



An empirical examination of data has found that immigrant students in Singapore fare better than native students. In a way, this is reassuring because it suggests that immigrants do not dilute the quality of the peer group which native children are exposed to. Consequently, exposure to immigrant peers is unlikely to hurt native children. ST FILE PHOTO

Ask: NUS

Immigrants outdo native students in studies

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For The Straits Times

Q When it comes to academic achievement in Singapore, do immigrant or native children perform better?

A Ask different people this question, and you are likely to get different responses. Some may reason that native students should have an edge because language barriers may pose problems for immigrant students' understanding of the subject matter and expression of their thoughts.

Others, however, may reason that immigrant students should do better since they tend to come from more privileged socio-economic backgrounds, owing to Singapore's selective immigration policy. Consequently, their parents are able to provide them with more educational resources, aiding performance. Immigrants also potentially possess more positive attitudes towards education. Indeed, a reason often cited for the

academic success of immigrant students in countries such as the United States, Australia and New Zealand is the desire of immigrant families to "make it" in their host countries.

So who is correct? Both points of view are actually valid. Consequently, the only way to answer this question is through an empirical examination of data.

Why should we be concerned about the academic performance of immigrant students? Because this has implications for public policy. If immigrant children are found to lag behind natives, then this would suggest the need for programmes to support them. Also, it potentially provides some information about peer effects: There is cause for concern if immigrants perform poorly because that might have undesirable consequences for the learning experiences of their peers.

To this end, I analysed data from the 2012 Programme for International Student Assessment (Pisa). This is a large-scale international survey that Singapore schools are part of. It provides information on the mathematics, science and reading achievements of 15-year-old students – as measured by their skills and competencies in solving real-world

problems. Information on each student's nativity status (whether born in Singapore or abroad) and family background characteristics is also provided. Students in the sample, numbering 5,546, are nationally representative.

The data shows that students with an immigrant background make up a sizeable proportion of secondary school students in Singapore, with about 15 per cent born abroad. Even among those born in Singapore, a large percentage (28 per cent) have at least one parent who was born abroad. For the purposes of the analysis, however, I will define native students to be those born in Singapore, regardless of their parents' countries of birth. Immigrant students are those born abroad.

Several differences are found between immigrant and native students. In particular, immigrant students are more likely to have fathers and mothers with tertiary education. They are also less likely to speak English at home, less likely to live with both parents, and less likely to have mothers who work full time. The differences in terms of parental education and home language are especially striking: While 61 per cent of immigrant students have fathers with tertiary

education and 52 per cent have mothers with tertiary education, the corresponding values are only 38 per cent and 30 per cent for native students. Also, while 49 per cent of native students speak English as a home language, only 27 per cent of immigrant students do so.

A comparison of test scores shows that immigrant students fare better in all three subjects. On average, comparing students of the same grade level, immigrant students outperform native students by 0.40, 0.35 and 0.31 standardised point respectively in maths, science and reading (test scores are standardised by subtracting the average test score of the student's cohort from each student's test score before dividing this by the standard deviation of the test score distribution). These achievement gaps are sizeable, practically speaking, and highly significant statistically.

Don't be fooled by the seemingly small magnitude of the test score differences. To put the numbers in perspective, consider that the difference in scores between the median performer in Singapore and the performer at the 85th percentile is about one standardised point. So a difference in standardised points of between

0.31 and 0.40 is huge. A difference in test scores of between 0.30 and 0.40 standardised point is comparable to a person having approximately one additional year of schooling.

I next investigate whether immigrants would have performed even better relative to natives had they possessed the same home language. Accounting for differences in home language, the achievement gaps between immigrants and natives increase to 0.43, 0.41 and 0.35 standardised point respectively for maths, science and reading, affirming the idea that immigrant students would have performed even better if not for their English language deficiencies.

What could explain the superior performance of immigrant students? To investigate this, I control for differences in students' socio-economic characteristics, as measured by parents' education levels, employment status and material possessions as well as students' age, gender and family structure. I find that the achievement gaps between immigrants and natives shrink dramatically, by more than half. Specifically, after adjusting for differences in these characteristics, immigrant students now outperform natives by only 0.17 and 0.12 standardised point in maths and science; in fact, when it comes to reading, there is no longer evidence that immigrants and natives perform any differently.

This confirms that a major reason for the superior performance of immigrant students is their better socio-economic backgrounds. It is unclear what accounts for the remaining immigrant-native differential in maths and science, although possible reasons include the better learning attitudes of immigrant students, their more effective learning methods, or other differences in socio-economic characteristics between immigrant and native students which the data does not capture.

The fact that immigrant students in Singapore fare better than native students is, in some sense, reassuring because it suggests that immigrants do not dilute the quality of the peer group which native children are exposed to. Consequently, exposure to immigrant peers is unlikely to hurt native children. If anything, it might actually enhance their achievement. More importantly, the results indicate that immigrant children in Singapore are doing well academically. Consequently, there seems to be little urgency, at least for now, to have some form of equalisation programme to further support the academic performance of immigrant students.

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