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POLICY ISSUES

USING DATA TO UNDERSTAND THE ACADEMIC PERFORMANCE OF ENGLISH LANGUAGE LEARNERS

By Drew H. Gitomer, Ph.D., Jolynne Andal, Ph.D., and Derek Davison

There has been and will continue to be a dramatic increase in the number of K–12 students who come to U.S. schools without proficiency in English. This dramatic increase, along with the No Child Left Behind (NCLB) Act, raises instructional and corresponding research questions (e.g., August & Hakuta, 1997). The educational system is responsible for ensuring that students who come to school without proficiency in English not only learn the English language but also achieve across the entire curriculum. Schools, districts, and states have implemented a broad array of instructional programs, such as immersion and transitional bilingual education, to support students with limited proficiency in English.

Two of the terms used to designate these students are *limited English proficient* (LEP) and *English language learner* (ELL). Because of its common usage as well as its more positive connotation, ELL is used by the authors.

POLICY RECOMMENDATIONS

- *Identify the types of ELL data that need to be collected and reported. (page 12)*
- *Develop and implement procedures to collect ELL data. (page 13)*
- *Make ELL data and reports easily accessible. (page 13)*

ISSUE OVERVIEW

Because of educational accountability demands, districts and states are required to collect and report certain kinds of information about English language learner (ELL) students. In general, these summaries report on the numbers of ELL students and how well they are performing on statewide measures of achievement—information that fulfills external accountability pressures. This edition of Policy Issues *has been developed to provide perspectives on how information that is already being collected can be analyzed and reported in ways that support the internal information needs of educational systems.*

Specifically, by using relatively straightforward approaches to analyzing their data, districts and states can better address and convey answers to the following:

- *What are the background characteristics of the ELL students in the school, district, or state?*
- *Are background characteristics of ELL students related to how well they progress academically?*
- *Are particular aspects of the educational program, including how instruction is organized and characteristics of teachers, related to student outcomes?*

IDENTIFICATION OF ELL STUDENTS

The federal government defines students as LEP by statute contained in the NCLB Act (see sidebar, "Definitions Used to Identify ELL Students"). However, the federal law also leaves it to individual states to define the exact criteria and methods by which a student is deemed to meet the NCLB definition. A spoken native language other than English and low performance on English proficiency tests are two common characteristics used to identify LEP or ELL students (Abedi, 2004).

Although determining if a student was born outside the United States and if that student uses a native language other than English is fairly straightforward, it is more complex and challenging to standardize a process to assess that student's proficiency in English as well as the student's abilities to use English in performing academic tasks. Although Title III of the NCLB Act mandates that the English oral language, reading, and writing skills of all ELL students should be evaluated (No Child Left Behind Act, 2002), it does not specify how each state ought to measure these skills. Classification into ELL programs and the kinds of accommodations provided for academic testing are quite variable (e.g., Abedi, 2004; Koenig & Bachman, 2004). Accommodations for completing standardized tests include providing oral reading of the test in the ELL student's native language, providing more time to complete the test, and even providing more lighting in the testing environment (National Center for Education Statistics, 2005b).

States have taken the initiative to use various measures to assess the English proficiency of ELL students. In a recent survey project, state education agencies reported using home language surveys, parent information, teacher observations, student records, teacher interviews, referrals, and student grades to identify ELL students (Kindler, 2002). Various standardized tests (see Table 1 on page 3) are also used to assess ELL proficiency (Kindler, 2002; Mahoney & MacSwan, 2005). The validity and reliability of these tests, however, have been questioned. Zehler, Hopstock, Fleischman, and Greniuk (1994) found significant differences in psychometric procedures, such as scoring directions, and the limited populations used to base the test norms.

Definitions Used to Identify ELL Students

The NCLB operational definition of LEP is as follows: "An individual—

(A) who is aged 3 through 21;

(B) who is enrolled or preparing to enroll in an elementary school or secondary school;

(C)(i) who was not born in the United States or whose native language is a language other than English;

(C)(ii)(I) who is a Native American or Alaska Native, or native resident of the outlying areas; and

(C)(ii)(II) who comes from an environment where a language other than English has had a significant impact on the individual's level of English language proficiency; or

(C)(iii) who is migratory, whose native language is a language other than English, and who comes from an environment where a language other than English is dominant; and

(D) whose difficulties in speaking, reading, writing, or understanding the English language may be sufficient to deny the individual—

- **(i)** the ability to meet the State's proficient level of achievement on State assessments described in Section 111(b)(3);
- **(ii)** the ability to successfully achieve in classrooms where the language of instruction is English; or
- **(iii)** the opportunity to participate fully in society."

Source: Title IX, Part A, Sec. 9101, of the No Child Left Behind Act (2002), available at http://www.ed.gov/policy/elsec/leg/esea02/pg107.html

TABLE 1. STANDARDIZED TESTS COMMONLY USED TO ASSESS ELL PROFICIENCY

Language proficiency tests	• Language Assessment Scales (LAS) • IDEA Language Proficiency Tests (IPT) • Woodcock-Muñoz Language Survey • Language Assessment Battery (LAB) • Basic Inventory of Natural Languages (BINL) • Maculaitis Assessment (MAC) • Secondary Level English Proficiency (SLEP) • Woodcock Language Proficiency Battery • Language Proficiency Test Series (LPTS) • Access for ELLs
Oral native-language tests	• Language Assessment Scale—Español (LAS[S]) • IDEA Language Proficiency Test—Spanish (IPT[S]) • Woodcock-Muñoz Language Survey—Spanish (Woodcock-Muñoz [S])
Achievement tests	• State achievement tests • National norm-referenced achievement tests • Gates-MacGinitie Reading Tests
Criterion-referenced tests (CRTs)	• Northwest Evaluation Association (NWEA) Assessment • District CRT/Benchmark • Qualitative Reading Inventory (QRI)

THE NCLB CONTEXT

The NCLB Act has specific requirements for reporting academic achievement of ELL students. For the first three years of schooling in the United States, students who are classified as LEP can be tested in their native language. After that, they are tested in English only. The National Center for Education Statistics (NCES) has used the following criteria for students classified as LEP or ELL as a guideline for administering the National Assessment of Educational Progress (NAEP). This guideline also has been applied more generally for NCLB testing.

- "A student who is identified on the Administration Schedule as limited English proficient (LEP) or as an English language learner (ELL is the term used by NAEP for the 2005 assessment and beyond) and who is a native speaker of a language other than English should be included in the NAEP assessment *unless*:
  - "The student has received reading or mathematics instruction primarily in English for less than 3 school years including the current year, *and*
  - "The student cannot demonstrate his or her knowledge of reading or mathematics in English even with an accommodation permitted by NAEP." (NCES, 2005a)

The results for these students, regardless of testing conditions, are still reported as part of the annual school reports. In fact, most ELL students fit into the LEP category as well as one or more unique reporting subgroups (e.g., Hispanic or Asian/Pacific Islander and economically disadvantaged).

The NCLB requirements, by reporting on LEP and other subgroup performance, provide a broad summary of ELL achievement. Yet, these reports by themselves are not sensitive to the kinds of factors that research has found to be important to English language development and overall achievement by ELL students. In order for districts and states to be able to put any NCLB results in perspective, and most importantly, to act upon that information, they must break down the summary information in greater detail. For guidance on the kinds of information that educational systems ought to be paying attention to, we turn to important findings from research.

REVIEW OF CURRENT RESEARCH

The Background of English Language Learners

While obvious, it is critical to recognize that students classified as ELL are hardly a homogenous group. They come to school with different family backgrounds and varying proficiency in their first language. Some ELL students have significant literacy competency in their first language and families who have strong education backgrounds; these students ultimately tend to do well academically and in the workplace (Sum, Kirsch, & Yamamoto, 2004). Other students have limited skill in their first language and families who have limited educational backgrounds; these students traditionally have not fared well in attaining literacy in English. There is evidence that a host of socioeconomic and background factors can have an influence on educational and life outcomes for nonnative speakers of English (Blair, Legazpi-Blair, & Madamba, 1999; Kao & Tienda, 1995; Schmid, 2001). Aggregating data on individuals with these very different backgrounds can lead to misleading interpretations of any resulting analyses.

ELL students also come to school differing on a number of other important dimensions, including their age and stage of language development in their native language; whether or not their parents are new immigrants to the country; the oral and written characteristics of their native language; the diversity of languages spoken in their school and classroom; the skill and background of their teachers; and policies and practices in classifying, retaining, and instructing individuals in ELL programs.

Despite all the variation among students and programs, most of the reporting related to student outcomes done by states and districts simply examines the performance of all ELL students as a single group. And yet, research in this area shows quite clearly that the diversity of ELL students and academic programs influences the achievement progress of ELL students. The understanding that we have about the achievement of ELL students is greatly illuminated by slicing the data (Jerald, 2003) in ways that help us see what is really happening underneath the averages presented for individuals who differ on important factors.

The relationship between native-language proficiency and English proficiency. Although students may have limited or no English-language skills, their own particular language histories do appear to influence how easily English is learned. For example, students come to U.S. schools with different levels of competence in their native language, and of course, they also have different native languages. Findings include the following:

- Students who have more developed language skills in their native language tend to acquire English more easily than those whose native-language skills are less developed (Genesee, Lindholm-Leary, Saunders, & Christian, 2005).
- Students whose native language is more similar to English tend to acquire English more easily than those whose native language is less similar to English (Chiswick & Miller, 1997; Dornyei & Skehan, 2003).

The relationship between immigration history and language development. There have been a number of inquiries into how English-language proficiency is acquired by students who have been in the United States for different periods of time. Various conclusions have been drawn, including the following:

- One crucial factor in a student's native language development would seem to be his or her age of arrival into the United States. The younger the age of arrival, the more likely that the student would have had his or her native-language development interrupted (Butler & Stevens, 1997; Collier, 1995).
- Butler and Stevens (1997) suggest that length of time in the United States may be related to English-language acquisition. For some students, length of time may be related to more contact with the English language and culture on a

consistent basis. But for other students, who are living in a fairly language-segregated setting, schools may be the only opportunity for contact with the English language.

The relationship between socioeconomic status (SES) and ethnicity and English acquisition. Often, ELL students have lower SES and are also categorized as members of an ethnic or racial subgroup reported by NCLB requirements. This means that one student may be included in adequate yearly progress (AYP) reporting for NCLB in multiple categories. It is also true that ELL students vary in SES and race/ethnicity. In fact, Terwilliger and Magnuson (2005) found that differences in SES and race/ethnicity were related to English-language performance on the NAEP. And conversely, because low-SES populations in general as well as Hispanic and Asian populations (to name only two examples) tend to include disproportionately high numbers of ELL students, policymakers concerned with low aggregate achievement scores for those populations should be aware that low levels of English acquisition may be involved.

Characteristics of Teachers and Programs

Just as the term *ELL student* inadequately describes the host of factors that are related to English language acquisition, so too does the term *ELL instruction*. The backgrounds of teachers vary significantly, as does the nature of instruction.

The relationship between instructional practices and academic performance. The issue of how best to teach ELL students has been of great interest. Programs vary on numerous factors, including the extent to which primary languages are part of instruction, the extent to which ELL students are taught in "language" classrooms, how academic subjects are taught, and how instructional practices interact with student characteristics. Even within categorical terms such as *immersion*, *bilingual*, and *English as a second language (ESL)*, there is great variability in what students actually experience. Genesee et al. (2005) summarize research comparing the performance of ELL students exposed to bilingual or specialized ESL classes to that of their ELL peers educated in English-only classes:

- Schools with highly effective bilingual education programs often have a low teacher-to-student ratio, benefit from high parental involvement, have a larger number of teachers certified in bilingual education, and offer regular staff development throughout the school year (Montecel & Cortez, 2002).
- Other studies reinforce the importance of inclusion of the students' language of origin, both as a pedagogical tool and as a means of communication with parents (Ramirez, 1992). Pedagogical and methodological differences can result from differences in teacher characteristics. For example, English-speaking teachers who are unfamiliar with ELL students' native language often rely more on peer interaction and small-group settings than ESL teachers who are familiar with the students' native language. These differences are taken into account in certain studies of ELL program progress (Ramirez, 1992).

The relationship between teacher language proficiencies and student learning. Although not conclusive, research has attempted to determine if there are relationships between teachers' backgrounds and their effectiveness as teachers. A related question is whether NCLB mandates for highly qualified teachers, particularly in terms of subject matter expertise, will have an effect on the language proficiency of the teachers in a school (and potentially on learning outcomes). Findings about teachers' backgrounds include the following:

- Although some research draws an indirect connection between a teacher's native language and student achievement (Garcia, 1991), several studies argue that teachers who are familiar with ELL students' culture and language create a more conducive learning atmosphere and have an overall positive effect on educational outcomes than ELL teachers whose cultural and linguistic backgrounds are different from those of their students (Darder, 1997; Garcia, 1991).

- The issue of familiarity with the students' language is compounded by the importance of the ELL teacher's level of English language proficiency (Guerrero, 1997, 1998, 1999). Researchers Walton, Baca, and Escamilla (2002) found that teachers in late-exit transitional bilingual education and bilingual programs were more likely to have the same native language as the ELL students. These factors punctuate the lack of certified bilingual educators for a growing ELL population.

The relationship of teacher preparation to staffing needs. In most states, teachers can attain special certifications or endorsements for the teaching of ELL students. The requirements for ESL and bilingual certifications vary significantly from state to state. What is clear is that significantly fewer teachers with formal background in teaching ELL students are available than are needed (Zumwalt & Craig, 2005).

The relationship between program continuity and academic success. If ELL programs are successful, students ought to be able to exit an ELL program at some point and participate in an academic program without any specialized English-language instruction. How long individuals stay in ELL programs and the process of transitioning out of ELL programs have been the objects of some research:

- Although their conclusions are not definitive, several researchers (Ramirez, Yuen, & Ramey, 1991; Thomas & Collier, 2001) have found that students who are in late-exit transitional bilingual education programs have better overall academic success than those who are in early-exit transitional bilingual education or ESL programs. In addition, early-exit programs do not necessarily produce higher achievement than immersion programs (Ramirez, 1992).
- When ELL students leave bilingual education prematurely, the achievement gap between native-English speakers and ELL students is either maintained or increased (Thomas & Collier, 2001). That is, the more time spent in bilingual classes, the more likely there will be higher learning outcomes. Nevertheless, the highest quality ESL programs in existence close the achievement gap by only 50 percent (Thomas & Collier, 2001).

More research in this area is essential to ensure that these findings are supported by robust, scientifically based methods (Rossell, 1999).

MEASURES OF ENGLISH PROFICIENCY AND ELL ACADEMIC ACHIEVEMENT

Measures of English proficiency and academic achievement are used to evaluate both ELL students and ELL programs.

Evaluating ELL Students

Two broad types of information are collected about ELL students. First, when educators are deciding whether a student should be placed into or be maintained in an ELL classification, a good deal of information about English proficiency is collected (as described in "Identification of ELL Students" on page 2). The same kinds of assessments used to determine initial classification are also used on a regular basis to monitor English-language acquisition and determine when a student no longer requires special services.

Second, information about ELL students' achievement across the curriculum also is collected. Standardized tests are used to assess the academic performance of ELL students. The use of tests that assess academic content understanding has raised significant validity questions (Koenig & Bachman, 2004). The primary concern is that performance may be attributable to English-language competence as much as or more than understanding of the material being assessed. Even straightforward translations raise validity questions because of factors such as cultural assumptions contained in the assessment item that may be less familiar to ELL students or practice materials available in languages other than English (Ascher, 1990; Huempfner, 2004). In fact,

Huempfner (2004) has suggested the development and use of parallel tests that involve more than direct translation. Test companies have developed parallel tests in Spanish that have the same content as the English versions.

Evaluating ELL Programs

There has been great debate about the relative effectiveness of instructional programs for ELL students. The dominant issue has been whether students should be taught in classes where only English is used or in classes where varying degrees of instruction occur in the native language. These studies have generally used standardized tests across a range of domains to evaluate outcomes. Although there are strong advocates for both approaches, recent research syntheses strongly suggest the advantages of bilingual programs (Rolstad, Mahoney & Glass, 2005; Slavin & Cheung, 2005).

Ramirez, Yuen, and Ramey (1991) found that ELL student achievement did not decline if students received some instruction in their native language. In fact, these students tended to close the achievement gap within a few years of entering the program. On the other hand, students placed in immersion or early-exit strategies tended to fall behind their English-speaking peers, a gap that often widened after four years in their respective programs. Ramirez, Yuen, and Ramey (1991) examined classroom practices in addition to achievement test outcomes. Teachers varied in their pedagogical approaches, with early-exit or immersion teachers relying more on peer interaction and small-group settings than late-exit teachers, who used large-group interaction.

REVIEW OF CURRENT DATA COLLECTION AND REPORTING PRACTICES

Strategies and practices for collecting data about ELL students at school, district, state, and federal levels continue to evolve. Some data are presented in regular reports and are available to the public. Other data are routinely available inside the educational system but are not publicly available, typically for reasons of confidentiality. There also are special analyses and reports that districts, states, and federal agencies produce on an occasional basis.

In the following sections, we review the kinds of data that typically are collected and reported and then make recommendations for other kinds of analyses, based either on current practices or research findings. In almost all cases, we try to suggest very straightforward analyses that will make minimal demands on data collection or analysis functions. (Of course, some district and state data systems are still unwieldy, making even apparently simple analyses relatively significant undertakings. We are working under the assumption that these data systems are continuing to improve and therefore assume relatively simple access to institutional data.)

What Data Do States and Districts Typically Collect?

States have progressed in how they collect and report data at state, district, and school levels about all students. States such as Illinois and Wisconsin have developed and established easily accessible websites that provide data and information useful for education policy and program decision making (Palaich, Good, & van der Ploeg, 2004). Coincidentally, the collection and reporting of data about ELL students and programs are also evolving. States now report their approaches to classifying ELL students into categories such as beginner, limited, or proficient. These presentations include full explanations of the characteristics of ELL students at each level. States generally report the measures they use to determine language proficiency, which range from standardized tests to interviews.

Some states and districts also report specific information about ELL students and their families. Most states collect and report the variety of native languages spoken by students. In addition to this data, all states and districts collect information

TABLE 2. TYPICAL DATA COLLECTED ABOUT ELL STUDENTS

Type of ELL Data	Description of Data	Source of Data
Gender and age	How old is the student and what is the student's gender?	Family survey
Socioeconomic status	Does the student qualify for free or reduced-price lunch?	School meals application
Native language	What language was the student first taught? What language does the student speak at home?	Family survey
English proficiency status	How proficient is the student in English?	District-administered assessment

regarding the socioeconomic status (as determined by free or reduced-price lunch), gender, and/or age. Even though most of this information is collected for all students in a district or state, it may not be disaggregated specifically to show ELL students. Table 2 presents a list and description of information that many educational systems collect about ELL students and their families. It includes data that may be collected for all students but that are particularly relevant to understanding ELL students.

Some districts and states, but not all, collect ELL data about teachers actively involved in ELL programs and the professional development provided to teachers for ELL instruction. For example, districts and states collect information about the certification of teachers to teach ELL students and specific endorsements for teaching ELL students in some states. Districts also collect data on teachers' proficiencies in the languages they teach. Moreover, districts may collect information on the professional development of their teachers regarding ELL instruction. For example, districts may collect information about whether teachers are using their professional development time to learn more about teaching ELL students. Some states also describe their requirements for teachers of ELL and immigrant students in terms of teaching cultural literacy and linguistics.

Finally, a smaller proportion of districts and states collect information about characteristics of their programs for ELL students. For example, some states fully explain the specific categories into which ELL students are placed and also describe the qualifications needed to fully exit an ELL program. In addition, some states describe the assessments used and how ELL students are initially identified. Some also describe the curricular requirements of their program in terms of cultural competencies and the statewide language arts programs. However, these kinds of detailed reports are exceptions; in general, states do not extensively report this information.

What Data Do States and Districts Typically Report?

Almost all states and districts provide regular reports about ELL students. Most reports are annual collections of data, available through the websites of the state departments of education. These reports are typically counts of students within particular categories. Examples of quantitative data reports on ELL students include enrollment by English proficiency (by state and by district); comparisons in proficiency and progress across language of origin, gender, and ethnicity; and long-term trends in enrollment, progress, and dropout rates across different variables. Although data are usually reported as cohort information, the data are sometimes reported longitudinally as well. Longitudinal data reports can be useful for policy and program decision making. For example, longitudinal information can provide data on how students perform academically over time in different kinds of instructional programs.

A few state department of education websites also make available collections of more qualitative data. These reports are mainly focused on standards of program quality and include program models for schools serving ELL students, including standards for curricula, training scenarios, surveys and questionnaires, and case studies of ELL students. Examples of the different types of information contained in such reports are presented in Table 3.

Data on the long-term progress of ELL students are not readily available. Dropout and retention data among ELL students are not easily accessible from states we surveyed. In addition, it is difficult to document the progress of ELL students if they are then placed into mainstreamed classes and no longer identified with an ELL status for AYP documentation (i.e., as students improve, or after two years have passed, they essentially "phase out" of their LEP status, meaning that overall LEP status can never improve). This raises at least one provocative question: Might districts have incentives not to graduate proficient students from LEP or ELL status in order to inflate their AYP measures among all LEP or ELL students?

Some states included reports on program models, curriculum benchmarks, parent response to programs, and yearly standards, but these states did not report whether or not the districts or schools were measuring up to these standards and benchmarks. Essentially, the states created lists of

TABLE 3. TYPICAL TYPES OF INFORMATION REPORTED FOR ELL STUDENTS

Category	Type	Level	Report Format
Language of origin	Enrollment levels	State, district, and school	5-year census
	Proficiency	State, district, and school	Multiyear comparisons in proficiency among subgroups of different language speakers
	Enrollment by grade level	State	5-year census
	Other academic performance	State and district	Proficiency in math and science by subgroup of original language
	Dropout rates	State	Retention/dropout rates among ELL students by language of origin
Instruction type	Percentage of students receiving	State	Multiyear trends in ELL students receiving various LEP services
	Number of teachers with non-English skills	State	Multiyear trends in number of teachers serving LEP students
	Percentage of certified teachers	State	Cross-state comparison of percentage of ESL-certified teachers
Legislation-specific	AYP measures	State and school	NCLB report cards show progress of LEP students
Proficiency	Race/ethnic origin	State and district	Multiyear comparison of progress of ELL students by race/ethnicity
	Gender	State and district	Multiyear comparison of progress of ELL students by gender
Standards	Report cards	State, district, and school	Measurement of AYP among ELL students (e.g., graduation rates)
Quality indicators	Program models	State	Curriculum benchmarking, training scenarios
Parent/student feedback	Case studies	State, district	ELL students' experiences: success and failure
	Questionnaires/ surveys	State, district, and school	Parents' responses to ELL practices

standards that schools and districts are not measured against in their performance. This is one area that states can continue to improve in their data reporting and, consequently, have more information that is valuable for making decisions on ELL instructional practices and programs.

TOOLS TO IMPROVE EDUCATIONAL SERVICES FOR ELL STUDENTS

When we review the data routinely reported (as in Table 3), we see that the most common type of reporting is univariate, in that it focuses on a single factor or variable at a time. Yet, when we examine the research about ELL students, it is clear that significant insight is gained when the relationship of multiple factors is explored through multivariate analyses (e.g., achievement levels for different primary language groups). Our understanding of ELL students is greatly enhanced by research that disaggregates the data in ways that help us to see patterns of relationships between particular factors related to ELL students (e.g., instructional practices) and students' progress.

School districts and states can enhance their data reporting by undertaking fairly straightforward analyses that examine patterns of relationships within their own system. While research often reports such patterns on average, the patterns that occur within a particular district or state can vary from the average in important ways. By examining these relationships in the local contexts, districts and states can better understand how things are working at the district or state levels.

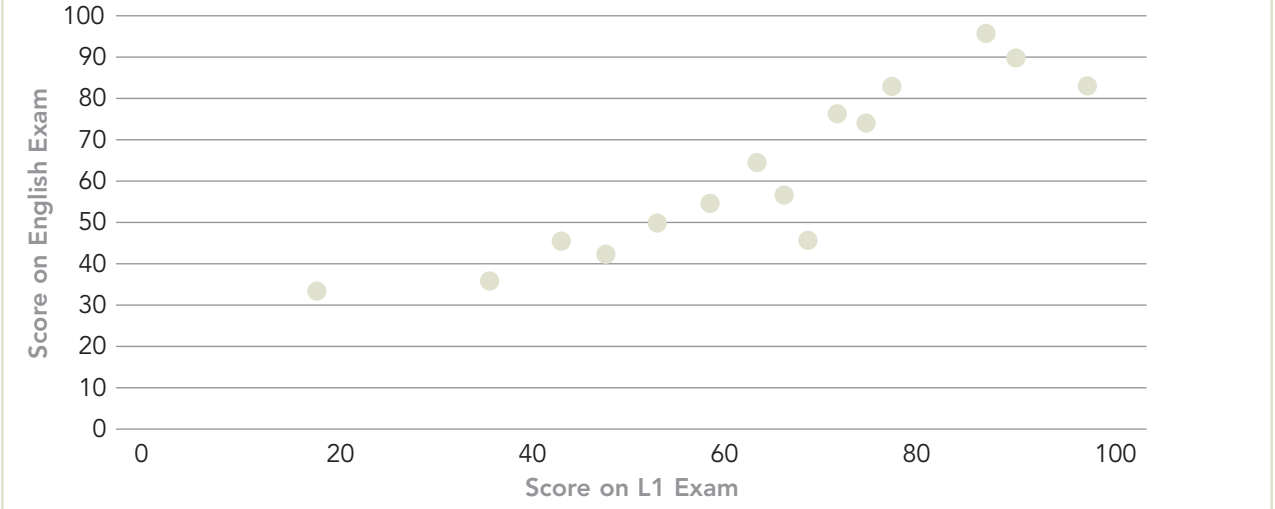
We present several examples of the kinds of data analyses and reports that can be accomplished at the local level, given the data that are routinely collected. We present types of analyses that do not require any sophisticated statistical machinery and can be accomplished even in systems with limited technical expertise.

Recommended Visual Tools for Analyzing Data

Different kinds of visual tools, including graphs, can be used to help analyze and present ELL student data. Three kinds of graphical presentations that can help answer ELL research and programmatic questions are presented. (All data are hypothetical.)

1. *Is there a strong link between a student's proficiency in his or her native language (L1) and his or her acquisition of English?* One type of graph to help answer this question is a scatterplot that illustrates the relationship between measured L1 proficiency and performance on an ESL-type test for a group of students (see Figure 1).

Figure 1. Scatterplot of Student Performance on L1 Proficiency Assessments Versus Performance on English Proficiency Assessment



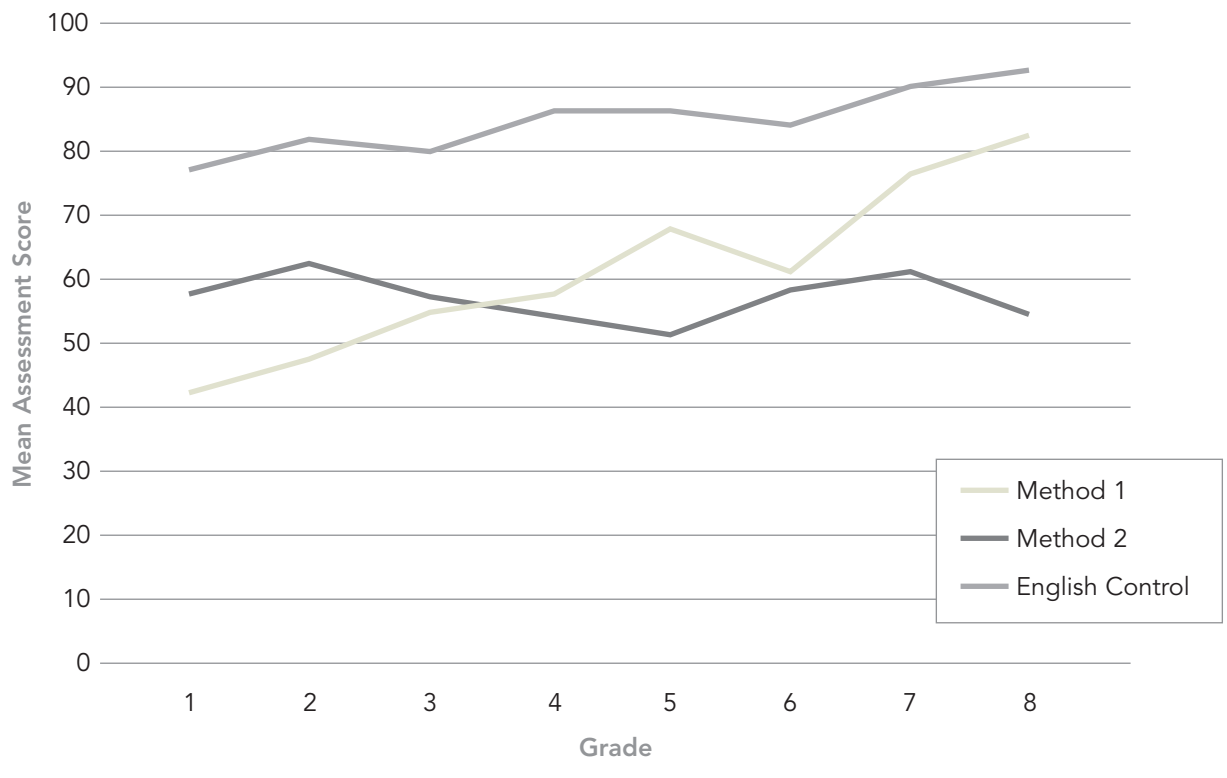
The scatterplot clearly illustrates how native language proficiency is strongly correlated to performance on an English-proficiency exam. That is, the more proficient a student is in his or her native language, the more likely that student is to perform well on the English-proficiency exam.

Other factors also need to be examined, such as the instructional practices that best utilize the students' language-acquisition skills and, consequently, support students to perform well on language-proficiency exams. Perhaps most important is to examine patterns of relationships for students who have been in the school system for several years. If the ELL programs are successful in helping students to learn English, the relationship shown in Figure 1 should weaken as students spend more time in the school system. Thus, districts could compare scatterplots for students who have been in the system for one year with scatterplots for students who have been in the system for two, three, or more years.

2. *Which primary instructional bilingual method is most effective in academic achievement over time?* A line graph can illustrate how similar cohorts of students undergoing different instructional methods perform on ESL exams over time, perhaps (but not necessarily) against a control group of native English speakers (see Figure 2).

The line graph is useful to examine which instructional method best prepares an ELL student to perform well on the assessment at each grade level. The presentation also raises important questions, depending on the data on which the graph was based. If Figure 2 represented a tracking of a group of ELL students through the first eight years of their schooling, then it is saying that ultimately Method 1 is more effective than Method 2 in supporting student achievement. However, if each of the grades represents a different cohort of students, it may be that Method 1 is more effective in the later grades while Method 2 is more effective with younger students. This single analysis will not provide a definitive answer, but as with many useful analyses, it raises questions that can be explored more closely.

Figure 2. Student Performance by Instructional Method Over Time



3. *What influence do socioeconomic factors have on LEP and non-LEP students' assessment scores?* A bar graph is one visual tool to show clearly how groups of students based on diverse factors (i.e., SES) perform on a scale (i.e., assessment scores). Figure 3 shows how such a graph might look.

The example shown in Figure 3 illustrates a simple comparison between the assessment scores of all ELL students and all non-ELL students. A hypothetical graph such as this would lead to an interpretation that the significant achievement gap between ELL and non-ELL students is most evident for students from low-SES backgrounds. The achievement gap between ELL and non-ELL high-SES students is much less dramatic. This information would allow policymakers to refine their strategies for targeting students who are most in need.

These three analyses should be considered as models upon which other kinds of important questions can be asked. These types of analyses are very useful for practitioners to better inform decisions on instructional practices and programs for ELL students.

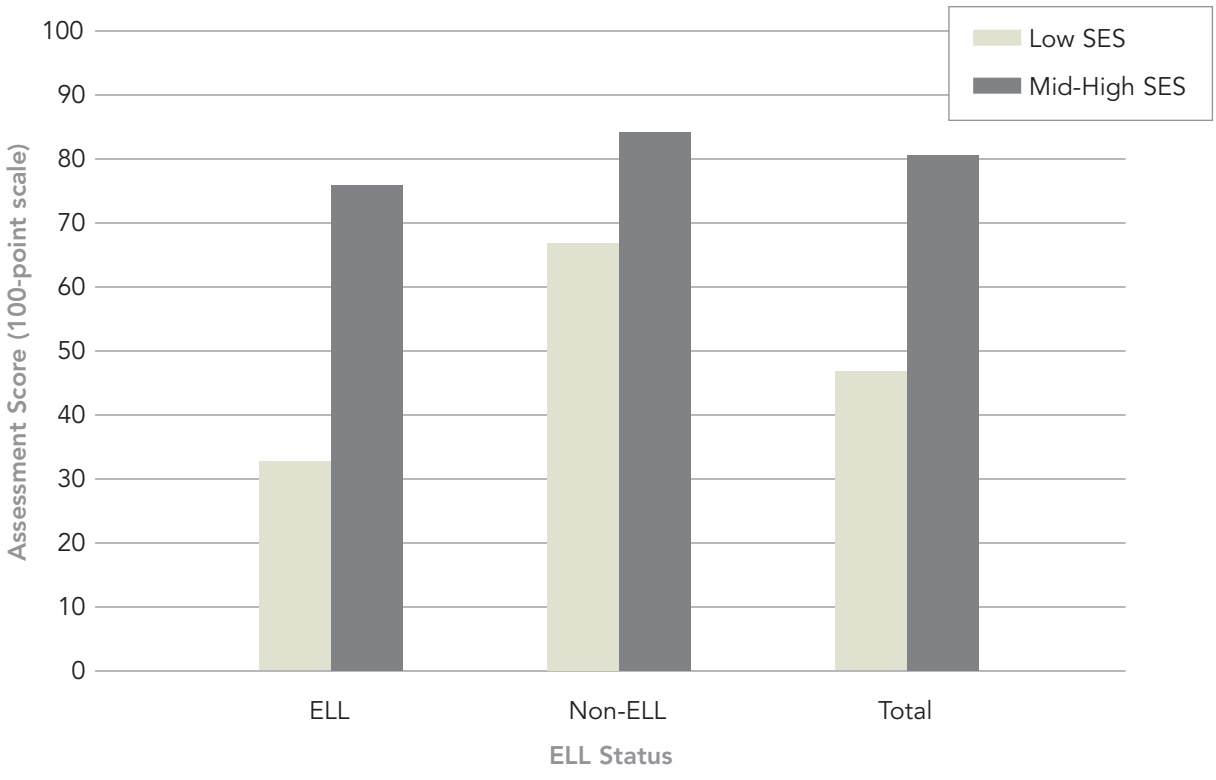
POLICY RECOMMENDATIONS

The continuing emphasis on and progress in data collection and reporting (e.g., Palaich, Good, & van der Ploeg, 2004) together with the increasing ELL student population and the NCLB mandate for educational practices based on scientific research provide major impetuses to develop procedures for improving the collection and reporting of ELL programs, policies, and student achievement. In order to enhance information about ELL students, we recommend the following:

Recommendation 1

Identify the types of ELL data that need to be collected and reported. There continue to be gaps in the ELL data collected at state levels. While great amounts of data are collected for NCLB, much of that data are not then used to explore issues important for ELL students. It is therefore recommended that data be disaggregated in order to look only at ELL students in each state or district. Since this is a subgroup under NCLB

Figure 3. Performance of ELL and Non-ELL Students by SES



guidelines, it is important to be able to compare these students to each other within and between states. Thus, data such as graduation rate, gender, age, and socioeconomic status should be shown specifically for ELL students. Also, it should be reported how long students are staying in the ELL programs. How many years does it take for students to learn English in each program? It may be useful to standardize the different proficiency levels among the states. In order to truly compare student achievement across states, the different classifications should be the same nationwide.

There are several demographic student factors that have been identified as being important to the progress of ELL students. Yet, some of these data are not collected or analyzed on a routine basis. There are important issues and obstacles to collecting some of these data. Nevertheless, if available, such data could be an important source of valuable information. For example, school procedures and policies can support the data collection of factors such as immigration history, as long as inquiries are within the range of legally permissible questions.

School records from the country of origin also could be useful for better understanding the strengths and needs of an ELL student. Unfortunately, obtaining school records from an ELL student's school in his or her country of origin could be arduous and time consuming. Thus, schools do not know an ELL student's educational background beyond what the student or the student's family might self-report.

The parents' educational background is another type of demographic information that might provide some data on the resources available to the ELL student. That information also can help determine what type of support to provide to the parents to help their child succeed in school.

Recommendation 2

Develop and implement procedures to collect ELL data. Some states report on their websites their procedures for collecting data. The effectiveness of these procedures needs to be documented so that other states can adapt and use them to address their ELL data-collection needs.

Recommendation 3

Make ELL data and reports easily accessible. Although several states report that ELL data is collected, these data are not readily accessible or reported. Visual displays, such as graphs, can also be used to illustrate the relationship between ELL program and policy factors and ELL student performance. These reports provide information in a succinct and clear manner. The method to develop these graphs is critical to ensure that the data are portrayed accurately. For systems without the requisite expertise, consultation with those experienced in such methods could prove to be extremely useful.

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AUTHORS

Drew H. Gitomer, Ph.D., wrote this article when he was a Senior Fellow at the National Opinion Research Center (NORC) at the University of Chicago. He is now a Distinguished Presidential Appointee at ETS. His research interests are in the areas of assessment design and teacher quality.

Jolynne Andal, Ph.D., is a Research Scientist at NORC. Her interests are in the application of scientific methods to the evaluation of educational programs and policies.

Derek Davison is a graduate student in Middle Eastern Studies at the University of Chicago. He has a master's degree in public policy and management from Carnegie Mellon University.

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