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Non-Language Characteristics of Instructional Services for Language-Minority Students

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Abstract

Educational policies toward immigrant and language-minority populations are a matter of considerable debate, as is the scientific research that forms the basis for these policies. This study examined the educational programs and instructional services that public elementary schools in the United States mainland (state of New Jersey) provided to children arriving from Puerto Rico. (N = 251 children, 155 classrooms, 71 schools.) The data show that the various types of school programs that educators design especially for language-minority students (such as English-as-a-Second-Language and bilingual education programs) differ from each other and from mainstream English-monolingual programs not only in the features that pertain to the language of instruction but also in other characteristics, frequently overlooked: for example, the number and types of instructors per student, instructors' qualifications, and fragmentation of instruction. These program characteristics are, at least in theory, as likely to influence student achievement as are those that pertain to the language of instruction. The findings raise questions about the validity of conclusions often drawn from studies of the effectiveness of bilingual education or other school programs for language-minority populations.

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Introduction

What instructional services do public schools in the United States provide to children who have recently arrived in this country? How do schools structure and organize instruction for these new arrivals? These questions underlie some of the most controversial policy debates and difficult challenges for American education.

Schools in the United States offer a wide variety of educational programs to language-minority students. How do these programs differ from each other and from regular English-monolingual programs? When asked to identify the features that distinguish the various types of programs from one another, educators and policy analysts typically focus exclusively on the programs' characteristics that have to do with the language of instruction, less frequently noting other of the programs' features. Because of this exclusive focus, any observed differences in student outcomes among types of programs have often been attributed to the programs' characteristics that pertain to the language of instruction. For example, typically when researchers have reported a difference in achievement gain between an English-monolingual program and a bilingual education program (e.g., after controlling for student characteristics), analysts have often assumed that the sole or main cause of such an outcome difference is that one program uses only English as the medium of instruction and the other uses both English and the students' native language. (See August & Hakuta, 1997; and Meyer & Fienberg, 1992 for research reviews.) Policies toward language-minority students base their rationales largely on this assumption—that is, on the assumption that differences in student outcomes among types of programs are a consequence of the programs' features that pertain to the language of instruction. Such policies include, for instance, California's controversial Proposition 227, voted into state law, which essentially aims to dismantle bilingual education programs in public schools (California Education Code, Chap. 3).

Yet, program features besides the language of instruction may explain program-type differences in student outcomes. If, say, an English-monolingual program produced

achievement superior to that of a transitional bilingual education program, this superiority can be validly attributed to the language of instruction only if the two programs did not differ in any other educationally significant respect. If types of programs differ in ways besides those that pertain to the language of instruction, and if such differences can plausibly explain differences in student outcomes, we must then reconsider the interpretations of, and hence the conclusions from, many previous studies, and we must reexamine the policy formulations that rest on that body of work.

It is often argued, for instance, that school programs for language-minority students are sometimes structured or organized in ways that coincidentally create fragmentation of instruction, a fragmentation that may offset the potential benefits of the programs' language-related features. If this hypothesis is valid, then the policy focus should be not only on the programs' language-related features but also on other program characteristics, particularly those that may produce unintended negative side effects.

Complicating these questions about differences among types of programs are variations among programs of any particular type. It is frequently assumed that all or most programs of any given type are generally similar—or at least more similar to one another than to those of another type. How wide is the variability among programs of the same type? For example, do programs of the same type have teachers with similar qualifications? If significant resemblance occurs generally among programs of a particular type, then the student outcomes from a sample of such programs can reasonably be attributed to the type and generalized to others of that type. If, however, significant variation occurs among programs of a particular type, then causal attributions of student outcomes to the type—and, therefore, generalizations to others of that type—are hazardous. Nevertheless, language education policies (e.g., Proposition 227) often rest on the assumption that all or most programs that share a label also share particular instructional features.

This study explored these concerns, describing the educational programs that elementary schools in New Jersey, a state in the northeastern United States, provided to

children who arrived from Puerto Rico, a Spanish-speaking island in the Caribbean.[1] The study examined specific characteristics of the instructional services that the children received during the first year following their arrival stateside. By describing these characteristics separately by type of program, this report presents an empirical profile of the various instructional approaches. These data (a) provide a context for better understanding the school environments faced by this population of children and by others of similar background, and (b) delineate boundaries of valid generalization concerning the characteristics of particular types of educational programs.

A hypothesis guiding the choice of some of the variables for this inquiry is that a school, in attempting to meet the educational needs of language-minority students, may organize its instructional services in a manner that creates potentially harmful fragmentation and discontinuity of instruction. Previous research (e.g., Birman et al., 1987; U.S. Department of Education, 1993) has implicated two factors in fragmentation: multiple instructors and the spatial organization of instruction.

As the number of instructors assigned to a student increases, so increase the magnitude and complexity of the challenge of coordinating and jointly planning instruction, the tendency to compartmentalize subjects, and hence the difficulty of establishing and maintaining a cohesive, integrated program of instruction. The present study, therefore, asked: Does the child receive instruction in all the subjects of his or her curriculum from a single instructor or is the child instead passed from one instructor to another for instruction during the school day (or week)? From how many instructors besides the homeroom classroom teacher does the child receive instruction? How much school time per week does the child spend with these instructors? For how many subjects? Which particular subjects?

Concerning the spatial organization of instruction, the potential for fragmentation is likely greater if the student is removed from his or her homeroom classroom and taken to another location in the school to be given instruction, rather than receiving such instruction inside. Thus, the present analyses asked: If the child takes instruction from instructors besides

the homeroom classroom teacher, does it occur outside the child's homeroom classroom (pullout), inside (push-in), or both? How much time does the child spend in each setting?

If a program is indeed structured or organized in a way that may produce fragmentation, what strategies, if any, do instructors use in order to avoid or minimize the potentially negative effects of this fragmentation? The present study answered this question by identifying the instructors' approaches to coordinating and jointly planning instruction and by ascertaining the extent of these efforts and the time devoted to them.

The study also identified the number and types of subjects in which the children usually missed classroom instruction as a consequence of being passed from one instructor to another during the school day or week. One consequence of pullout instruction is that the student taking it may not receive instruction in the subjects taught to the rest of the class while he or she is taking the pullout instruction. To examine this issue, the present analyses asked: Does the child usually miss classroom instruction in at least one subject as a consequence of being passed from one instructor to another for instruction during the school day or week? If yes, in how many subjects? Which specific subjects?

Another potential form of fragmentation of instruction is the discontinuity that may occur between a child's educational programming in Puerto Rico and in the U.S. mainland. Such discontinuity can occur if instructors lack information about their students' past schooling experiences. If a child's mainland teachers are informed about the child's educational history in Puerto Rico, they may then use that information to optimize continuity in the particular child's educational programming. This study inquired, Are children's educational records transferred from their schools in Puerto Rico and made available to their mainland teachers?

Also examined in this study were the types of instructors. For example, if a child was taking instruction in English reading from an instructor other than the homeroom classroom teacher, the study then asked: Is that instructor a reading specialist teacher, some other type of teacher, a teacher's paraprofessional aide, or a parent volunteer?

Additional variables examined in this study include the length of the school day (i.e., the time the child spends daily in classes); student transportation (i.e., whether the child is bused to a school away from his or her neighborhood); school attendance (i.e., absenteeism and tardiness); and the amount of, and teachers' expectations for, the child's homework.

This report describes each type of program and compares the various types in regard to all the aforementioned non-language characteristics. Analyses tested the data for statistical significance, thus highlighting important differences and similarities among types of programs and among programs of each type. The report closes with a discussion of policy implications, focusing on concerns the results raise about the validity of conclusions that have typically been drawn from studies of the effectiveness of bilingual education and of other school programs for language-minority students.

Method

Variables

Data on the variables listed below were obtained individually for each focal child, as described in a later section. The term teacher refers only to professional teachers, whereas instructor, a more general term, may refer to any person who provides instruction (e.g., a professional teacher, a teacher's paraprofessional aide, a parent volunteer). The terms teaching and instruction are used interchangeably. All references are to events in the focal child's mainland school during the first year following his or her arrival from Puerto Rico.

- Instructor besides the homeroom classroom teacher is a dichotomous variable (i.e., 1 = no, 2 = yes) recording whether the child receives instruction (in school) from at least one instructor besides the child's homeroom classroom teacher. As used in this report, references to instructors besides the homeroom classroom teacher exclude physical education instructors.

- Four dichotomous variables identify the subjects that the child takes from instructors besides his or her homeroom classroom teacher (0 = no, 1 = yes): English-as-a-Second-Language (ESL), remedial English reading, remedial mathematics, and other subjects.
- Three dichotomous variables indicate the settings wherein the child receives instruction from instructors besides his or her homeroom classroom teacher (1 = no, 2 = yes): only inside the child's homeroom classroom, only outside, or both inside and outside.
- Two variables measure, separately by setting, the quantity of time the child spends receiving instruction from instructors besides the child's homeroom classroom teacher; they are measured in minutes per week, for a typical week of school: time outside the child's homeroom classroom and time inside. Their sum is the child's total time with instructors besides the homeroom classroom teacher.
- Twelve dichotomous variables record the types of instructors who provide instruction to the child besides his or her homeroom classroom teacher (1 = no, 2 = yes): reading specialist teacher, mathematics specialist teacher, ESL teacher, bilingual education teacher, learning disabilities/special education teacher, teacher of the gifted and talented, general-classroom teacher's paraprofessional aide, bilingual education teacher's paraprofessional aide, ESL teacher's paraprofessional aide, volunteer, tutor, and other types of instructors.
- Misses classroom instruction, a dichotomous variable, encodes whether the child usually misses classroom instruction in at least one subject as a consequence of being passed from one instructor to another for instruction during the school day or week (1 = no, 2 = yes). The subjects in which the child thus misses classroom instruction are identified by 11 dichotomous variables (1 = no, 2 = yes): English reading, English language arts, Spanish reading, Spanish language arts, mathematics, science, social studies, ethnic heritage, art or music, physical education, and other subjects. The sum of affirmative responses across these eleven variables is the number of subjects missed; that is, the approximate number of subjects in which the child usually misses classroom instruction as a consequence of being passed

from one instructor to another for instruction during the school day or week. An affirmative response to "other subjects" counts as a single subject.

- Coordination of instruction and joint planning is a dichotomous variable signifying whether the child's instructors (including his or her homeroom classroom teacher) do any coordination of instruction and/or joint planning (1 = no, 2 = yes). The extent of coordination of instruction and joint planning is rated on a 5-point scale: 1 = the child's instructors do not do any coordination of instruction/joint planning, 2 = they do a little coordination of instruction/joint planning, 3 = some, 4 = a fair amount, and 5 = a great deal. The instructor time dedicated to coordination and joint planning is the number of minutes per week (during a typical week of school) that the child's instructors spend in coordinating instruction and joint planning; specifically, it is the sum of the quantities of time thus spent by all the child's instructors.

- Six dichotomous variables encode the specific approaches to coordinating instruction/joint planning that the child's instructors use (0 = no, 1 = yes): informal discussions between (or among) instructors; formal meetings; curriculum/materials; child report (i.e., through what the child says he or she is learning from the other instructor); observation (i.e., an instructor watches the other instructors working with the child); and other approaches. The sum of affirmative responses across these six variables is the approximate number of approaches to coordinating/joint planning that the child's instructors use. An affirmative response to "other approaches" counts as a single approach.

- School records from PR is a dichotomous variable signifying whether the child's school records from Puerto Rico have been transferred and made available to his or her stateside teachers (1 = no, 2 = yes). The transfer of records may occur either directly between the school in Puerto Rico and the stateside school or informally through the child's parent or guardian. The term school records refers to one or more of the following items: report cards, grades, test scores, lists of subjects taken, teachers' notes, cumulative records, and transcripts.

- Time in classes is the number of minutes per day during a typical school day that the child spends in classes in school (counting all classes; it excludes recess, lunch, snack time, time spent changing classes, and study hall).

- Two variables focus on homework: Homework frequency is a 5-point scale expressing how often the child is given homework, considering all classes and all instructors: 1 = never, 2 = about once a month, 3 = about twice a week, 4 = two or three times a week, 5 = more than three days a week. Teacher's homework expectations is the number of minutes per week (in a typical week of school), including weekend that, in the estimation of the child's homeroom classroom teacher, the child should spend doing homework in order to complete the assigned homework (considering all the child's classes and instructors).

- School busing encodes whether the child is usually bused to the school from another neighborhood (1 = no, 2 = yes).

- Two variables measure school attendance: Absenteeism rate is the percentage of school days the child was absent from the particular school during his or her focal year (computed as the number of school days the child was absent from the school during that year / the number of school days the child was enrolled in that school during that year x 100). Similarly, tardiness (also called lateness) rate is the percentage of school days the child was tardy (i.e., arrived late).

- Migration wave classifies the child as belonging to either the first or the second annual migration wave, as described in the Sample section (1 = first wave, 2 = second wave).

- Grade level identifies the child's grade during his or her focal academic year (3 = third grade, 4 = fourth).

- Finally, program type, a nominal variable, identifies the type of educational program in which the child is placed. Responding to standard descriptions of specific program types and an open-ended question, the child's teacher identified the child's program type: 1 = English-language monolingual (EM) program: The child is in a regular English-language monolingual classroom, receiving no instruction designed especially for language-minority

students. 2 = English-monolingual-plus-ESL (EMESL) program: The child is in a regular English-language monolingual classroom, but also receives instruction in English-as-a-Second-Language. 3 = Transitional bilingual education(TRBI) program: Placed in a bilingual education classroom, the child receives some form of English-language instruction (e.g., ESL) but is also taught in Spanish. Instruction in and through Spanish is gradually replaced by instruction solely through English. The aim of TRBI programs is for the student to join a regular monolingual English-language program as quickly as possible. 4 = Maintenance bilingual education program: Like students in TRBI programs, the child is placed in a bilingual education classroom and receives some form of English-language instruction. Both English and Spanish are used regularly as languages of instruction. The fundamental difference between TRBI and maintenance bilingual education programs is that the latter aim to develop full proficiency in both languages. 5 = Structured immersion program: The child is in a classroom in which the subject matter is presented in English, but in a manner that students with limited English-language proficiency can understand. The students may address the instructor in Spanish when their English-language proficiency is insufficient. Spanish language arts may be taught as one of the subjects. The instructor knows Spanish but rarely uses it except when teaching it as a subject. 6 = A program different from the above.

Sample

Demographic studies (e.g., Laosa, 1998) were conducted to inform the development of the sampling plan and of the research design as part of a larger scientific investigation focusing on this population. Based on the information obtained from these demographic studies, a sample of 241 public elementary schools (27 school districts) was selected to yield a sample as representative as possible of preadolescents who migrate from Puerto Rico to urban and suburban areas and small towns in the state of New Jersey.

The enrollment records of each of these schools were then continually monitored during two full consecutive academic years (i.e., two annual migration waves). All the children who transferred in from Puerto Rico (regardless of prior migration history) to either the third or

fourth grade (or the equivalent level for ungraded classrooms) in these schools during this time were identified within approximately two months of their arrival. The children who met these sample-eligibility criteria and gave informed consents (self and parental) became research participants (i.e., focal children).

The children who met these sample-eligibility criteria were found widely and thinly scattered across the sample schools.[2] Both the consent rate and the sample retention rate were quite adequate with respect to scientific sampling standards—a successful outcome largely attributable to three factors: the investigation staff members' knowledge of the target population's culture and language; the consequent interest and desire by the target population to participate; and the considerable time and effort devoted to sample identification, recruitment, and follow-up.

The full analytic sample (i.e., N) for the present study consists of 251 focal children distributed across 155 homeroom classrooms in 71 schools. Depending on the type of information needed to answer a particular research question, analyses were performed on this sample or on a subsample of it, which consists of the focal children receiving instruction from at least one instructor besides the homeroom classroom teacher (i.e., 93.5% of N) or on both. For analytic control, the sample does not include children who had been classified by school officials as having a learning disability or mental retardation and consequently were receiving special education.

Data Collection

Each focal child was followed longitudinally, regardless of destination, from the date of his or her transfer-in from Puerto Rico. The data for the present study were collected individually for each focal child, centering on that child's programs and services in the U.S. mainland schools that he or she attended during the first academic year following his or her arrival from Puerto Rico[3] (i.e., the focal child's focal year). During their focal year, approximately one half of the focal children were in the third grade, the other half were in the fourth grade. If the child attended more than one mainland school during his or her focal year,

the analyses are based on the school in which the child spent the longest time during that year (exceptions to this rule are a few cases with missing data). The vast majority of the children who transferred out of their initial receiving schools during their focal year transferred either to other public schools in the same state or back to Puerto Rico; thus, almost all the schools for the present study are New Jersey public schools.

Detailed data on each focal child's programs and services were obtained from his or her homeroom classroom teacher, mostly through structured questionnaires; when necessary, the questionnaire was supplemented or replaced by telephone calls and site visits to examine school records and to interview school faculty and staff. The data were collected largely at or very near the end of the child's focal academic year. Each protocol was then checked by research staff who, through school visits, were generally familiar with the children and their teachers and classrooms. Protocol items with missing, ambiguous, or suspect responses were photocopied and marked with queries for the respondents, or were otherwise cross-checked with other instructors or school staff or against school records or other data collected as part of the larger longitudinal investigation. Considerable time and effort were dedicated to ensuring that the data were of the highest possible quality.

Statistical Analyses

The statistical analyses take the focal child as the unit of analysis. Computed first were the frequency distribution of the children on each variable, its mean, standard deviation, standard error of the mean, and skewness value. Also computed were two matrices of correlation coefficients—a matrix of Pearson product-moment correlations and a matrix of Spearman rank order correlations. Depending on the shape of the observed frequency distributions on a pair of variables, either one type of coefficient or the other or both were considered; the two coefficients are very similar and practically identical to each other for the vast majority of the pairs of variables. Variables with insufficient variance or with distributions too skewed to yield meaningful coefficients were excluded from the correlation matrices.

Depending on the types of variables, a coefficient may be a phi coefficient (i.e., a fourfold-point correlation, for a pair of dichotomous variables), a point-biserial correlation (for a dichotomous variable with a continuous, or graduated, variable), or a Pearson product-moment or Spearman rank-order correlation (for a pair of continuous variables). Because the size of a phi or a point-biserial coefficient is affected by extreme cuts in the distributions of cases on the variables, its magnitude is not interpretable on the same scale as a Pearson product-moment or a Spearman rank-order correlation between two normally distributed variables, particularly when extreme cuts are involved (McNemar, 1969). Hence, as expressions of the strength of relationships, the various types of correlation coefficients are not generally comparable with one another; their usefulness is as practical tests of the null hypothesis of independence.

Comparisons among types of programs. To test for differences among types of programs, analyses grouped the children by type of program and compared these groups on the dependent variables.

For comparisons involving a continuous dependent variable, one-way analyses of variance (ANOVA) tested the null hypothesis of no mean differences on that variable among the various types of programs. Two ANOVA statistics were examined: the F ratio and the eta squared (η^2) coefficient. The size of F, an index of the variance between the groups being compared relative to the variance within them, reflects the statistical probability that the observed overall difference among the means exceeds chance and thus represents a real (i.e., population) difference. η^2 is the proportion of the dependent variable's variance that is associated with, or statistically explained by, the independent variable—that is, by type of program (McNemar, 1969).

For comparisons involving a nominal dependent variable, the cross-classification of that variable against program type was analyzed to test the null hypothesis of independence between that variable and program type. The observed and expected frequencies were calculated for each cell in the contingency (cross-classification) table and, unless the expected frequencies are too small (Everitt, 1977), a Pearson chi-square value was computed and then

converted to Cramér's V, a measure of association between the independent and dependent variables (the significance level is a Pearson chi-square probability). V values can range from 0 (signifying "total" independence between the variables) to 1.00 (signifying "perfect" dependence); however, the interpretation of V in terms of the strength of an association is subject to the same caveats as are other measures of association based on the chi-square statistic (see, e.g., Norušis, 1983; Reynolds, 1977). On the other hand, as an overall test of independence, a significant V calls for rejection of the null hypothesis of independence.

For reporting purposes, the observed frequencies in each contingency table were standardized by percentaging (columns). Also examined were the adjusted residuals, which reflect the difference between observed and expected frequencies. Adjusted residuals can help identify the particular categories (i.e., the types of programs) responsible for a significant chi-square (or a significant V), since one may think of the adjusted residuals as being normally distributed with mean 0 and standard deviation 1; thus, by comparing the absolute values of the adjusted residuals with the 5% standard normal deviate, namely 1.96, one may better discern which of the adjusted residuals is significant (Everitt, 1977).

Results

Unless otherwise noted, the reference is to results based on the full analytic sample.

Tests for Effects of Migration Wave

Correlation coefficients between migration wave and the other variables were examined to test for differences between migration waves. Almost all the coefficients are near zero and nonsignificant. Only 3 of the 54 variables show a statistically significant coefficient (*p*s < .05, two-tailed tests); none of the coefficients reached an absolute magnitude greater than .15 (Appendix A). It can be concluded that generally there is no wave effect. Similarly, a contingency-table analysis for migration wave against program type yielded a nonsignificant

Cramér's V(3) value, thus showing that migration wave does not confound program type ($p > .05$; Appendix B). These results justified the pooling of waves for the other analyses.

Types of Educational Programs

The distribution of focal children by program type is as follows: 12% of the children were in English-language monolingual (EM) programs; 20% were in English-monolingual-plus-ESL (EMESL) programs; and 60% were in transitional bilingual education (TRBI). The remaining 9% were in other types of programs (OTHER), such as maintenance bilingual education and structured-immersion programs.

Test for Interaction Between Program Type and Grade Level

A contingency-table analysis for program type against grade level yielded a nonsignificant Cramér's V(3) value, thus showing that grade level does not confound program type ($p > .05$; Appendix C).

Comparisons Among Program Types

Instructors besides the homeroom classroom teacher. Fifty-five percent (55%) of the focal children in EM programs received instruction from instructors besides the homeroom classroom teacher, compared with 100%, 98%, and 100% of those, respectively, in EMESL, TRBI, and OTHER programs. This difference between EM programs and all the others is statistically significant ($p < .001$; Table 1, Figure 1).

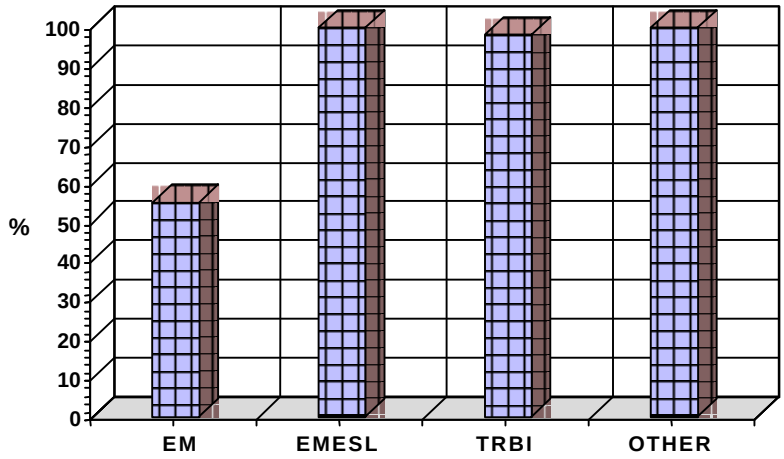

Figure 1. Percentages of children who received instruction from instructors besides the homeroom classroom teacher, by program type.

Program types differed also in the amount of time children spent with these instructors. On average, children in EM, EMESL, TRBI, and OTHER programs spent per week, respectively, 1.9, 8.4, 5.5, and 5.0 hours with instructors besides the homeroom classroom teacher ($p < .001$; Table 2, Figure 2).[4]

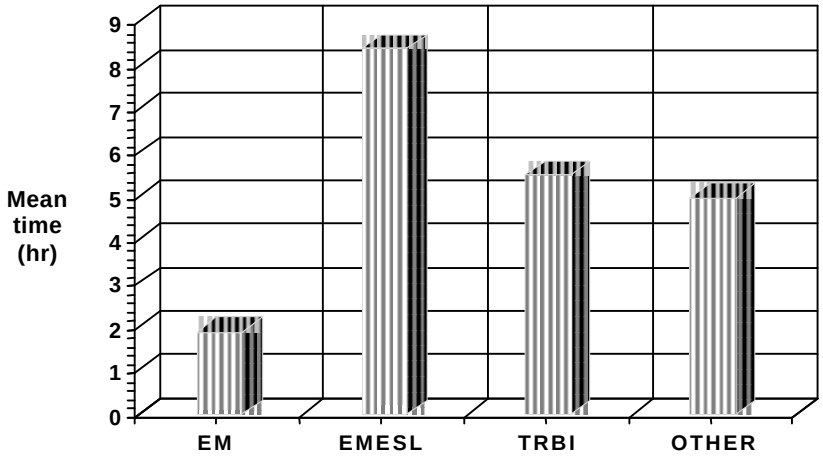

Figure 2. Mean number of hours (per week) that children spent with instructors besides the homeroom classroom teacher, by program type.

Instructional settings. Very few children received instruction from instructors besides the homeroom classroom teacher inside the homeroom classroom only. The percentages of children who did so range from 0% in OTHER to 6% in TRBI.

Most children who received instruction from instructors besides the homeroom classroom teacher did so either only outside the homeroom classroom or both inside and outside. The percentages of children who did so only outside are, respectively, 34%, 65%, 47%, and 29% for EM, EMESL, TRBI, and OTHER. The percentages who did so both inside and outside are, respectively, 17%, 33%, 45%, and 71% (Table 8, Figure 3).

On average, children in EM, EMESL, TRBI, and OTHER spent per week, respectively, 0.3, 1.0, 1.4, and 1.6 hours with instructors besides the homeroom classroom teacher inside the homeroom classroom ($p < .05$), and 1.6, 7.3, 4.1, and 3.4 hours outside ($p < .001$; Table 2, Figure 4).

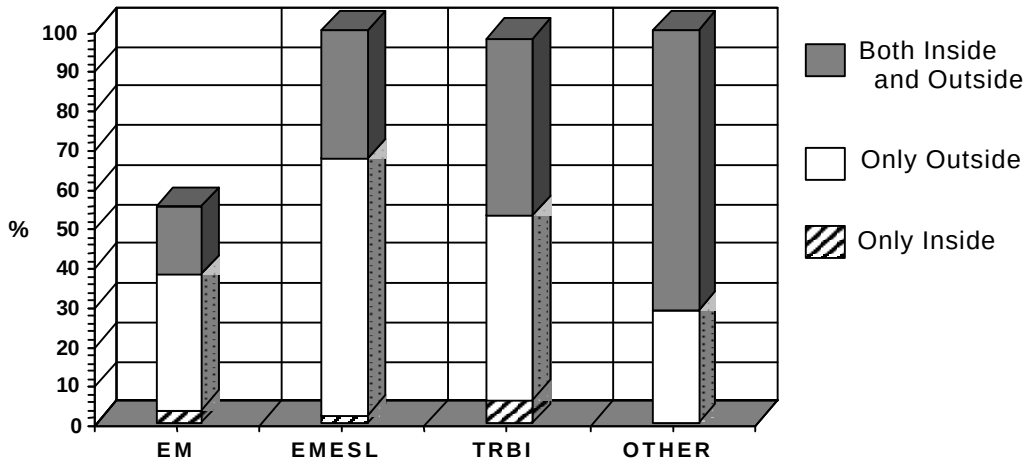

Figure 3. Percentages of children who received instruction from instructors besides the homeroom classroom teacher, by setting (i.e., inside the homeroom classroom, outside, or both inside and outside) and program type.

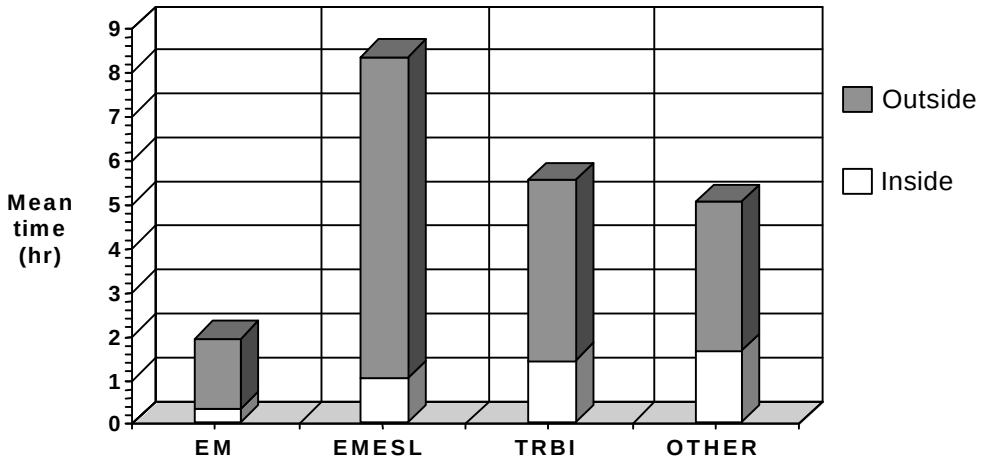

Figure 4. Mean number of hours (per week) that children spent with instructors besides the homeroom classroom teacher, by setting (i.e., inside the homeroom classroom or outside) and program type.

Missing classroom instruction. Accordingly, program types differed in the percentage of children who usually missed classroom instruction in at least one subject as a consequence of being passed from one instructor to another for instruction during the school day or week. These percentages are 21%, 76%, 24%, and 23%, respectively, for EM, EMESL, TRBI, and OTHER ($p < .001$; Tables 3 and 4; Figure 5).

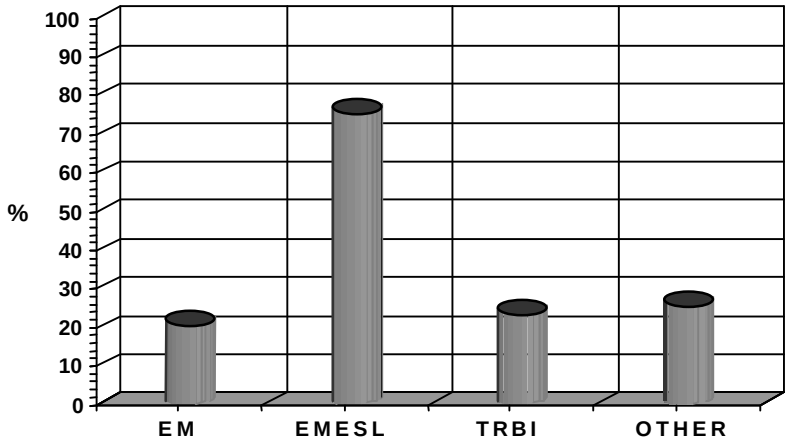

Figure 5. Percentages of children who usually missed classroom instruction in at least one subject as a consequence of being passed from one instructor to another during the school day or week, by program type.

Concerning the particular subjects in which children thus missed classroom instruction, the program types differed as follows (ps < .001): Much larger percentages of children in EMESL than in other programs usually missed classroom instruction in English reading and English language arts. (I.e., 50% and 38% of the children in EMESL programs usually missed these two subjects, respectively, whereas only 1% to 9% of those in the other programs did so; Figure 6.) Moreover, larger percentages of children in EMESL than in other programs usually missed classroom instruction in mathematics, science, and social studies. (I.e., 29%, 38%, and 33% of the children in EMESL programs usually missed these three subjects, respectively, compared with 6%, 18%, and 17% of the children in TRBI and 3% to 10% of those in EM and OTHER; Table 5, Figure 7.)

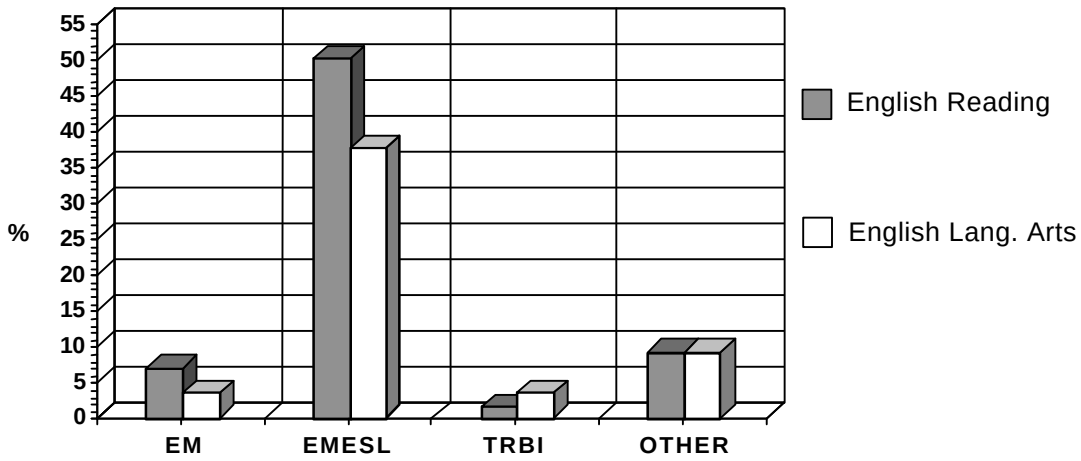

Figure 6. Percentages of children who usually missed classroom instruction in English reading or English language arts as a consequence of being passed from one instructor to another during the school day or week, by program type. (A child may miss more than one subject.)

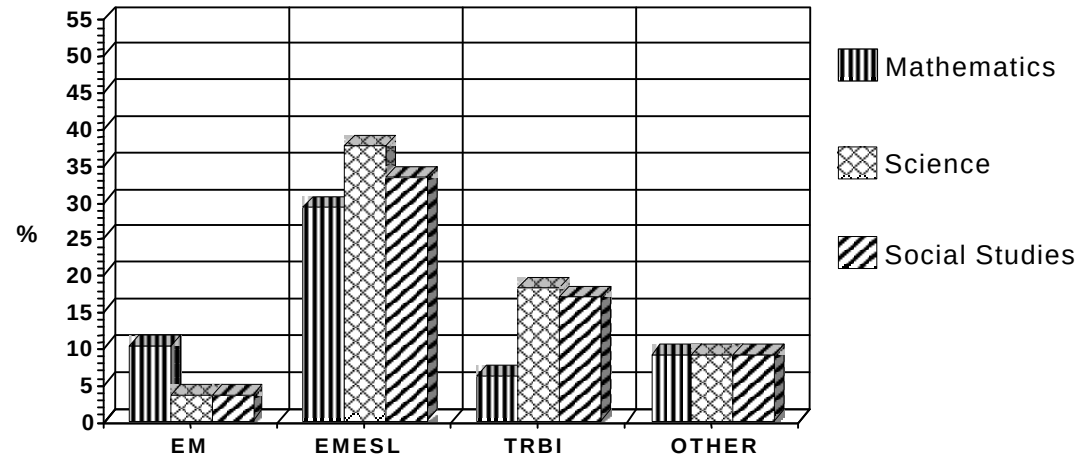

Figure 7. Percentages of children who usually missed classroom instruction in mathematics, science, or social studies as a consequence of being passed from one instructor to another during the school day or week, by program type. (A child may miss more than one subject.)

Types of instructors and subjects. Program types also differed in the types of instructors who provided instruction besides the homeroom classroom teacher (Table 6, Figures 8-10). For instance, instructors besides the homeroom classroom teacher included a bilingual

education teacher for 46%, 10%, and 14% of the children, respectively, in EMESL, TRBI, and OTHER ($p < .001$); and a bilingual education teacher's paraprofessional aide for 6%, 32%, and 23% ($p < .001$). Also, a larger percentage of children in EMESL programs than in the other types of programs received instruction from a reading specialist teacher ($p < .01$).

The vast majority of the children in EMESL, TRBI, and OTHER received instruction from an ESL teacher who was not the homeroom classroom teacher. (I.e., 94%, 91%, and 77% of the children, respectively, in these three types of programs received instruction from an ESL teacher who was not the homeroom classroom teacher. These three percentages are not statistically different from each other; Table 6, Figure 8.)

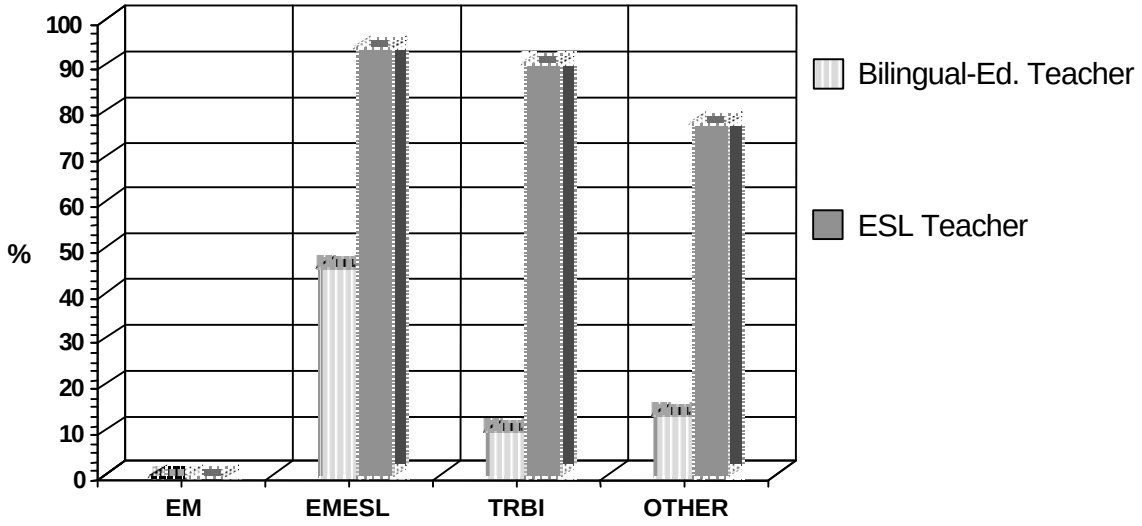

Figure 8. Percentages of children whose instructors other than the homeroom classroom teacher included bilingual education teachers and/or ESL teachers, by program type.

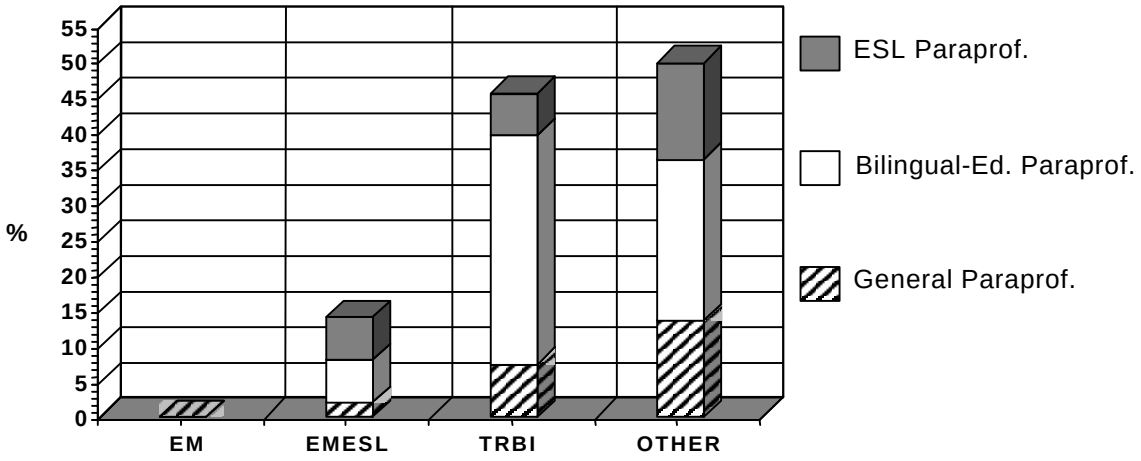

Figure 9. Percentages of children who received instruction from teacher's paraprofessional aides, by paraprofessional type (some children may have more than one type of teacher's paraprofessional aide) and program type.

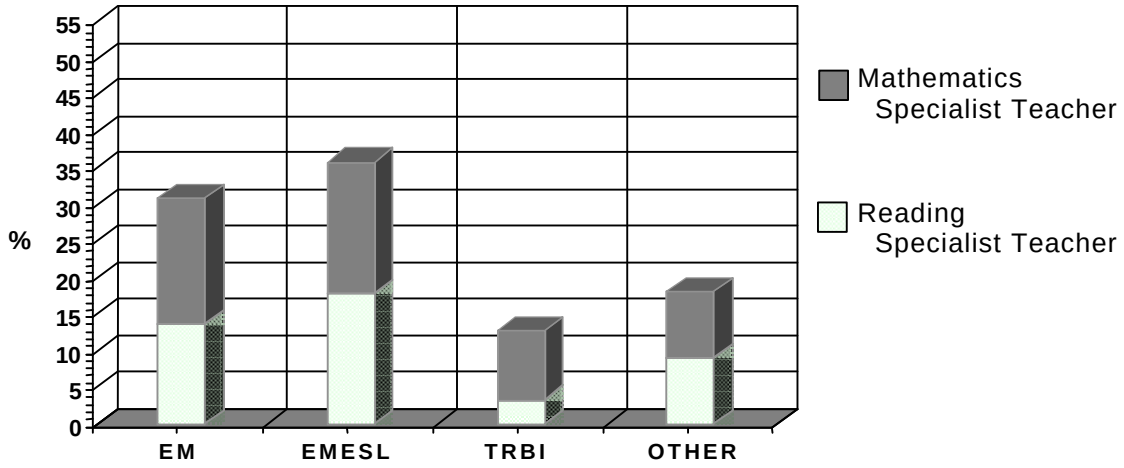

Figure 10. Percentages of children whose instructors other than the homeroom classroom teacher included mathematics specialist teachers and/or reading specialist teachers, by program type.

Differences among program types are also evident in the kinds of subjects that children took from instructors other than the homeroom classroom teacher (Table 7). For example, 24%, 48%, 12%, and 18% of the children, respectively, in EM, EMESL, TRBI, and OTHER took remedial English reading ($p < .001$); 34%, 44%, 23%, and 50% took remedial mathematics ($p < .01$; Figure 11).

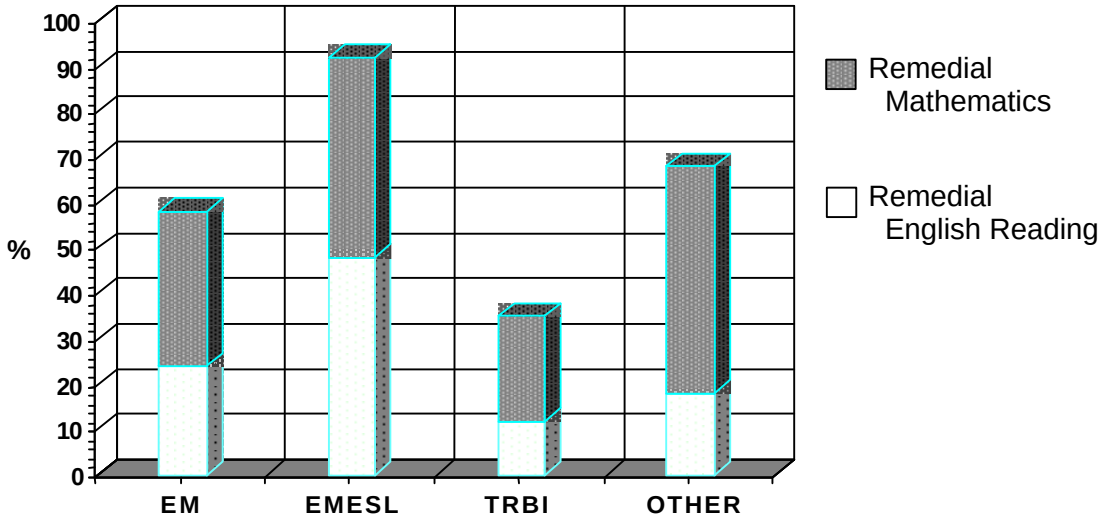

Figure 11. Percentages of children who took remedial mathematics and/or remedial English reading from instructors other than the homeroom classroom teacher, by program type.

In every type of program except EM, almost all the children took ESL. Specifically, 96%, 94%, and 82%, respectively, of the children in EMESL, TRBI, and OTHER programs took ESL

from instructors besides the homeroom classroom teacher. (These three percentages do not differ significantly from each other; Figure 12.)

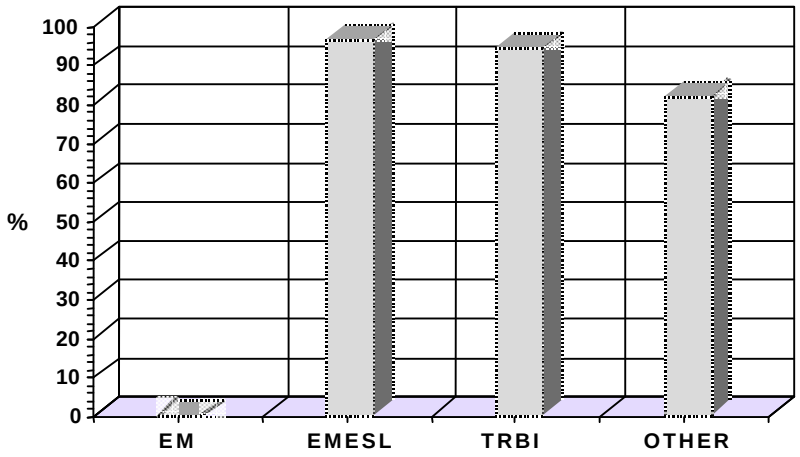

Figure 12. Percentages of children who took ESL from instructors other than the homeroom classroom teacher, by program type.

Coordination of instruction and joint planning (analyses based on the subsample). No notable differences among program types are evident in the amount of instructor time devoted to coordination of instruction and joint planning nor on the 5-point scale measuring the extent of these activities. Differences occurred, however, in both how many kinds and which particular kinds of approaches the instructors used to coordinate instruction/plan jointly (Tables 9 and 10).

The mean numbers of kinds of approaches used by instructors are 1.19, 2.00, 1.44, and 1.55, respectively, for the children in EM, EMESL, TRBI, and OTHER ($p < .01$). Of the various kinds of approaches, child report was used by the instructors of 12%, 28%, 6%, and 4% of the children, respectively, in the four types of programs ($p < .001$). Similarly, observation was used by the instructors of 6%, 28%, 9%, and 4% of the children ($p < .001$).

Transfer of school records from Puerto Rico. Program types also differed in the transfer of school records from Puerto Rico. The percentages of children whose school records from Puerto Rico had been transferred to their stateside schools are 14%, 24%, 62%, and 35%, respectively, for EM, EMESL, TRBI, and OTHER ($p < .001$; Table 11, Figure 13).

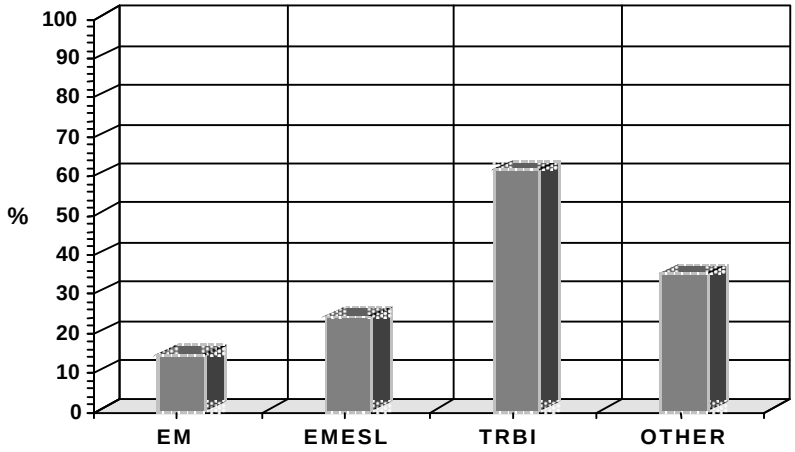

Figure 13. Percentages of children with transferred school records from Puerto Rico, by program type.

Length of school day, homework, busing, and attendance. Small but statistically significant differences among program types are evident in homework frequency. The mean homework frequency is highest for EM programs, lowest for OTHER ($p < .01$). No significant differences occurred, however, in the amount of time the teachers expected children to spend on homework (Table 12).

Finally, no significant differences among types of programs occurred in the amount of time that children spent in classes on a typical school day, nor in absenteeism rate, tardiness rate, and school busing (Tables 11 and 12).

Variation Within and Similarities Between Program Types

It is also important to note the variation among programs of each type, evident in the size of the standard deviations or in the percentages. The vast majority of the continuous variables have standard deviations of considerable size (Tables 2, 4, and 9), and many of the nominal variables show percentages that are neither extremely high nor extremely low (Tables 1, 3, 5, 6, 7, 8, 10, and 11). These results demonstrate considerable variability among the individual programs of each type.

These patterns further reveal that, for most variables, even variables showing significant differences among program types, the variable's frequency distributions partially overlap between program types. That is, some children in programs of a given type have codes or values on the variable that are identical to those of some children in programs of another type. In other words, in programs of any given type, some children received some instructional services similar to those received by children in programs of another type. For many variables, the extent of such overlap is considerable.

Intercorrelations

The intercorrelations among the variables show expected patterns, evidence of the validity (Messick, 1989) of the data (Appendix D). For example, the amount of time that children spent per week with instructors other than the homeroom classroom teacher correlated positively with the number of subjects in which the children usually missed classroom instruction as a consequence of being passed from instructor to instructor ($p < .01$, one-tailed test; subsample). The amount of time per week that instructors dedicated to coordinating instruction/jointly planning correlated positively with the 5-point scale that measured the extent of such coordination/planning, and each of these two variables correlated positively with the number of types of approaches the instructors used for such coordination/planning ($ps < .001$, one-tailed tests; subsample).

Summary and Discussion

Other than in the language of instruction, how did the types of programs that were especially designed for language minorities differ from each other and from regular English-monolingual programs? This study found striking differences as well as surprising similarities.

Between-Type Differences

The percentage of children being passed from instructor to instructor for instruction during the school day or week was larger in the programs designed for language minorities (i.e., EMESL, TRBI, and OTHER programs) than in the EM programs. Similarly, the average amount of time per week that children were spending with instructors other than the homeroom classroom teacher was larger in the programs designed for language minorities than in the EM programs. To the extent that assigning multiple instructors to a pupil may put the pupil at risk of experiencing fragmentation of instruction, this risk was greater for the children in programs designed for language minorities than for their peers in EM programs.

The data further show that, on average, the children in EMESL programs were spending more time per week with instructors other than the homeroom classroom teacher than were the children in TRBI and OTHER programs. (The children in EM programs were spending the least time with such instructors, as noted above.) Consequently, the children in EMESL programs were the most likely to miss classroom instruction: Nearly one third of the children in EMESL programs, but fewer than 11% of those in all the other programs, usually missed classroom instruction in mathematics. Similarly, about one third of the children in EMESL programs, but fewer than 20% of those in the other programs, usually missed classroom instruction in science or social studies.

Recent policy developments, including particularly Title I of the Improving America's Schools Act of 1994 (H.R. 6, Public Law 103-382), address fragmentation of instruction. This law, aiming to support comprehensive reform strategies at the state and local levels, authorizes funds for schools to reduce the time children are taken out of the classroom (i.e., pullout programs). This law also encourages schools to coordinate the education of immigrant

students with regular educational services. It remains to be seen whether these new policies and reform initiatives will result in school programs that effectively avoid potentially harmful fragmentation of instruction.

The percentage of children whose educational records had been transferred from Puerto Rico was smallest in EM and EMESL programs, largest in TRBI programs. Inasmuch as having access to those records may increase a teacher's opportunity to create articulated continuity in the student's educational programming, the potential for discontinuity of instruction was highest for the children in EM and EMESL programs.

Program types also differed in the kinds of instructors. For instance, the percentage of children receiving instruction from teacher's paraprofessional aides was higher in TRBI programs than in EM and EMESL programs. This finding suggests a possible difference in instructional quality, a difference favoring EM and EMESL programs over bilingual education programs—assuming that teacher's paraprofessional aides cannot always provide instruction of the same quality as can professional teachers.

Moreover, program types differed in the kinds of subjects taken from instructors other than the homeroom classroom teacher: The percentage of children who took remedial reading and remedial math was larger in EM and EMESL programs than in TRBI programs. This finding shows that language-minority students in supposedly "regular" or "standard" English-monolingual programs are not necessarily receiving such a regular or standard program of curriculum and instruction.

Between-Type Similarities

This study found not only significant differences among program types, as noted above, but also notable similarities, including the following.

About one half of the children in EMESL programs received instruction from a bilingual education teacher who was not the homeroom classroom teacher. This finding gainsays the popular belief that only the students in bilingual education programs receive instruction from bilingual education teachers.

Nearly all the children in programs designed for language minorities (i.e., EMESL, TRBI, and OTHER programs) received ESL pullout instruction: 94% of the children in TRBI programs and 82% of those in OTHER programs received ESL instruction from instructors other than the homeroom classroom teacher—as did 96% of those in EMESL programs (Table 7). The data thus dispel the popular belief that only the students in EMESL programs receive ESL pullout instruction.

In several significant respects, real distinctions among types of programs were found to be blurred. Many programs of any given type had characteristics that are generally thought to be elements of another type of program.

Within-Type Variation

In addition to finding wide differences and close similarities between types of programs, noted above, this study found considerable differences among programs of each type. These within-type differences indicate—as do the between-type similarities—that many schools organized, structured, or implemented their educational programming for focal children in ways that do not fully conform with commonly held conceptions about these types of programs. Many focal children were placed in programs that did not correspond neatly with such precisely defined program types as those typically portrayed in the professional literature and in policy discourse.

Scientific Basis of Educational Policies

An aggressive political movement against bilingual education is underway in the United States. It is exemplified by California's Proposition 227, called the "English for the Children" initiative (Unz & Tuchman, 1997; see also Schnaiberg, 1998a, b), enacted into law by California voters in a statewide referendum. This law is intended to end the placement of children in bilingual education programs in public schools. It states, "all children in California public schools shall be taught English by being taught in English" (California Education Code, Chap. 3, Article 2, Section 305).

Opponents of bilingual education, including proponents of Proposition 227 and similar policies, contend that bilingual education has "failed" (e.g., Amselle, 1996). Typically, the intellectual rationale for this view are studies of bilingual education programs that show few or zero positive effects, or even negative ones, on student achievement.

Many of those studies, however, do not account for such differences or similarities between and within types of programs as those this study demonstrates. For this reason, they should not be generally accepted as valid evidence of the effectiveness of bilingual education approaches per se. By demonstrating that types of programs differ not only in the language of instruction but also in other respects—namely, other program characteristics that can plausibly influence student achievement—this study shows that program-type differences in student outcomes, observed in previous studies, are possibly a consequence of these characteristics and not merely a consequence of the language of instruction. For example, although programs that are tailored for language minorities offer potential benefits, they may, if organized in ways that invite fragmentation of instruction, hinder student achievement.

This argument extends to differences and similarities among the various types of programs that are tailored for language minorities. For instance, this study shows that, compared with children in EMESL programs, those in TRBI programs were more likely to be taught by teachers' paraprofessional aides, and less likely to be taught by professional reading specialist teachers. These differences in instructors' training and expertise, favoring as they did EMESL programs over bilingual education, can plausibly dilute the potential benefits of bilingual education. Moreover, about half of the children in EMESL programs actually received instruction from bilingual education teachers, even though in theory, only students in bilingual education programs have bilingual education teachers.

Technically speaking, realities such as these represent confounding factors in the research designs of program evaluation studies. Yet, analysts and policy framers seldom consider such realities when they compare student outcomes across program types. The present study raises questions about the validity of the inferences typically drawn from studies

of the effectiveness of programs for language minorities, and it thus casts doubt on the logical and scientific basis of the educational policies that derive their rationales from such studies.

The research literature on the effectiveness of bilingual education is plagued with conflicting findings (see August & Hakuta, 1997 for a review of research). The present study suggests two plausible explanations for such inconsistencies. First, the observed within-type variability points to the hazards of generalizing from a sample of programs of a particular type to other programs of that type. For instance, if two independent studies sampled programs of the same type, those two samples would probably differ with respect to the prevalence of particular program characteristics. Those two studies, therefore, could yield conflicting results. Second, the observed between-type differences and similarities illustrate threats to the validity of inferences from comparative research—that is, inferences about the effectiveness of abstractly defined program types. For example, if a study randomly sampled programs of two different types, some programs of each type would likely possess particular characteristics that, in theory, characterize only the other type.

Valid evidence of program effectiveness can come only from properly designed, rigorously executed studies of fully implemented and sufficiently supported high-quality individual programs. Future studies of program effectiveness must "go beyond the question of whether or not a program 'works' to ask what works, for whom, how, when, and why" (Zigler & Weiss, 1985, p. 199; see also Advisory Panel for the Head Start Evaluation Design Project, 1990; August & Hakuta, 1997; Laosa, 1991, 1999). These questions require attention to the development of a broad set of outcome measures, the collection of process and implementation data, and well-executed longitudinal designs (Holtzman, 1992; Laosa, 1999).

References

Advisory Panel for the Head Start Evaluation Design Project. (1990). *Head Start research and evaluation: A blueprint for the future.* Vienna, VA: Collins Management Consulting.

Amselle, J. (Ed.). (1996). *The failure of bilingual education.* Washington, DC: Center for Equal Opportunity.

August, D., & Hakuta, K. (Eds.). (1997). *Improving schooling for language-minority children: A research agenda.* Washington, DC: National Academy Press.

Birman, B. F., Orland, M. E., Jung, R. K., Anson, R. J., Garcia, G. N., Moore, M. T., Funkhouser, J. E., Morrison, D. R., Turnbull, B. J., & Reisner, E. R. (1987). *The current operation of the Chapter 1 Program* (Final report from the National Assessment of Chapter 1). Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement, Office of Research.

California Education Code. Available on the World Wide Web: http://leginfo.public.ca.gov.

Everitt, B. S. (1977). *The analysis of contingency tables.* New York, NY: Wiley.

Holtzman, W. H. (Ed.). (1992). *School of the future.* Austin, TX: Hogg Foundation for Mental Health and American Psychological Association.

Improving America's School Act of 1994. (1994, October 20). H.R. 6, Public Law 103-382. Available on the World Wide Web: http://thomas.loc.gov.

Laosa, L. M. (1991). The cultural context of construct validity and the ethics of generalizability. *Early Childhood Research Quarterly, 6,* 313-321.

Laosa, L. M. (1998). *Child migration from Puerto Rico to public and private schools in the United States: Sampling a difficult-to-reach population* (Research Rep. No. 98-24). Princeton, NJ: Educational Testing Service.

Laosa, L. M. (1999). Intercultural transitions in human development and education. *Journal of Applied Developmental Psychology, 20,* 355-406.

McNemar, Q. (1969). *Psychological statistics* (4th ed.). New York, NY: Wiley.

Messick, S. (1989). Validity. In R. L. Linn (Ed.), *Educational measurement* (3rd ed., pp. 13-103). New York, NY: Macmillan.

Meyer, M. M., & Fienberg, S. E. (Eds.). (1992). *Assessing evaluation studies: The case of bilingual education strategies.* Washington, DC: National Academy Press.

Norušis, M.J. (1983). *SPSS^X introductory statistics guide*. New York, NY: McGraw-Hill.

Reynolds, H.T. (1977). *Analysis of nominal data* (Sage University Paper Series on Quantitative Applications in the Social Sciences, No. 07-007). Beverly Hills, CA: Sage.

Schnaiberg, L. (1998, June 10). Uncertainty follows vote on Prop. 227. *Education Week*, 17(39), 1 and 21. Available on the World Wide Web: http://www.edweek.org. (a)

Schnaiberg, L. (1998, August 5). Schools gear up as bilingual ed. law takes effect. *Education Week, 17*(43), 1 and 29. Available on the World Wide Web: http://www.edweek.org. (b)

Thomas W. P., & Collier, V. (1997). *School effectiveness for language minority students.* Washington, DC: National Clearinghouse for Bilingual Education.

Unz, R. K., & Tuchman, G. M. (1997). *English Language Education for Immigrant Children initiative.*

U.S. Bureau of the Census. (1992). *1990 Census of population. General population characteristics: United States* (1990 CP-1-1). Washington, DC: U.S. Government Printing Office.

U.S. Bureau of the Census. (1993). *1990 Census of population and housing. Population and housing unit counts: United States* (1990 CPH-2-1). Washington, DC: U.S. Government Printing Office.

U.S. Department of Education. (1993). *Reinventing Chapter 1: The current Chapter 1 Program and new directions* (Final report of the National Assessment of the Chapter 1 Program). Washington, DC: U.S. Department of Education, Office of Policy and Planning, Planning and Evaluation Service.

Zigler, E., & Weiss, H. (1985). Family support systems: An ecological approach to child development. In R. N. Rapoport (Ed.), *Children, youth, and families: The action-research relationship* (pp. 166-205). Cambridge, England: Cambridge University Press.

Endnotes

[1]Of the 50 states of the United States, New Jersey has the highest Puerto Rican population density and the second-largest proportion of the total Puerto Rican population residing in the states (U.S. Bureau of the Census, 1992, 1993).

[2]Below are the annual distributions of children transferring in from Puerto Rico to the sample of New Jersey schools (i.e., to third- and fourth-grade classrooms or the equivalent for ungraded classrooms). To avoid inflating these counts, if a child transferred in from Puerto Rico more than once during the course of the investigation, the child was counted only once.

Number of children	Number of schools	
	Year 1	Year 2
0	169	177
1	27	21
2	16	8
3	9	8
4	5	9
5	4	4
6	5	4
7	3	3
8	0	3
9	2	1
10	0	2
11	0	1
12	0	0
13	0	0
14	1	0

[3]The arrival that qualified the child for sample eligibility.

[4]Even when one considers only the children who have instructors besides the homeroom classroom teacher (i.e., the subsample), the children in EM programs spent considerably less time with such instructors than did the children placed in other types of programs (Table 2).

Tables and Appendices

Table 1

Percentages of Focal Children Who Received Instruction from Instructors Besides the Homeroom Classroom Teacher, by Program Type; and Results of Contingency Table Analysis

	Program type				V
	EM	EMESL	TRBI	OTHER	
% (cell)	55.2	100.0	98.0	100.0	.57***
Adjusted residual (row)	–9.0	2.1	3.5	1.3	

Note. Full sample (N = 251 focal children). Cramér's V and the residuals are based on a 2 x 4 contingency table (i.e., the dichotomous dependent variable [viz., whether the focal child received instruction from at least one instructor besides the homeroom classroom teacher, not counting physical education] x the program-type nominal variable). The significance level is a Pearson chi-square probability; df = 3.

EM = the focal child was in a regular English-language monolingual classroom, not receiving services that are designed especially for language-minority students. EMESL = the focal child was in a regular English-language monolingual classroom but was receiving special instruction in English-as-a-Second-Language (ESL). TRBI = the focal child was in a transitional bilingual education program. OTHER = the focal child was in a program of a type other than EM, EMESL, and TRBI.

***$p < .001$

TABLE READS: "Of all the focal children in EM programs, 55.2% received instruction from instructors besides the homeroom classroom teacher (not counting physical ed.)."

Table 2

Minutes Per Week the Focal Children Received Instruction in Particular Settings from Instructors Besides the Homeroom Classroom Teacher, by Program Type: Means, Standard Deviations, and ANOVA Results (for the Full Sample and the Subsample)

Setting	Program type				F (df)	η^2
	EM	EMESL	TRBI	OTHER		
Full sample[a]						
Inside the homeroom classroom						
M	19.3 (0.3 hr)	61.1 (1.0 hr)	83.2 (1.4 hr)	94.8 (1.6 hr)	3.4* (3, 244)	.04
SD	51.1	108.4	115.7	78.6		
Outside the homeroom classroom						
M	93.6 (1.6 hr)	440.5 (7.3 hr)	246.5 (4.1 hr)	206.9 (3.4 hr)	29.2*** (3, 244)	.26
SD	117.7	281.4	129.4	113.5		
Total (inside + outside)						
M	112.9 (1.9 hr)	501.6 (8.4 hr)	329.7 (5.5 hr)	301.7 (5.0 hr)	29.2*** (3, 244)	.26
SD	141.8	291.1	144.2	87.1		

(table continues)

Table 2 continued

Setting	Program type				F (df)	η^2
	EM	EMESL	TRBI	OTHER		
	Subsample[b]					
Inside the homeroom classroom						
M	35.0 (0.6 hr)	61.1 (1.0 hr)	84.9 (1.4 hr)	94.8 (1.6 hr)	1.6 (3, 228)	.02
SD	65.6	108.4	116.3	78.6		
Outside the homeroom classroom						
M	169.7 (2.8 hr)	440.5 (7.3 hr)	251.5 (4.2 hr)	206.9 (3.4 hr)	19.6*** (3, 228)	.20
SD	110.0	281.4	125.8	113.5		
Total (inside + outside)						
M	204.7 (3.4 hr)	501.6 (8.4 hr)	336.5 (5.6 hr)	301.7 (5.0 hr)	16.0*** (3, 228)	.17
SD	132.2	291.1	137.6	87.1		

Note. Each F ratio is based on a one-way ANOVA.

[a]N = 248 focal children. [b]The focal children who received instruction from instructors besides the homeroom classroom teacher (not counting physical ed.); n = 93.5% of N.

*p < .05 **p < .01 ***p < .001

Table 3

Percentages of Focal Children Who Usually Missed Classroom Instruction for Being Passed from One Instructor to Another, by Program Type; and Results of Contingency Table Analysis (for the Full Sample and the Subsample)

	Program type				V
	EM	EMESL	TRBI	OTHER	
Full sample[a]					
% (cell)	20.7	76.0	23.5	22.7	.45***
Adjusted residual (row)	–1.6	7.1	–4.1	–1.1	
Subsample[b]					
% (cell)	37.5	76.0	24.0	22.7	.44***
Adjusted residual (row)	0.1	6.7	–4.9	–1.4	

Note. Each Cramér's V, and the corresponding residuals, is based on a 2 x 4 contingency table (i.e., the dichotomous dependent variable [viz., whether the focal child usually missed classroom instruction in at least one subject as a consequence of being passed from one instructor to another for instruction during the school day or week, not counting physical ed.] x the program-type nominal variable); df = 3.

[a]N = 250 focal children. [b]The focal children who received instruction from at least one instructor besides the homeroom classroom teacher (not counting physical ed.); n = 93.5% of N.

***p < .001

TABLE READS: "Of all the focal children in EM programs, 20.7% usually missed classroom instruction in at least one subject as a consequence of being passed from one instructor to another for instruction during the school day or week (not counting physical ed.)."

Table 4

Number of Subjects in Which Focal Children Usually Missed Classroom Instruction for Being Passed from One Instructor to Another, by Program Type: Means, Standard Deviations, and ANOVA Results (for the Full Sample and the Subsample)

	Program type				F (df)	η^2
	EM	EMESL	TRBI	OTHER		
Full sample[a]						
M	0.31	1.96	0.58	0.73	14.4*** (3, 243)	.15
SD	0.66	1.53	1.22	2.16		
Subsample[b]						
M	0.56	1.96	0.59	0.73	12.1*** (3, 227)	.14
SD	0.81	1.53	1.23	2.16		

Note. Each F ratio is based on a one-way ANOVA.

[a]N = 247 focal children. [b]The focal children who received instruction from at least one instructor besides the homeroom classroom teacher (not counting physical ed.); n = 93.5% of N.

***p < .001

Table 5

Percentages of Focal Children Who Usually Missed Classroom Instruction in Particular Subjects for Being Passed from One Instructor to Another, by Program Type; and Results of Contingency Table Analyses (for the Full Sample and the Subsample)

Subject	Program type				V
	EM	EMESL	TRBI	OTHER	
Full sample[a]					
English reading					
% (cell)	6.9	50.0	1.4	9.1	.58***
Adjusted residual (row)	–0.9	8.9	–6.3	–0.5	
English language arts					
% (cell)	3.4	37.5	3.4	9.1	.44***
Adjusted residual (row)	–1.3	6.8	–4.5	–0.2	
Spanish reading					
% (cell)	NA	NA	5.4	4.5	.02
Adjusted residual (row)	NA	NA	0.2	–0.2	
Spanish language arts					
% (cell)	NA	NA	4.1	9.1	.08
Adjusted residual (row)	NA	NA	–1.0	1.0	
Mathematics					
% (cell)	10.3	29.2	6.1	9.1	.28***
Adjusted residual (row)	–0.2	4.3	–3.2	–0.3	
Science					
% (cell)	3.4	37.5	18.2	9.1	.26***
Adjusted residual (row)	–2.3	3.5	–0.6	–1.3	

(table continues)

Table 5 continued

Subject	Program type				V
	EM	EMESL	TRBI	OTHER	
Full sample[a] (continued)					
Social studies					
% (cell)	3.4	33.3	16.9	9.1	.23**
Adjusted residual (row)	–2.2	3.1	–0.5	–1.1	
Ethnic heritage					
% (cell)	0.0	0.0	0.0	4.5	––
Adjusted residual (row)	–0.4	–0.5	–1.2	3.2	
Art or music					
% (cell)	3.4	6.3	0.0	4.5	––
Adjusted residual (row)	0.6	2.3	–2.8	0.9	
Other subjects					
% (cell)	0.0	0.0	2.0	4.5	––
Adjusted residual (row)	–0.7	–1.0	–0.6	1.1	

(table continues)

Table 5 continued

Subject	Program type				V
	EM	EMESL	TRBI	OTHER	
Subsample[b]					
English reading					
% (cell)	12.5	50.0	1.4	9.1	.57***
Adjusted residual (row)	–0.1	8.6	–6.8	–0.6	
English language arts					
% (cell)	6.3	37.5	3.4	9.1	.43***
Adjusted residual (row)	–0.7	6.5	–4.9	–0.3	
Spanish reading					
% (cell)	NA	NA	5.5	4.5	.02
Adjusted residual (row)	NA	NA	0.2	–0.2	
Spanish language arts					
% (cell)	NA	NA	4.1	9.1	.08
Adjusted residual (row)	NA	NA	–1.0	1.0	
Mathematics					
% (cell)	18.8	29.2	6.2	9.1	.28***
Adjusted residual (row)	0.8	4.1	–3.6	–0.5	
Science					
% (cell)	6.3	37.5	18.6	9.1	.23**
Adjusted residual (row)	–1.5	3.2	–1.0	–1.4	

(table continues)

Table 5 continued

Subject	Program type				V
	EM	EMESL	TRBI	OTHER	
Subsample[b] (continued)					
Social studies					
% (cell)	6.3	33.3	17.2	9.1	.21*
Adjusted residual (row)	–1.4	2.8	–0.9	–1.3	
Ethnic heritage					
% (cell)	0.0	0.0	0.0	4.5	––
Adjusted residual (row)	–0.3	–0.5	–1.3	3.1	
Art or music					
% (cell)	6.3	6.3	0.0	4.5	––
Adjusted residual (row)	1.2	2.2	–2.9	0.8	
Other subjects					
% (cell)	0.0	0.0	2.1	4.5	––
Adjusted residual (row)	–0.6	–1.0	0.5	1.1	

Note. Each Cramér's V, and the corresponding residuals, is based on either a 2 x 4 or a 2 x 2 contingency table (i.e., a dichotomous dependent variable x the program-type nominal variable). Specifically, df = 1 for Spanish reading and Spanish language arts because these two subjects do not apply (NA) to EM and EMESL programs; df = 3 for each of the other subjects. Dashes signify that the expected frequencies are too small to compute a meaningful V.

[a]N = 247 focal children. [b]The focal children who received instruction from at least one instructor besides the homeroom classroom teacher (not counting physical ed.); n = 93.5% of N.

*p < .05 **p < .01 ***p < .001

TABLE READS: "Of all the focal children in EM programs, 6.9% usually missed classroom instruction in English reading as a consequence of being passed from one instructor to another for instruction during the school day or week (not counting physical ed.)."

Table 6

Percentages of Focal Children Who Received Instruction from Particular Types of Instructors Besides the Homeroom Classroom Teacher, by Program Type; and Results of Contingency Table Analyses (for the Full Sample and the Subsample)

Type of instructor	Program type				V
	EM	EMESL	TRBI	OTHER	
Full sample[a]					
Reading specialist teacher					
% (cell)	13.8	18.0	3.4	9.1	.22**
Adjusted residual (row)	1.2	2.9	–3.3	0.2	
Mathematics specialist teacher					
% (cell)	17.2	18.0	9.4	9.1	.12
Adjusted residual (row)	0.9	1.5	–1.5	–0.4	
ESL teacher					
% (cell)	NA	94.0	90.6	77.3	.15
Adjusted residual (row)	NA	1.1	0.4	–2.1	
Bilingual education teacher					
% (cell)	NA	46.0	10.1	13.6	.38***
Adjusted residual (row)	NA	5.7	–4.7	–0.6	
Learning disabilities/special ed. teacher					
% (cell)	3.4	2.0	0.7	0.0	––
Adjusted residual (row)	1.2	0.6	–0.9	–0.5	
Teacher of the gifted and talented					
% (cell)	0.0	0.0	0.0	0.0	––
Adjusted residual (row)	––	––	––	––	

(table continues)

Table 6 continued

Type of instructor	Program type				V
	EM	EMESL	TRBI	OTHER	
Full sample[a] (continued)					
General-classroom teacher's paraprofessional aide					
% (cell)	0.0	2.0	7.4	13.6	.16
Adjusted residual (row)	–1.4	–1.3	1.1	1.6	
Bilingual education teacher's paraprofessional aide					
% (cell)	NA	6.0	32.2	22.7	.25***
Adjusted residual (row)	NA	–3.6	3.4	–0.3	
ESL teacher's paraprofessional aide					
% (cell)	NA	6.0	6.0	13.6	.09
Adjusted residual (row)	NA	–0.3	–0.6	1.3	
Volunteer					
% (cell)	0.0	0.0	1.3	0.0	—
Adjusted residual (row)	–0.5	–0.7	1.2	–0.4	
Tutor					
% (cell)	3.4	0.0	0.0	0.0	—
Adjusted residual (row)	2.8	–0.5	–1.2	–0.3	
Other types of instructors					
% (cell)	48.3	26.0	40.3	40.9	.18*
Adjusted residual (row)	1.2	–2.0	0.7	0.3	

(table continues)

Table 6 continued

Type of instructor	Program type				V
	EM	EMESL	TRBI	OTHER	
	Subsample[b]				
Reading specialist teacher					
% (cell)	25.0	18.0	3.4	9.1	.26**
Adjusted residual (row)	2.4	2.7	–3.6	0.1	
Mathematics specialist teacher					
% (cell)	31.3	18.0	9.6	9.1	.18*
Adjusted residual (row)	2.3	1.2	–1.9	–0.5	
ESL teacher					
% (cell)	NA	94.0	92.5	77.3	.17*
Adjusted residual (row)	NA	0.8	0.9	–2.5	
Bilingual education teacher					
% (cell)	NA	46.0	10.3	13.6	.38***
Adjusted residual (row)	NA	5.6	–4.6	–0.7	
Learning disabilities/special ed. teacher					
% (cell)	6.3	2.0	0.7	0.0	––
Adjusted residual (row)	1.8	0.5	–1.0	–0.6	
Teacher of the gifted and talented					
% (cell)	0.0	0.0	0.0	0.0	––
Adjusted residual (row)	––	––	––	––	

(table continues)

Table 6 continued

Type of instructor	Program type				V
	EM	EMESL	TRBI	OTHER	
Subsample[b] (continued)					
General-classroom teacher's paraprofessional aide					
% (cell)	0.0	2.0	7.5	13.6	.14
Adjusted residual (row)	–1.1	–1.4	0.9	1.5	
Bilingual education teacher's paraprofessional aide					
% (cell)	NA	6.0	32.9	22.7	.26***
Adjusted residual (row)	NA	–3.6	3.5	–0.3	
ESL teacher's paraprofessional aide					
% (cell)	NA	6.0	6.2	13.6	.09
Adjusted residual (row)	NA	–0.3	–0.6	1.3	
Volunteer					
% (cell)	0.0	0.0	1.4	0.0	—
Adjusted residual (row)	–0.4	–0.7	1.1	–0.5	
Tutor					
% (cell)	6.3	0.0	0.0	0.0	—
Adjusted residual (row)	3.7	–0.5	–1.3	–0.3	
Other types of instructors					
% (cell)	87.5	26.0	41.1	40.9	.28***
Adjusted residual (row)	3.9	–2.4	0.0	0.3	

(table continues)

Table 6 continued

Note. Each Cramér's V, and the corresponding residuals, is based on either a 2 x 4 or a 2 x 3 contingency table (i.e., a dichotomous dependent variable x the program-type nominal variable). Specifically, df = 2 for ESL and bilingual education teachers and aides, because ESL and bilingual education instructors are not applicable (NA) to EM programs; df = 3 for each of the other instructor types. Dashes signify that the expected frequencies are too small to compute a meaningful V.

[a]N = 250 focal children. [b]The focal children who received instruction from at least one instructor besides the homeroom classroom teacher (not counting physical ed.); n = 93.5% of N.

*p < .05 **p < .01 ***p < .001

TABLE READS: "Of all the focal children in EM programs, 13.8% received instruction in school from a reading specialist teacher who was not the homeroom classroom teacher."

Table 7

Percentages of Focal Children Who Received Instruction in Particular Subjects from Instructors Other Than the Homeroom Classroom Teacher, by Program Type; and Results of Contingency Table Analyses (for the Full Sample and the Subsample)

Subject	Program type				V
	EM	EMESL	TRBI	OTHER	
Full sample[a]					
English-as-a-Second-Language (ESL)					
% (cell)	NA	96.0	94.0	81.8	.15
Adjusted residual (row)	NA	0.9	0.6	–2.2	
Remedial reading					
% (cell)	24.1	48.0	12.1	18.2	.34***
Adjusted residual (row)	0.4	5.2	–4.3	–0.4	
Remedial mathematics					
% (cell)	34.5	44.0	22.8	50.0	.22**
Adjusted residual (row)	0.5	2.3	–3.3	2.0	
Other subjects					
% (cell)	34.5	26.0	53.7	22.7	.26***
Adjusted residual (row)	–1.0	–2.7	4.1	–2.0	

(table continues)

Table 7 continued

Subject	Program type				V
	EM	EMESL	TRBI	OTHER	
	Subsample[b]				
ESL					
% (cell)	NA	96.0	95.9	81.8	.19*
Adjusted residual (row)	NA	0.5	1.3	–2.7	
Remedial reading					
% (cell)	43.8	48.0	12.3	18.2	.37***
Adjusted residual (row)	2.1	4.8	–4.9	–0.5	
Remedial mathematics					
% (cell)	62.5	44.0	23.3	50.0	.28***
Adjusted residual (row)	2.6	1.9	–4.0	1.8	
Other subjects					
% (cell)	62.5	26.0	54.8	22.7	.29***
Adjusted residual (row)	1.4	–3.2	3.4	–2.3	

Note. Each Cramér's V, and the corresponding residuals, is based on either a 2 x 4 or a 2 x 3 contingency table (i.e., a dichotomous dependent variable [viz., whether the focal child received instruction in the particular subject from instructors other than the homeroom classroom teacher] x the program-type nominal variable). Specifically, df = 2 for ESL because ESL is not applicable (NA) to EM programs; df = 3 for each of the other subjects.

[a]N = 250 focal children. [b]The focal children who received instruction from at least one instructor besides the homeroom classroom teacher (not counting physical ed.); n = 93.5% of N.

*p < .05 **p < .01 ***p < .001

Table 8

Percentages of Focal Children Who Received Instruction from Instructors Besides the Homeroom Classroom Teacher in Particular School Settings, by Program Type; and Results of Contingency Table Analyses (for the Full Sample and the Subsample)

Setting	Program type				V
	EM	EMESL	TRBI	OTHER	
	Full sample[a]				
Only inside the homeroom classroom					
% (column)	3.4	2.0	6.0	0.0	
Only outside the homeroom classroom					NA
% (column)	34.5	65.3	47.0	28.6	
Both inside and outside					
% (column)	17.2	32.7	45.0	71.4	
In any setting					
% (cell)	55.2	100.0	98.0	100.0	.57***
Adjusted residual (row)	–9.0	2.1	3.5	1.3	

(table continues)

Table 8 continued

Setting	Program type				V
	EM	EMESL	TRBI	OTHER	
	Subsample[b]				
Only inside the homeroom classroom					
% (column)	6.3	2.0	6.2	0.0	
Adjusted residual (total)	0.3	–0.1	1.3	–1.1	
Only outside the homeroom classroom					
% (column)	62.5	65.3	47.9	28.6	.17*
Adjusted residual (total)	1.0	2.3	–1.2	–2.1	
Both inside and outside					
% (column)	31.3	32.7	45.9	71.4	
Adjusted residual (total)	–1.1	–1.9	0.6	2.6	
In any setting					NA
% (cell)	100.0	100.0	100.0	100.0	

(table continues)

Table 8 continued

Note. NA = V is not applicable. Percentages are within rounding error.

[a]N = 248 focal children. Cramér's V and the residuals are based on a 2 x 4 contingency table (i.e., the dichotomous dependent variable [viz., whether the focal child received instruction from instructors besides the homeroom classroom teacher, not counting physical ed.] x the program-type nominal variable); df = 3. [b]The focal children who received instruction from at least one instructor besides the homeroom classroom teacher (not counting physical ed.); n = 93.5% of N. Cramér's V and the residuals are based on a 3 x 4 contingency table (i.e., the nominal variable for the setting [viz., inside only, outside only, both inside and outside] x the program-type nominal variable); df = 6.

*p < .05 **p < .01 ***p < .001

TABLE READS: "Of all the focal children in EM programs, 3.4%, 34.5%, and 17.2%, respectively, received instruction from instructors besides the homeroom classroom teacher inside the homeroom classroom only, outside the homeroom classroom only, and both inside and outside the homeroom classroom."

Table 9

Coordination of Instruction and Joint Planning, by Program Type: Means, Standard Deviations, and ANOVA Results (for the Subsample)

Dependent variable	Program type				F (df)	η^2
	EM	EMESL	TRBI	OTHER		
Extent of coord. & joint planning (5-point scale)						
M	2.44	2.92	2.99	3.14	1.1 (3, 228)	.01
SD	1.41	1.19	1.27	1.28		
Instructor time dedicated to coord. & joint planning (min per week)						
M	21.3 (0.4 hr)	58.4 (1.0 hr)	68.5 (1.1 hr)	49.5 (0.8 hr)	2.3 (3, 222)	.03
SD	32.3	70.4	76.3	46.6		
No. of approaches for coord. or joint planning						
M	1.19	2.00	1.44	1.55	3.8** (3, 230)	.05
SD	1.28	1.44	0.96	0.96		

Note. Each F ratio is based on a one-way ANOVA. The analyses for this table are based on the focal children who received instruction from at least one instructor besides the homeroom classroom teacher (not counting physical ed.); n = 93.5% of N (N = 248 focal children for the first dependent variable, 242 for the second, and 250 for the third).

*p < .05 **p < .01 ***p < .001

Table 10

Percentages of Focal Children Whose Instructors Used Particular Approaches to Coordinate Instruction or to Do Joint Planning, by Program Type; and Results of Contingency Table Analyses (for the Subsample)

	Program type				V
Approach	EM	EMESL	TRBI	OTHER	
Informal discussion					
% (cell)	43.8	78.0	65.1	72.7	.18
Adjusted residual (row)	–2.1	1.9	–0.8	0.6	
Formal meeting					
% (cell)	25.0	26.0	15.1	22.7	.12
Adjusted residual (row)	0.7	1.5	–1.9	0.5	
Curriculum/materials					
% (cell)	25.0	40.0	45.2	50.0	.11
Adjusted residual (row)	–1.5	–0.5	0.8	0.7	
Student's report					
% (cell)	12.5	28.0	5.5	4.5	.30***
Adjusted residual (row)	0.2	4.5	–3.3	–1.0	
Observation					
% (cell)	6.3	28.0	8.9	4.5	.25***
Adjusted residual (row)	–0.8	3.8	–2.1	–1.2	
Other approaches					
% (cell)	6.3	0.0	4.1	0.0	—
Adjusted residual (row)	0.8	–1.4	1.3	–0.9	

(table continues)

Table 10 continued

Note. The analyses for this table are based on the subsample of focal children who received instruction from at least one instructor besides the homeroom classroom teacher; n = 93.5% of N (N = 250 focal children). Each Cramér's V, and the corresponding residuals, is based on a 2 x 4 contingency table (i.e., a dichotomous dependent variable [viz., whether the focal child's instructors used the particular approach to coordinate instruction/do joint planning] x the program-type nominal variable); df = 3. Dashes signify that the expected frequencies are too small to compute a meaningful V.

*p < .05 **p < .01 ***p < .001

TABLE READS: "Of all the focal children in EM programs who had instructors besides the homeroom classroom teacher, 43.8% had instructors who used informal discussion as an approach to coordinating instruction or to joint planning."

Table 11

Percentages of Focal Children Whose School Records from Puerto Rico Had Been Transferred to the Mainland School, and Percentages Who Were Bused to School, by Program Type; and Results of Contingency Table Analyses

	Program type				V
Dependent variable	EM	EMESL	TRBI	OTHER	
Records transferred from P.R.[a]					
% (cell)	14.3	24.0	61.5	35.0	.38***
Adjusted residual (row)	−3.6	−3.5	5.9	−1.1	
Bused[b]					
% (cell)	0.0	6.0	10.7	4.5	.14
Adjusted residual (row)	−1.7	−0.6	1.9	−0.6	

Note. Full sample. Each Cramér's V, and the corresponding residuals, is based on a 2 x 4 contingency table (i.e., a dichotomous dependent variable x the program-type nominal variable); df = 3.

[a]N = 246 focal children. [b]N = 251 focal children.

*p < .05 **p < .01 ***p < .001

TABLE READS: "Of all the focal children in EM programs, 14.3% had their school records from Puerto Rico transferred to their mainland school."

Table 12

Focal Children's Length of School Day and Measures of Homework and School Attendance, by Program Type: Means, Standard Deviations, and ANOVA Results

	Program type				F (df)	η^2
Dependent variable	EM	EMESL	TRBI	OTHER		
Time in classes (min per day)						
M	313.1 (5.2 hr)	312.1 (5.2 hr)	314.7 (5.2 hr)	316.2 (5.3 hr)	0.1 (3, 236)	.00
SD	22.8	44.7	34.3	24.6		
Homework frequency (5-point scale)						
M	5.00	4.94	4.93	4.65	4.4** (3, 243)	.05
SD	0.00	0.24	0.30	0.88		
Teacher's expectations for homework (min per week)						
M	253.2 (4.2 hr)	248.9 (4.2 hr)	287.8 (4.8 hr)	288.8 (4.8 hr)	1.4 (3, 241)	.02
SD	143.9	103.3	144.9	118.5		

(table continues)

Table 12 continued

Dependent variable	Program type				F (df)	η^2
	EM	EMESL	TRBI	OTHER		
School days absent						
M%	7.53	7.71	7.90	6.97	0.1 (3, 223)	.00
SD	6.66	7.75	7.24	4.35		
School days tardy						
M%	1.70	0.72	0.72	1.55	2.2 (3, 227)	.03
SD	2.24	1.37	2.45	2.27		

Note. Each F ratio is based on a one-way ANOVA. Full sample (N = 240 focal children for time in classes; N = 247 focal children for homework frequency; N = 245 focal children for homework expectations; N = 227 focal children for days absent; N = 231 focal children for days tardy).

*p < .05 **p < .01 ***p < .001

Appendix A

Correlations of Migration Wave and Grade Level With the Other Variables

Variable	Migration wave	Grade level
Migration wave (1 = 1st, 2 = 2nd)	1.00	––
Grade level (3 = 3rd, 4 = 4th)	–.12	1.00
Instructor besides the HCT (1 = no, 2 = yes)	–.01	–.06
Time with instructors besides the HCT (min per week)	.06	.05
Subjects from instructors besides the HCT (0 = no, 1 = yes):		
English-as-a-Second-Language (ESL)	–.02	–.06
Remedial English reading	–.04	.00
Remedial mathematics	–.15*	.05
Other subjects	.01	–.01
Settings with instructors besides the HCT:		
Only inside the homeroom classroom (1 = no, 2 = yes)	––	––
Only outside (1 = no, 2 = yes)	.06	–.06
Both inside and outside (1 = no, 2 = yes)	–.12	.05
Time inside the homeroom classroom (min per week)	–.01	–.03
Time outside (min per week)	.07	.07

(appendix continues)

Appendix A continued

Variable	Migration wave	Grade level
Types of instructors besides the HCT (0 = no, 1 = yes):		
Reading specialist teacher	–.01	.05
Mathematics specialist teacher	–.01	.07
ESL teacher	.02	–.12*
Bilingual education teacher	–.02	.09
Learning disabilities/special ed. teacher	––	––
Teacher of the gifted and talented	––	––
General-classroom teacher's paraprofessional aide	––	––
Bilingual education teacher's paraprofessional aide	–.04	–.05
ESL teacher's paraprofessional aide	––	––
Volunteer	––	––
Tutor	––	––
Other types of instructors	–.04	–.08

(appendix continues)

Appendix A continued

Variable	Migration wave	Grade level
Usually misses classroom instruction (1 = no, 2 = yes)	–.03	.15**
No. of subjects usually misses	––	––
Subjects usually misses (0 = no, 1 = yes):		
English reading	–.04	.05
English language arts	.14*	.05
Spanish reading	––	––
Spanish language arts	––	––
Mathematics	.06	.08
Science	.00	.08
Social studies	.03	.12*
Ethnic heritage	––	––
Art or music	––	––
Other subjects	––	––

(appendix continues)

Appendix A continued

Variable	Migration wave	Grade level
Coordination of instruction or joint planning occurs (1 = no, 2 = yes)	–.04	–.10
Extent of coordination of instruction & joint planning (5-point scale)	–.12	.03
Instructor time dedicated to coordinating instruction & joint planning[a] (min per week)	–.08	–.02
No. of approaches for coordinating instruction & joint planning	.05	–.03
Approaches for coordinating instruction or joint planning (0 = no, 1 = yes):		
Informal discussion	.02	–.10
Formal meeting	.06	.14**
Curriculum/materials	.09	–.12*
Student's report	.02	.04
Observation	.00	–.04
Other approaches	––	––
School records from PR (1 = no, 2 = yes)	.07	–.10
Time spends in classes[a] (min per day)	–.10	.11*
Homework frequency (5-point scale)	––	––
Teacher's expectations for homework (min per week)	–.13*	.25***
School busing (1 = no, 2 = yes)	.08	–.03
Absenteeism rate	–.04	.05
Tardiness rate	.05	.01

(appendix continues)

Note. Full sample. Unless otherwise noted by a footnote to this table, the coefficients are based on the Pearson product-moment correlation formula. Dashes signify insufficient variance or distributions too skewed to compute a coefficient, or they signify a redundant or meaningless coefficient. Significance levels are two-tailed for the correlations with migration wave, and one-tailed for the correlations with grade level. HCT = the focal child's homeroom classroom teacher.

[a]Spearman rank-order correlations.

*p < .05 **p < .01 ***p < .001

Appendix B

Contingency Table Analysis of Migration Wave Against Program Type

Wave	Statistic	Program type				V
		EM	EMESL	TRBI	OTHER	
1	% (column)	55.2	62.0	55.3	77.3	.13
	Adjusted residual (total)	−0.4	0.6	−1.3	1.9	
2	% (column)	44.8	38.0	44.7	22.7	
	Adjusted residual (total)	0.4	−0.6	1.3	−1.9	

Note. Full sample (N = 251 focal children). Cramér's V and the adjusted residuals are based on the 2 x 4 contingency table; df = 3. With 3 df, a V of magnitude .13 is nonsignificant (i.e., p > .05).

Appendix C

Contingency Table Analysis of Grade Level Against Program Type

Grade level	Statistic	Program type				V
		EM	EMESL	TRBI	OTHER	
3	% (column)	37.9	48.0	50.7	59.1	.10
	Adjusted residual (total)	–1.3	–0.2	0.5	1.0	
4	% (column)	62.1	52.0	49.3	40.9	
	Adjusted residual (total)	1.3	0.2	–0.5	–1.0	

Note. Full sample (N = 251 focal children). Cramér's V and the residuals are based on the 2 x 4 contingency table; df = 3. With 3 df, a V of magnitude .10 is nonsignificant (i.e., p > .05).

Appendix D

Intercorrelations (for the Subsample)

Variable	1.	2.	3.	4.	5.	6.
1. Time with instructors besides the HCT (min per week)	1.00					
Settings with instructors besides the HCT:						
2. Only inside the homeroom classroom (1 = no, 2 = yes)	––	1.00				
3. Only outside (1 = no, 2 = yes)	–.16**	––	1.00			
4. Both inside and outside (1 = no, 2 = yes)	.22***	––	––	1.00		
5. Time inside the homeroom classroom (min per week)	––	––	––	––	1.00	
6. Time outside (min per week)	––	––	––	––	–.24***	1.00
Missing classroom instruction:						
7. Usually misses classroom instruction (1 = no, 2 = yes)	.20**	––	.14**	–.07	–.14**	.30***
8. No. of subjects usually misses	.15**	––	.11*	–.04	–.13*	.24***

(appendix continues)

Appendix D continued

Variable	1.	2.	3.	4.	5.	6.
Coordination of instruction/joint planning:						
9. Coordination of instruction or joint planning occurs (1 = no, 2 = yes)	.03	––	–.14**	.17**	.10	–.02
10. Extent of coordination of instruction & joint planning (5-point scale)	.07	––	–.15**	.21***	.11*	.00
11. Instructor time dedicated to coordinating instruction & joint planning (min per week)	.07	––	–.14**	.12*	–.11*	.07
12. No. of approaches for coordinating instruction & joint planning	.12*	––	–.10	.07	.11*	.06
Approaches for coordinating instruction or joint planning (0 = no, 1= yes):						
13. Informal discussion	.01	––	–.05	.04	.07	–.03
14. Formal meeting	.11*	––	.10	–.06	–.08	.16**
15. Curriculum/materials	.12*	––	–.21***	.20**	.21***	.00
16. Student's report	–.03	––	.02	–.13*	.04	–.06
17. Observation	.11*	––	–.06	.02	.01	.10
18. Other approaches	––	––	-–	––	––	––

(appendix continues)

Appendix D continued

Variable	7.	8.	9.	10.	11.	12.
Missing classroom instruction:						
7. Usually misses classroom instruction (1 = no, 2 = yes)	1.00					
8. No. of subjects usually misses	––	1.00				
Coordination of instruction & joint planning:						
9. Coordination of instruction or joint planning occurs (1 = no, 2 = yes)	.08	.10	1.00			
10. Extent of coordination of instruction & joint planning (5-point scale)	.07	.10	––	1.00		
11. Instructor time dedicated to coordinating instruction & joint planning (min per week)	–.02	.02	––	.66***	1.00	
12. No. of approaches for coordinating instruction & joint planning	.16**	.14**	––	.50***	.52***	1.00

Note. HCT = the focal child's homeroom classroom teacher. The analyses for this table are based on the focal children who received instruction from at least one instructor besides the HCT; n = 93.5% of N. Dashes signify insufficient variance or distributions too skewed for the purposes of computing a coefficient, or they signify a meaningless coefficient.

*p < .05 **p < .01 ***p < .001

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Luis M. Laosa has conducted extensive research in Hispanic/Latino communities (Chicano/Mexican American, Puerto Rican, Cuban American) throughout the United States, Mexico and South America. Dr. Laosa is the author of numerous scientific and scholarly publications; has served as scientific and technical advisor to government agencies, universities, research centers, and philanthropic foundation; and is a fellow of the American Psychological Society and American Psychological Association. His honors include a Martin Luther King, Jr./César Chávez/Rosa Parks Visiting Professorship at the University of Michigan, the Educational Testing Service's Senior Scientist Award, and induction into the Phi Kappa Phi Honor Society.

Dr. Laosa has also served on the editorial boards of *Review of Educational Research*, *Child Development, Developmental Psychology, Journal of Educational Psychology, Psychological Bulletin, the Journal of Applied Developmental Psychology, Early Education and Development,* and *Journal of School Psychology*. He received his Ph.D. (1971) from the University of Texas at Austin and has been on the research staff of Educational Testing Service in Princeton, New Jersey since 1976, where he holds the post of principal research scientist.