

Diversity in Schools: Impact on Academic Achievement of U.S. Native Students

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on cultural diversity in schools and the educational performance of native students

Foreign-born students constitute an increasing fraction of the student body population in many countries. These shifting demographics have spurred policy discussions about immigration's impact on public education, along with concerns about potential costs to public schools, local governments, and the academic progress of native students. Our forthcoming research (Figlio et al.) delves into the relationship between cumulative exposure to immigrants throughout students' educational trajectory and their academic achievements within the U.S. context.

The presence of immigrant students can have different effects. On one hand, the assimilation challenges they face may necessitate extra educational resources, which could inadvertently affect native students (Fix and Zimmerman, 1993). On the other hand, the academic performance of some immigrant groups can surpass non-immigrant peers from similar socio-economic backgrounds, due to difficult-to-measure attributes such as hard work and resilience. Research reveals that, after controlling for socio-economic status (SES) and academic ability, the cultural orientation

of immigrant families affects students' beliefs, expectations, and their academic success. For example, Hsin and Xie (2014) show that Asian and Asian-American's greater academic success is linked to cultural differences in beliefs regarding the connection between effort and achievement, while Figlio et al. (2019) link the over-achievement of immigrants from specific countries to cultures that emphasize deferred gratification and self-control. Exposure to peers with strong work ethics can consequently foster positive attitudes and behaviors among U.S. native students.

The presence of immigrant students could have both positive and negative effects on natives' academic achievement



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Academic research investigating how immigrants affect the educational outcomes of native-born students faces two significant empirical challenges stemming from the selective nature of both immigrant and native-born student populations. First, immigrants do not choose schools randomly; they are more likely to enroll in institutions with students from disadvantaged backgrounds. Second, native-born students, especially those coming from relatively affluent families, tend to move when immigrant students arrive in their schools, a phenomenon termed “native-flight.” While prior studies have tackled the nonrandom selection of immigrants into schools, data limitations have hindered the examination of nonrandom selection among native-born students.

We address both selection issues using a large administrative dataset from the Florida Departments of Education and Health, containing information on educational outcomes of K-12 students who attended Florida public schools between 2002 and 2012, linked with birth and vital records. The unique features of the matched birth-school records and the longitudinal nature of the data allow us to calculate the cumulative exposure to immigrants across students’ school trajectories (e.g., to how many migrant and for how many years a native student has been exposed to). Moreover, the linkage with birth certificates facilitates the identification of siblings, which enables controlling for all observable and unobservable family life-cycle characteristics (i.e., by comparing children living in the same household, regardless of their current school, but who have been differently exposed to immigrants in their classrooms in the past). Inclusion of so-called *family fixed effects* in the analysis is especially important to tackle the issue of non-random selection of native-born students, and research not doing it has been more likely to find a negative correlation between immigrant

exposure and native-born students’ outcomes (i.e., as native students who are high achievers are the ones more likely to react to immigrants by changing schools).

Figure 1 depicts results for the entire sample of U.S. native students in Florida public schools who speak English at home, alongside subsamples of White/Black and free lunch/non-free lunch students. We consider two model specifications: one with only school fixed effects (i.e., comparing children within the same school with higher/lower immigrant exposure), which controls for the nonrandom immigrant assignment, and another incorporating family-year fixed effects, which controls for both non-random immigrant assignment and native-students selection. In the conventional model without family fixed effects, we find a negative and significant, albeit small in magnitude, correlation between the cumulative exposure to immigrants and the academic performance of US-born students. However, when family life-cycle dynamics are considered, the correlation transforms into a positive one. This underscores the pivotal role of accounting for family attributes in understanding immigrants’ impact on native students’ academic performance.

Our study also reveals that the sorting phenomenon primarily involves White and affluent students, whereas students from lower socio-economic backgrounds do not move away when immigrants arrive (as manifested by the similarity of effects when including or not the family-year fixed effects). Further examination of distinct subgroups underscores the pronounced benefits experienced by Black and low-SES students when exposed to immigrant peers. In terms of magnitudes, in the overall sample, moving from the 10th percentile to the 90th percentile in the distribution of cumulative

exposure to foreign-born students (which correspond to 1 and 13 percent, respectively) increases scores in mathematics and reading by 2.7 and 1.7 percent of a standard deviation, respectively. This effect is equivalent to 8.5 percent of the gap in tests scores between children whose mothers hold high school diplomas and those whose mothers did not complete high school. Remarkably, this effect is amplified for lower-SES and Black students, doubling its magnitude.

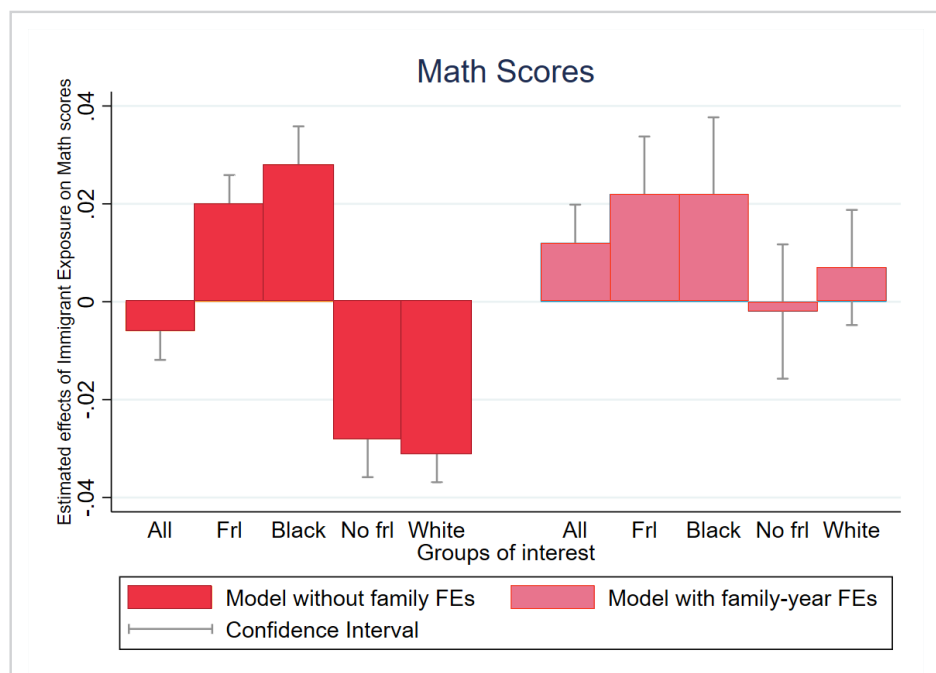
Our analysis further suggests that the presence of immigrants does not proxy for the demographic and SES composition of school cohorts, and cannot be explained by different levels of school resources, diversity of the school body, or class segregation. Instead, our results may be attributed to immigrants consistently outperforming their U.S. native schoolmates or intangible attributes such as hard work, patience, and resilience.

Exposure to immigrants is associated with higher academic performance among low SES natives

We find that immigrants do not always perform above their US-born peers. Immigrants going to school with Black or low-SES peers – those benefiting the most from the presence of immigrants – have, on average, better performance and fewer disciplinary incidents than their U.S. native classmates. However, immigrants going to school with U.S.-born White and affluent students, who are unaffected by them, have lower performance and more disciplinary incidents.

Figure 1: Immigrant exposure and native academic performance

Notes: The figure shows the estimated impact of cumulative exposure to immigrants in the classroom (i.e., migrant-years) on K-12 Math test scores among native students in Florida, 2002-2012. Each bar corresponds to the effect in a different specification with a subsample of students. “All” stands for all students, “Frl” for free lunch, “No frl” for no free lunch, “Black” for African-American and “White” for white ethnicity. The grey lines represent 95% confidence intervals around the estimates.



In our earlier work (Figlio et al., 2019), we study the relevance of one specific cultural value – namely, long-term orientation, the ability to delay gratification and exert self-control – and its impact on educational outcomes. Figure 2 portrays the raw correlations between long-term orientation and educational achievement in Florida. Our findings underscore that immigrant students hailing from countries emphasizing long-term orientation tend to outperform those from regions where delayed gratification is not culturally prominent. Not only do differences in levels emerge, but also an improvement over time of standardized test scores in mathematics and reading for students coming from long-term oriented cultures. These students also exhibit fewer absences and disciplinary

incidents, lower grade repetition, higher likelihood of graduating within four years, and an increased propensity to partake in advanced-level courses during high school.

Immigrants from countries emphasizing deferred gratification and self-control tend to have higher academic achievement and better performance over time

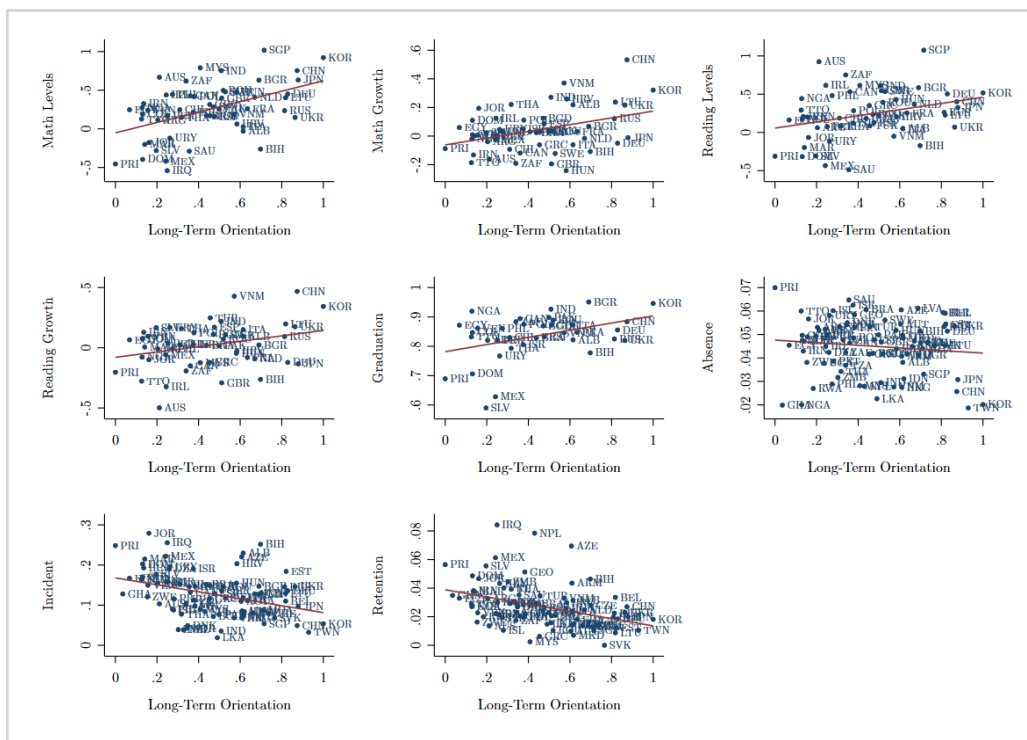


Figure 2: Academic performance and long-term orientation for immigrant students

Notes: The figure displays the correlation between long-term orientation and different dimensions of educational achievement and behavior among immigrant students in Florida, 2002-2012. See Figlio et al. (2019) for further details on the measurement of long-term orientation.

For comparison, Figure 3 illustrates the mean test scores in mathematics and reading according to grade level. It categorizes White U.S.-born students and first-generation immigrants into quartiles based on their long-term orientation. Notably, the performance trajectory of all students, including U.S. natives, is aligned with long-term orientation quartiles – the U.S. long-term orientation measure, standing at 0.26, aligns closely with the immigrants’ bottom quartile. Furthermore, while the performance of immigrants continues to increase as they progress in school, the performance of U.S. native students remains relatively stagnant across their schooling trajectory.

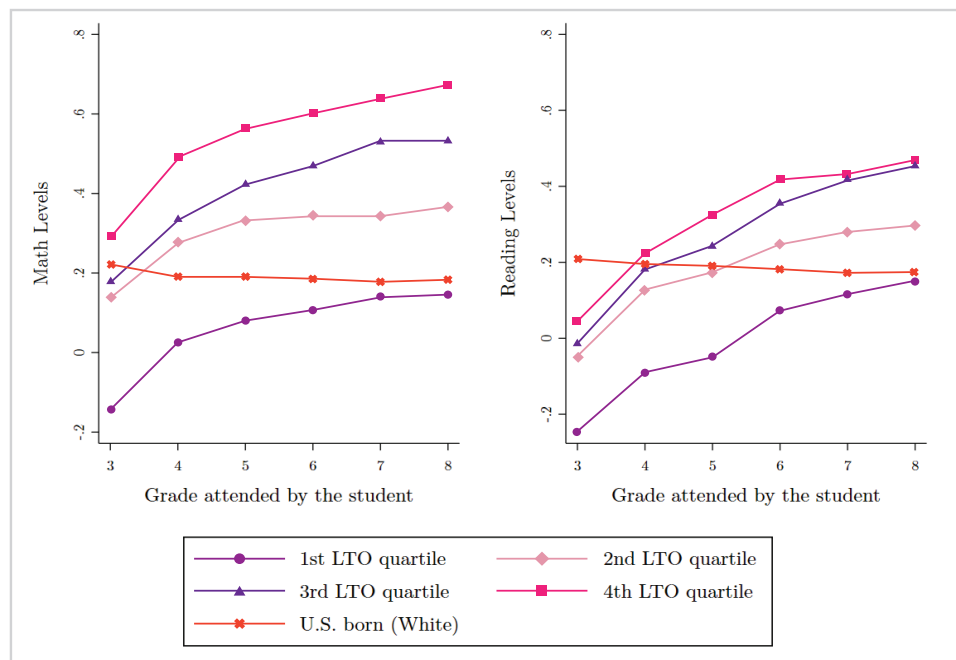
This evidence strongly hints that the influence of immigrants on U.S. native students might stem from cultural values that emphasize deferred gratification and self-control. Our findings align with the fact that the positive impact of immigrants on native-born students predominantly arises from immigrants exhibiting high levels of long-term orientation, indicating a

propensity to sacrifice the present for the future. Overall, our evidence underscores that U.S.-born students gain from interacting with immigrants who display better conduct and superior performance. Additionally, the positive influence extends to immigrants originating from cultures emphasizing patience – a signal that the transfer of cultural attributes among peers potentially plays a pivotal role in shaping academic outcomes.

The transfer of cultural attributes among peers (e.g., patience) potentially plays a pivotal role in shaping academic outcomes

Figure 3: Trajectories in academic performance and long-term orientation

Notes: The figure displays the evolution of tests scores between 3rd and 8th grade for students in different quartiles of long-term orientation scale (LTO) and U.S. native (White) students overall.



Schools act as robust platforms for social learning, wherein students mold their identities, convictions, and inclinations. Our study uncovers novel avenues for further exploration. How do preferences evolve with assimilation and exposure to diverse peers?

How do schools and educators shape preferences and beliefs, and how do institutional factors and policies interact with cultural upbringing? Future research holds promise for shedding light on these intriguing inquiries.

Based on

Figlio, D., Giuliano, P, Marchingiglio, R., Özek, U. and Sapienza, P. Diversity in Schools: Immigrants and the Educational Performance of U.S. born students. *Review of Economic Studies*, forthcoming.

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