly in their attitudes on how limited-English proficient students should be taught, essentially reflecting the underlying rationale of their respective instructional models.

While classrooms across programs are similar in class size (21.8 to 27.1 students per class), late-exit classrooms have noticeably fewer English-only speaking students than immersion strategy or early-exit classrooms. Teachers in immersion strategy and early-exit classrooms tend to group more of their students into smaller groups than late-exit teachers who tend to use larger student groups. These differences are considered in the analyses of academic achievement.

COMPARABILITY OF SCHOOLS AND DISTRICTS

There are basic program differences in school characteristics which also need to be taken into account when effecting the achievement analyses. While all school sites report substantial numbers of their student body as language-minority (one-third to three-fourths) and low income, school sites having only an early-exit or both an immersion strategy and an early-exit program have higher concentrations of language-minority and fewer English-only students than school sites having solely an immersion strategy or a late-exit program. Nonetheless, school sites having both an immersion strategy and an early-exit program provide the most heterogeneous groupings of students. That is, while they have the fewest native English speakers at their school sites, these students are grouped with language-minority students. In contrast, other school sites having only one program model (i.e., immersion strategy-only, early-exit-only, or late-exit-only) tend to segregate their language-minority students from native English speakers for instruction. Also, school sites having an immersion strategy program have the highest proportion of their student body as low income as compared to other school sites.

Across programs, school sites have comparable procedures for assessing the language proficiency skills among language-minority students. All school sites have written curricula for all content areas, and more than half of the early-exit and late-exit school sites have such curricula for Spanish language arts and mathematics.

Consistent with their greater numbers of language-minority students, early-exit/immersion strategy districts have identified more of their student body as LEP districts. However, districts in all three programs show a consistent decline in the proportion of students identified as grade level increases. Of critical importance, contrary to expectations, immersion strategy and early-exit school districts do not mainstream their students at a greater rate than do late-exit districts. While their students are reclassified from LEP to FEP, immersion strategy and early-exit districts tend to keep their students in their respective programs for at least five years (i.e., through grade four). Lack of data for grades five and six for immersion strategy and early-exit students reflects the limits of the study.

RELATIVE EFFECTIVENESS OF IMMERSION STRATEGY AND EARLY-EXIT TRANSITIONAL BILINGUAL EDUCATION PROGRAMS

There is no difference in the level of achievement or rate of growth in achievement in mathematics, English language, or English reading between students in an immersion strategy program and an early-exit program after four years in their respective programs (i.e., end of third grade).

EFFECTIVENESS OF LATE-EXIT TRANSITIONAL BILINGUAL EDUCATION PROGRAMS

Limited-English-proficient students can be provided with substantial amounts of primary language instruction without impeding their acquisition of English language and reading skills.

Limited-English-proficient students who are provided with substantial instruction in their primary language (40%) successfully continue to increase their achievement in content areas such as mathematics, while they are acquiring their skills in English; in contrast, students who are quickly transitioned into English-only instruction tend to grow slower than the norming population.

Students in all three late-exit instructional programs appear to exhibit greater growth from spring of first grade to spring of third grade than from spring of third grade to spring of sixth grade. While the deceleration in growth from grade three to grade six mirrors that of the norming population, late-exit students, especially those in the site that is most faithful to the late-exit model, are still growing faster than the norming population.

IMPLICATIONS

1. Limited-English-proficient students in all three instructional programs improved their skills in mathematics, English language, and reading as fast as or faster than students in the general population. Providing substantial instruction in the child's primary language does not impede the learning of English language or reading skills. On the other hand, providing a limited-English-proficient student with English-only instruction through grade three, as was done in the structured English immersion strategy program, is as effective as an early-exit program in helping limited-English-proficient students acquire mathematics, English language, and reading skills.
2. Contrary to the objectives of immersion strategy and early-exit programs, most students remain in these programs much longer than expected. It is clear that immersion strategy and early-exit teachers believe that the majority of limited-English-proficient students would be better off if they remain in the programs for more than three years. The limited evidence from this study suggests that limited-English proficient students may need prolonged assistance if they are to succeed in an English-only mainstream classroom.
3. There is a need to improve the quality of training programs for teachers serving language-minority students both at the university and school district levels, so that they can provide a more active learning environment for language and cognitive skill development. Effective training models do exist which can help teachers provide a more active learning environment for language and cognitive skill development. Efforts should be made to disseminate this information and support implementation of the models.
4. Parental involvement appears to be greatest in the late-exit program. This suggests that schools should explore how they might use the home language of their students to engage parents in the schooling of their children.
5. There is some evidence that suggests that when limited-English-proficient students receive most of their instruction in their home language, they should not be abruptly transferred into a program that uses only English.

Executive Summary of the *Final Report: Longitudinal Study of Structured English Immersion Strategy, Early-Exit and Late-Exit Transitional Bilingual Education Programs for Language-Minority Children*, February 1991, as prepared for the United States Department of Education under Contract No. 300-87-0156.

A photocopy of the report is available through [NCELA](#).

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