Title: Impacts of Instructional Pathways on English Learner Students: Preliminary Findings and Impacts from a University/District Research Partnership

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Abstract Body

Background / Context:
In the last few decades, the number of English Learner (EL) students has grown dramatically. While the school age population of children ages 5 to 17 has grown only 10 percent in the last 3 decades, the number of school aged children speaking a language other than English at home increased by 140 percent (National Center for Education Statistics (NCES), 2009). Language minority students made up 21 percent of the U.S. student population in 2009, and are projected to comprise over 40 percent of the school aged population by 2030 (Thomas & Collier, 2002).

The gaps in academic performance between EL and native-English speaking students are large. For example, in 2004 in California (where the partner district is located), the math and ELA achievement gaps between EL and non-EL students were 0.40 to 0.55 and 0.58 to 0.79 standard deviations, respectively, depending on the type of instruction received (Parish et al., 2006). Given these gaps, educators and policymakers need more and better information about how to improve the educational outcomes of EL students, including both academic outcomes (such as performance on standardized tests, graduation rates, college enrollment and completion) and English language proficiency. In this paper we focus on two specific outcomes – performance on state standardized Math and English Language Arts (ELA) tests and English proficiency status (as measured by reclassification to English proficient status).

Genesee et al (2006) report on five relatively high-quality studies that assess the effectiveness of bilingual versus English immersion programs. All but one of the studies found that native language instruction resulted in improved educational outcomes over time. The studies found that reading, math, and dropout outcomes all favored students in bilingual programs, particularly in late exit bilingual programs and high quality bilingual programs.

One of the key educational issues with regard to EL students is how to design and provide instructional programs that effectively meet the dual goals of helping students attain English proficiency and ensuring that they master the academic material expected of all students. On the one hand, instructional regimes that rely predominantly on instruction in English, in order to facilitate rapid attainment of English proficiency, may limit the academic material that students learn while learning English. On the other hand, instructional regimes that rely on home or dual language instruction may lead to slower acquisition of English (because students are less exposed to English, both from teachers and classmates), but improved academic achievement because students are taught academic content in a language they understand well (Baker, 2006; Cummins, 2000). Questions also exist regarding linguistic transfer and under what circumstances developing literacy in the home language has a positive or a negative transfer on English learning (August, T. Shanahan, & L. Shanahan, 2006; Bransford & Schwartz, 1999; Durgunoglu, Nagy, & Hancin-Bhatt, 1993).

Purpose / Objective / Research Question / Focus of Study:
The key aim of this project is to investigate the association between the type of instruction EL students receive and their subsequent academic outcomes, with the aim of both improving instructional practices in one school district and informing educators and policymakers more broadly. Although the research is primarily based in descriptive/regression analysis so far, future analyses using quasi-experimental methods may enable us to draw causal inferences about the effects of different instructional practices.
The main research questions of interest for the purpose of this paper include:

1. How do EL students’ academic outcomes and attainment of English proficiency vary across five different types of EL instructional programs (the District’s Dual Immersion, Bilingual (Early Exit and Maintenance), English Plus, and Newcomer pathways)?
2. How do the impacts of different program types vary among subgroups of EL students (defined in this paper mainly by ethnicity)?

In order to investigate these questions, we formed a research project partnership between a large urban school district (“the District”) and a university. The partnership is unique in that the research project, its questions, and focus—were initiated by the District rather than by the university partners. The grant that funds the work (from IES) provides funds to support not only the University researchers, but also provides funds for a district data manager to assemble the necessary data and work on building a data system for the District that will enable them to make better and faster use of their data on EL students in the future.

The District and university partners meet once or twice a month to discuss the data and emerging findings. These meetings shape the research agenda, and ensure that the research is designed to answer questions of interest to both the District and the broader educational research and policy community. Because of the close and equal partnership between the District and the university team, the project has already had influence on how the District uses its data to inform EL instructional practices.

Setting:

The District is an ideal site to investigate the role of EL programs on students’ linguistic and academic outcomes for four reasons. First, it has a large and diverse EL student population that presents many of the challenges typical to school districts in the US (37% EL, of whom roughly 40% are Spanish-speaking; 40% Chinese-speaking, and 20% of other language and national backgrounds). Second, its schools offer five distinct, well-articulated, and long-lasting pathways for ELL students, providing a rich opportunity for comparative study. Third, it has a wealth of longitudinal data on students, teachers, and schools. Finally, the district is an active and enthusiastic partner in this research, and is committed to using research to inform and improve their instructional programs for their ELL population.

Population / Participants / Subjects:

Research for this project involves evaluating nine years (2001-2002 to 2009-2010) of student-level longitudinal data (grade K-12) from a large district in California. This rich set of data includes many variables on students, teachers, schools, and the pathways EL’s attend.

Intervention / Program / Practice:

As described above, the purpose of this study is primarily to investigate the relative impacts of five types of EL instructional pathways on students’ academic outcomes and English proficiency. These four pathways are described in greater detail below.

English Plus Pathway. English Plus programs, often referred to as English Immersion programs enroll EL students in traditionally English-only classrooms, and offers additional services to support EL students’ acquisition of English. These supports include English
Language Development (ELD) courses and teachers use specially designed academic instruction in English (SDAIE methods) for content area classes (Undisclosed District, 2012).

**Early Exit Bilingual Pathway.** The Early Exit Bilingual pathway is designed to help students develop English proficiency and academic mastery, while using EL students’ native language to scaffold the acquisition of English. All students enrolled are EL’s from a specific target language. The amount of instructional time that incorporates English increases at a rapid pace until students become proficient in English and can be taught exclusively in English.

**Maintenance Bilingual Pathway.** Maintenance Bilingual programs are very similar to Early Exit programs, except that the goal is not only to ensure that students become proficient in English, but also to ensure that students maintain native language proficiency (i.e. the goal is for them to become bilingual).

**Dual-Immersin Pathway.** The Dual Immersion pathway brings both EL’s and native English speakers together, with the goal that both groups emerge bilingual in English and the target language (Undisclosed district, 2012). Such programs are similar in structure to bilingual programs. In the district of study, approximately one third to one half of the enrollees are native English speakers. At the elementary level, instruction begins in Kindergarten predominantly in the target language and then transitions to approximately 50/50 by the 5th grade.

**Newcomer Pathway.** Finally, the newcomer pathway is designed to help newly arriving immigrant students adjust to English in their first year in the U.S. school system. Like the bilingual programs, all students in a Newcomer classroom are EL’s. They typically receive periods of “survival English”, and receive extra transitional support and English instruction to fill any gaps from schooling in the sending country. Students typically transition out of this pathway within a year. Instruction is offered in the native language whenever possible or using ELD and SDAIE instructional methods.

**Research Design:**

This quantitative research study is mainly descriptive and regression-based analysis. First, we estimate differences in reclassification rates among five EL pathways, using student-level data from 2001 to 2009, controlling for student-level covariates and examining if and how reclassification rates vary by ethnicity and native-language.

The second part of the paper investigates academic achievement trajectories (in ELA and math) of EL’s enrolled in each of these instructional pathways from grades two through eight. Further, we investigate the degree to which pathway effectiveness might vary by student ethnicity. For this analysis we especially focus on differential effects between Chinese and Latino EL’s.

The results below are preliminary. We plan to use instrumental variables (IV) methods to obtain causal estimates, using changes in the availability and location of different pathways to identify exogenous variation in EL student enrollment in different pathways.

**Data Collection and Analysis:**

For our analysis of EL reclassification we use discrete-time hazard models. These models enable us to estimate the association between pathway enrollment and the timing of reclassification, controlling for student- and school-level covariates. We use similar models to estimate the rates at which students meet five specific criteria for reclassification (fluency in
speaking, listening, reading, and writing in English, as well as meeting a minimum threshold on an English Language Arts (ELA) exam. These analyses enable us to determine which criteria pose the most important barrier to reclassification, and whether this varies across pathways.

To investigate how academic achievement trajectories vary among pathways, we fit multi-level growth models. In these models, the outcomes are student scores on state standardized tests in ELA and math in grades 2 through 8. These models enable us to evaluate in which pathways students are learning academic skills most rapidly.

**Findings/Results:**

Our reclassification analyses show important differences in the proportion of students reclassified and the timing to reclassification by instructional pathway. Prior to introducing control variables, we find that more EL students reclassify, and reclassify at a faster rate, in the Bilingual Early Exit and the English Plus instructional pathways. The Newcomer and Dual Immersion pathways have the lowest and slowest reclassification rates [see Figure 1]. Much of this difference, however, appears to be driven by differences in student characteristics between the pathways. Of particular importance is student ethnicity: Chinese students have much higher reclassification rates than Latino students [see Figure 2].

When considering academic growth experienced by EL’s by the pathway they are initially enrolled in, we find sizable differences, which persist after available controls are added. Specifically, we find that ELs demonstrate the most academic growth in ELA when initially enrolled in the Dual Immersion, Newcomer, and Maintenance Bilingual pathways, while across all pathways, growth in math appears fairly similar [see Figure 3].

When considering differences by ethnicity, in ELA, we see that Latino EL’s fare the best when initially enrolled in Dual Immersion, Newcomer, or Maintenance Bilingual, and worst in English Plus, while Chinese EL’s fare the best in English Plus, Newcomer, and Maintenance Bilingual, and worst in Dual Immersion and Early Exit Bilingual. The most noticeable contrast is that between Dual Immersion and English Plus, where English Plus appears to be best for Chinese students in both ELA and math, while the reverse pattern is true for Latino EL’s [see Figure 4].

**Conclusions:**

There are important implications of our findings for the district we are partnering with. Though not conclusive, these findings suggest that there is either strong selection into these pathways or that there are meaningful differences in pathway effects. These findings may also suggest that pathways have different effects for EL’s of different ethnicities and native languages. Alternatively, it may be that pathways are implemented differently in different contexts. Our future quasi-experimental analysis will help us to disentangle the degree to which program effects are due to the pathways themselves or due to selection. If accepted, we will have a district partner at the conference who will discuss how the findings are being used by the district.
Appendices
Not included in page count.

Appendix A. References


Appendix B. Tables and Figures

Figure 1

Cumulative Proportion of EL Kindergarten Entrants who were Reclassified, by Grade and Initial Pathway

- English Plus
- Bilingual Early Exit
- Bilingual Maintenance
- Newcomer
- Dual Immersion

Figure 2

Cumulative Proportion of EL Kindergarten Entrants who were Reclassified, by Grade and Ethnicity

- Japanese
- Chinese
- Other Asian
- Other
- Filipino
- Latino
Figure 3

Average growth in ELA among ELL kindergarten entrants, by initial path, random intercepts and slopes

Notes: Students’ intercepts and slopes are explained by initial pathway, generation status, gender, initial English proficiency score, ethnicity, proportion frpl in initial school, proportion EL in initial school, and size of initial school.

Figure 4

Average growth in ELA among ELL K entrants, by initial path & ethnicity random intercepts and slopes