¿Hablas Inglés?

Is Cultural Immersion Truly the Best Way to Learn a New Language?

Introduction

Since 1990 the number of legal immigrants in the United States has more than doubled (Monger, Yankay 2013). With this drastic rise in the number of immigrants comes a rise in the demand for English learning. A study conducted in 2009 explored the efficacy of learning programs for Latino students whose families migrated to the United States. Parents and grandparents of immigrant families struggle with language barriers as well as cultural differences. Through the public school system, children of these immigrants are given the opportunities and the tools to overcome these barriers and succeed both educationally and socially (Slavin, 2009).

Prior to Brown vs. The Board of Education students were segregated by race, thus creating substantial, socioeconomic and quality gaps across schools. Today we no longer see mandated segregation but instead segregation due to geography which often times leads to racial and income segregation. Much policy debate has been done on the costs and benefits of bussing students in an attempt to integrate and "level the playing field" so to speak. While extensive research has been done on the effects of peer groups, little emphasis has been placed on any outcomes other than intelligence. Research as such may give rise to a new type of bussing schedule. For Example, is there a particular student racial composition that optimizes English learning?

According to the 2000 census, California has one of the densest Hispanic and Latino populations in the United States (Census, 2000). With high racial diversities often come vast socioeconomic differences. In 1988, in an attempt to dampen the differing effects of

socioeconomic status on educational achievement, the state of California passed Proposition 98, The School Funding Initiative Constitutional Amendment and Statute. This initiative changed the allocation of state funding for public schools, redirecting it to where it was most needed (California Department of Education). Funds are now transferred from schools that have excess to schools in need.

Cultural Immersion is often times believed to be the most effective way to learn a second language. The CALIS program at City University of Hong Kong believes in its effectiveness stating, "The purpose of CALIS is to help students improve their communication skills in English through immersion in overseas language learning and community activities." (City University of Hong Kong). If cultural immersion promotes language learning, there likely exists an optimal student makeup that capitalizes on this peer effect.

There is a widespread disbelief in the effects of peer groups amongst economists. Little empirical evidence is available suggesting that peer groups actually affect student performance in the absence of other factors such as income. This disbelief does not, however, stop policymakers and education professionals from seeking integration. The theory behind peer groups suggests that the main explanation for students' academic achievements is the peer groups with which they are affiliated. As a result of the theory of peer groups, student busing is widely debated and tested across the United States.

I contribute to the current research by studying the effects of cultural immersion, exemplified by higher populations of White students, on English speaking ability amongst Hispanic and Latino students in the state of California, rather than the vastly researched effects on intelligence. Assuming, for simplicity, all White students speak English, the theory behind

peer effects would suggest a positive correlation between higher populations of White students and English fluency amongst Hispanic or Latino students. A finding as such may suggest a different type of bussing schedule than the ones previously proposed.

Literature Review

Much research has been done previously on the effects of peer groups. Donald R. Winkler studied the effects of differing socioeconomic statuses and racial composition of schools on student achievement. Winkler's main question is whether or not racial integration is a necessary condition in order to assure equality of opportunity in education (Winkler, 1975). He further formulates three underlying questions of concern: 1.) Are blacks and whites exposed to similar student bodies in terms of racial and socioeconomic composition? 2.) When other casual factors are controlled for, what is the size of the relationship between student body composition and student achievement on standardized achievement tests? 3.) Do the effects of student body composition on achievement vary by race of student (Winkler, 1975)? Winkler finds that schools with higher populations of black students also have higher populations of families with lower socioeconomic status. The size of the relationship between student body composition and student achievement is found to vary depending on the race of the student. Black students are found to be effected more heavily by racial composition. Black students moving from predominately black schools to predominately white schools are adversely effected (Winkler, 1975). Many researchers, such as Alan Wilson find that racial makeup of a peer group has less to do with achievement than the socioeconomic makeup of the peer group (Winkler, 1975).

Economists, Joshua Angrist from MIT, Aimee Chinn from University of Houston and Ricardo Godoy from Brandeis University studied the differences between English and Spanish instruction and English speaking ability in Puerto Rico. Prior to 1948 the primary language used in schools throughout Puerto Rico for teaching was English. Today, Spanish is the preferred instructing language (Angrist, et al., 2006). Using a difference-in-difference model they explore the effect of this change in instructor language on English speaking ability. Ultimately, they find little impact. "Perhaps surprisingly, our results suggest that the change from English to Spanish as the medium of instruction in public schools had little effect on Puerto Rican English proficiency," (Angrist, et al., 2006).

Because of the way the public school system is constructed, any experimenting with peer groups among students in the public school system is nearly impossible. Military academies, on the other hand, are not constrained by public education laws. Scott Carrell of UC Davis, along with Bruce Sacerdote and James West created an ideal experiment using incoming freshman to the United States Air Force Academy. Using GPA, students were categorized as either low, middle, or high expected GPA. Students were then placed in peer groups in an attempt to created different outcomes in students' actual GPAs. Carrell found "policies that manipulate peer groups for a desired social outcome can be confounded by changes in the endogenous patterns of social interactions within the group." (Carrell et al., 2012). Students placed in certain peer groups in hopes of improving their expected GPA actually did worse. It was found that these students completely ignored the peers with which they were hoped to interact (Carrell, et al., 2012).

In consensus with these three literatures, most research finds that peer groups have either little effect or opposite effects of those expected. This lack of empirical evidence backing peer effects suggests seeking educational integration may be a waste of resources. Researcher, Angrist, Chin and Godoy in particular, find that immersion is not empirically superior when learning a second language.

Data

I evaluate the state of California as it is one of the most racially diverse states in the United States. Data was collected from 37 counties across the state. These counties were selected for their availability of data for all relevant ethnicities. By using county wide data I am able to soak up most of the possible selection bias. Theoretically parents have the ability to select the school their child attends. This selection is often times constrained to intra-county movement versus movement from one end of the state to the other.

As mentioned, California's passing of Proposition 98 helps control for income differences across the state and eliminates any possible omitted variable bias from a difference in expenditures. Data is not available for the amount of funding and non-monetary contributions coming from private donors such as parents and graduates; this could possibly cause omitted variable bias leading to an understatement of the effects of funding and outside involvement on English speaking ability. It is likely that schools with highly involved parents see higher performance all around. To further control for income differences I use the percentage of students in the county on free and reduced lunches.

Early elementary age students, regardless of ethnicity, are expected to be quite ineloquent in their speech and writing skills. Elementary school, however, represents children's first peer group. Therefore, I wanted to capture this first possible peer effect. For these reasons, I chose sixth graders as my sample.

Students in the state of California with a home language other than English are required to take California's English language Development Tests (CELDTs). These tests are administered to students within 30 days of arriving at the school. Students are then tested annually thereafter; these annual scores are the scores included in the data set. The test is broken into four sections: listening, speaking, reading and writing. Only speaking scores are collected as I am only concerned with English speaking ability. All scores collected pertain to students coming from Spanish speaking homes. A possible problem that arises with this data is the lack of information regarding when students being tested moved to the United States. It is possible that sixth grade is a student's sixth year of learning English, or it could be his/her first. There is no way to control for this difference across students. Furthermore, I must make the assumption that all students of Hispanic and Latino descent, if not English speaking, are Spanish speaking. Another possible shortcoming is the likely difference between parents and children in non-English speaking homes. It is very common for children to be fluent in English and have parents that speak little or no English. Without more information on home dynamics this is nearly impossible to control for. The most recent four years of available data are included, 2008-2011.

A final control variable, the percentage of students in special programs, is included to control for differences in teaching style across counties. English Language Learners (ELL) and

English Language Proficiency (ELP) are special programs for students whose first language is not English. Summary statistics are included in table 1.

Method

If an ideal experiment were possible I would study students from homes with identical socioeconomic status. Students would be identical in their initial English speaking abilities and would come from families with the same English speaking abilities. I would randomly assign students to classes with different racial makeup. Some students would go to classes with lower percentages of white students and some with higher percentages of white students. The random assignment eliminates the danger of any biases. Aside from racial composition, classes and teachers would be equal. I would give all students, regardless of race, the same verbal English test on the first day of class. I would then give the same verbal test on the last day of class. I could then compare students across time and across schools.

Because an ideal experiment is not available I compare students across time and across counties. I use a multiple linear regression to regress scores on the percentages of white students in the county, the percentages of students on free and reduced lunches and the percentages of students in special learning programs.

An interaction term between the percentage of white students and the percentage of students on free and reduced lunches is incorporated to account for a high correlation between the two variables. Indicator variables were created for years to explore differences across time and indicator variables were created for counties to explore differences across geographical areas. The regression is run as follows:

English Speaking Ability=$\beta_0+\beta_1$(%White)+β_2(%F&R lunches)+β_3(%Special learning)+β_4(%White*%F&R lunches)+β_5(%White*%Special learning)+β_6(Year matrix)+β_7(County matrix)+ε_i

Data regarding the percentage of students in special English learning programs is unavailable for two of the four years thus constraining the sample size significantly. Furthermore, due to multicollinearity between years and special learning programs only one year is left in the regression. Differences across time appear to be more significant than the percentage of students in special English learning programs and thus I dropped this variable. The final regression is as follows:

English Speaking Ability=$\beta_0+\beta_1$(%White)+β_2(%F&R lunches)+β_3(%White*%F&R lunches)+β_4(Year matrix)+β_5(County matrix)+ε_i

For results see Table 2

Results

An original scatterplot displaying California's English Language Development Test scores and the percentage of white students shows a positive, linear relationship (see Chart 1). Once controls for income, differences across time and differences across counties are added to the regression, I find no significant effect of higher percentages of white students on English speaking ability amongst Hispanic and Latino students. Changes across time remove all the

significance from any other changes, suggesting that overtime English speaking ability has improved due to some exogenous variable not accounted for in my model. Other significant variables include ten of the thirty-seven studied counties. Attending school in Imperial, Monterey, San Francisco, San Mateo, Santa Clara or Ventura County causes an expected decrease in scores between 10 and 30 points. On the other hand, attending school in Butte, Lake or Shasta County causes an expected increase in scores between 10 and 45 points. These changes in expected scores across counties suggest that there is some other difference between counties that is not being accounted for.

Conclusion

The state of California has a fast growing population of Hispanic and Latino students in their public school system. The fast growth creates an increase in the demand for learning English. It is widely believed that cultural immersion is a superior way of learning a second language. This theory suggests peer groups have the strongest influence on English speaking ability. The effectiveness of peer groups has been widely disproved and disbelieved; however, educators and policymakers still fight for integration in schools. A possible argument for the integration of Hispanic and Latino students into higher White populated schools could be an improvement in their English speaking ability due to these higher populations of White students.

Using the percentage of White students in the county as my main explanatory variable as well as other variables to control or income and other differences across time and county I find that there is no significant relationship between higher percentages of White students and

English speaking ability. It is important to note, California has a racial makeup and education policies that are unique to California. I would be skeptical to generalize these results to other institutions such as professional workplaces or colleges.

These findings suggest that higher populations of White students do not have a positive effect great enough to justify a bussing schedule contingent solely on this theory. The cost of bussing students is often high and the expected return is not in the favor of bussing. In consensus with past research on peer effects, I find higher percentages of White students do not improve English speaking ability amongst Hispanic and Latino students in the state of California.

Tables and Charts

Table 1

Summary Statistics			
Variable	**Observations**	**Mean**	**Std. Dev.**
Percentage of White Students	148	35.83	17.15
Students on Free and Reduced Lunches (%)	148	50.089	14.34
Students in Special Programs (%)	74	24.35	10.04
CELDT Scores	148	529.48	11.99

All data collected from California Department of Education and National Center of Education Statistics

Chart 1

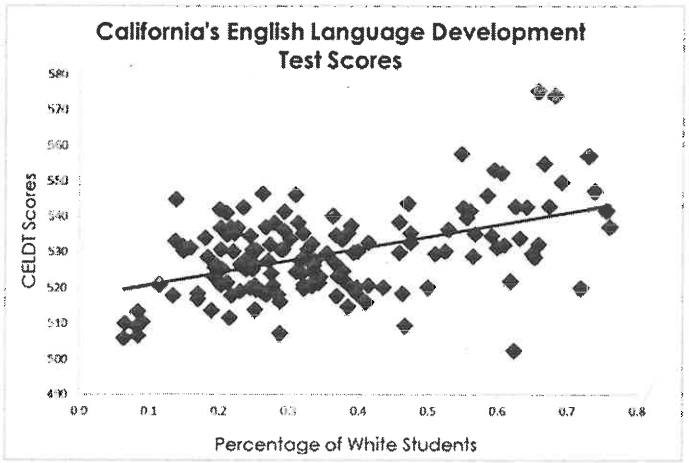

Table 2

CELDT Speaking Scores		
	Coefficient	Standard Error
Percent White	0.07	0.38
Percent Free & Reduced Lunches	0.10	0.31
Interaction	0.00	0.01
Year		
2009	4.79***	1.55
2010	7.73***	1.93
2011	14.20***	2.04
County		
Butte	8.56	7.73
Contra Costa	-3.19	5.78
El Dorado	4.48	12.24
Fresno	-11.95	7.50
Humboldt	5.51	9.58
Imperial	-30.19***	10.23
Kern	-16.41**	6.89
Kings	-7.92	6.29
Lake	13.60	10.35
Los Angeles	-1.75	7.01
Madera	-18.15**	7.64
Marin	-6.25	11.03
Merced	-14.37	8.60
Monterey	-16.72**	7.33
Napa	-4.84	5.20
Orange	-3.41	5.08
Placer	0.84	12.56
Riverside	-2.44	4.98
Sacramento	-7.13	5.92
San Bernardino	-2.44	6.47
San Diego	-6.93	5.34
San Francisco	-21.59***	6.63
San Luis Obispo	-0.25	8.77
San Mateo	-8.42	5.02
Santa Barbara	-0.81	5.47
Santa Clara	-8.23*	4.66
Santa Cruz	-10.33*	5.76
Shasta	29.50**	10.78
Solano	-11.13**	4.85
Sonoma	1.15	7.25
Stanislaus	-9.05	6.49
Sutter	-11.19	6.64
Tulare	-12.23	8.31
Ventura	-13.07**	5.72
Yolo	-4.87	6.30
Yuba	-3.84	8.29
Constant	525.70	13.69
R^2		

*p < .10; **p < .05; ***p < .01 (two-tailed tests)

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