



Non-Native Peers in School: What is the Short- and Long-Term Effect of Immigrant Children?

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What We Studied

This paper focuses on the role of non-native peers in classrooms. What is the impact of classroom composition on short- and long-term academic outcomes of native students? This study takes multiple approaches to estimate the causal impact of non-native students in Grade 9 on students' test scores and college attainment. We find that while the number of non-native or English Language Learner (ELL) students in 9th grade has a small negative short-term impact on reading and math scores, the effect on high school completion or college enrollment is minimal.

The short-term effect of non-native students has been widely studied; however, the causal link is still unclear and difficult to generalize (Cho, 2012; Geay et al., 2013; Tonello, 2015). Recently, Anelli et al. (2018) have found that native students are less likely to major in STEM majors in college when there are more non-native students in the introductory math class in the freshmen year. All of these studies use an idiosyncratic variation of the number of non-native students in the classroom to identify the causal effect. However, using idiosyncratic variation in classrooms may not capture the actual peer effect because of a spillover effect. To be specific, the performance of a student can be affected by not only students in the same classrooms, but also their classmates in different classes. To avoid this problem, this paper attempts a school-level analysis.

The long-term effects of the presence of a non-native student are a very interesting question but still understudied. There are two questions relevant to this long-term effect:

- First, if a native-born student was exposed to non-native students in her early life (in primary school), does it affect her later academic careers such as high school or college completion?
- Second, if non-native students acquire sufficient language skills and knowledge of the American system, do they still have a positive or negative effect on native students?

This paper also attempts to provide answers to these important questions and contributes to the literature.

How We Analyzed the Data

Immigrants specifically choose their location based on demographic and regional characteristics, which are correlated with school characteristics. Thus, the number of nonnative students in school is not exogenous. This paper uses two approaches to identify the causal effect of non- native students:

- First, I follow the previous literature and use the idiosyncratic variation in classrooms (fixed-effect approach).
- Second, following the immigration literature, I use the historical share of immigrant students at the school level as an instrument for exposure to immigrant students (instrument variable approach).

In both approaches, I use the share of immigrant students in 9th grade. The former exploits the fact that the variation of the number of foreign students is random in each class when the school and class level means are controlled by the fixed effects. The latter utilizes the historical settlement of immigrants in each school, assuming that people from certain backgrounds are more likely to prefer one area to another due to the network. This assumption seems to be reasonable given that there was a surge in the number of immigrants coming to Texas after 2000 is driven by the economic and political situations of the source countries.

Most of the studies about immigrant students in the education literature take the former approach because it utilizes most of the available information in the student-level data set, however, we suspect the estimated effect might be biased if there is a cross-classroom spillover effect which would be quite large in the secondary school where students from multiple class take courses together. We conduct both methodologies, compare the results, and suggest which one is the best identification strategy when studying this topic.

One important question is whether the impact of non-native students changes as they stay longer in the American school system. Using ERC data's information on English Language Learner (ELL) status and language spoken at home, we can define non-native students in two ways: Students who are currently enrolled in ELL courses are defined as narrowly defined non-native students, and those who have ever enrolled in ELL in the past are defined as widely-defined non-native students.

What We Discovered

Unfortunately, our research was unable to provide consistent answers to the research questions we set out to answer. This is due to several unforeseen flaws in identification assumptions. First, using two different empirical strategies lead to different estimates, making it difficult to interpret the results. When using the fixed-effect approach, the results are consistent with the literature.

While the presence of narrowly defined non-native students (students who are currently enrolled in ELL courses) at 9th grade negatively affect white students' reading and math scores at 9th grade, widely defined non-native students (students who speak a language other than English at home or who have ever enrolled to ELL classes in the past) have limited impact. The negative impact of narrowly defined non-native students at 9th grade quickly fades out as students proceed to upper grades. This pattern is not observed when using the instrumental variable approach. The impact of non-native students on 9th-grade test scores (same year) is minimal using both definitions. However, the middle-term effect of non-native students in 9th grade rather gets larger over time, which is counterintuitive.

We also test whether exposure to non-native students affects high school completion and college matriculation of native students. The overall long-term effect is minimal. Only black female students were negatively affected by the non-native students in 9th grade when using the fixed-effect approach.

Discussion/Policy Recommendations

These results suggest that a more sophisticated research design is necessary to estimate the true short- and middle-term effect of non-native students. Each research design has different assumptions, and it is important to use the most appropriate strategy.

Results with fixed-effect strategy show the negative effect of narrowly defined non-native students or ELL students is temporary. This implies helping non-native students acquire English skills may have a positive effect on native students as well.

References

- Anelli, M., Shih, K., & Williams, K. (2018). Foreign Peer Effects and STEM Major Choice. In *IZA Discussion Paper* (IZA Discussion Paper, Vol. 10743).
- Cho, R. M. (2012). Are there peer effects associated with having English Language Learner (ELL) classmates ? Evidence from the Early Childhood Longitudinal Study Kindergarten Cohort(ECLS-K). *Economics of Education Review*, 31, 629–643. <https://doi.org/10.1016/j.econedurev.2012.04.006>
- Geay, C., McNally, S., & Telhaj, S. (2013). Non-native speakers of English in the classroom: what are the effects on pupil performance? *The Economic Journal*, 123, F281--F307. <https://doi.org/10.1111/ecoj.12054>
- Tonello, M. (2015). Peer effects of non-native students on natives' educational outcomes: mechanisms and evidence. *Empirical Economics* 2015 51:1, 51(1), 383–414. <https://doi.org/10.1007/S00181-015-0995-Y>

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