

ARE ALL STUDENTS READY FOR BOARDING?

Disadvantaged students who attended France's first "boarding school of excellence" had large improvements in math scores after two years. Students initially experienced reductions in well-being, but adjusted to their new environment by the second year.

Featuring an evaluation by Luc Behaghel, Clément de Chaisemartin, and Marc Gurgand



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Many high-income countries such as the United States and France have robust public school systems, yet academic success is often out of reach for students from disadvantaged backgrounds. These students may lack access to good public schools with sufficient resources, quality teachers, and a strong academic environment. In addition to the quality of the schools themselves, children's home environment may also be a key factor impacting academic success. If disadvantaged children face negative influences from peers and poor study conditions at home, their academic potential could be impaired.

One possible way to improve learning for underserved students is to enroll them in high-quality boarding schools. These schools provide a more structured, supervised, and academically focused environment than these children would have at home. However, boarding schools are likely to be considerably more expensive than public schools and there is limited evidence of their impact on educational outcomes.¹

J-PAL affiliates Luc Behaghel (Paris School of Economics), Clément de Chaisemartin (University of California, Santa Barbara), and Marc Gurgand (Paris School of Economics) conducted a randomized evaluation of the French government's first *internat d'excellence*—or boarding school of excellence—to test its impact on disadvantaged students' well-being and academic performance.

KEY RESULTS:

Boarding school students experienced a more intensive academic environment than non-boarders did. Boarders reported fewer classroom disruptions, greater teacher engagement, and more time spent doing homework than non-boarders.

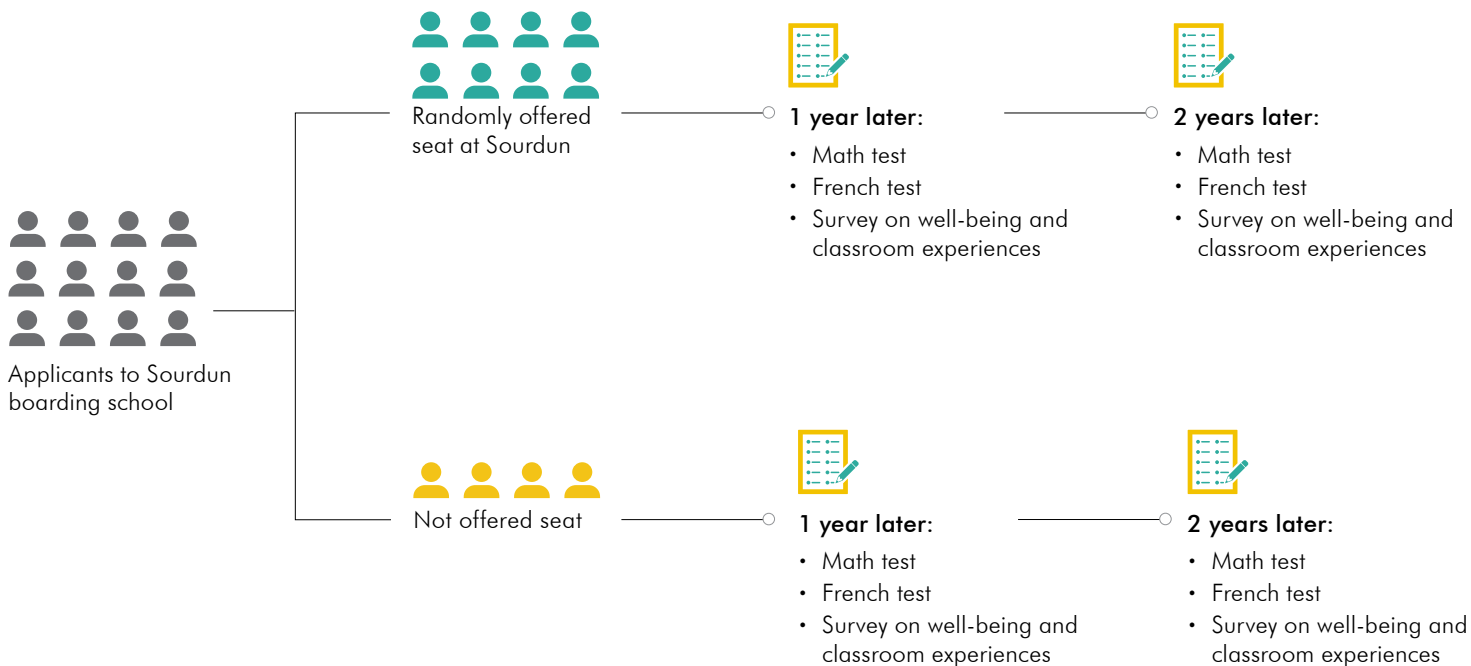
After two years, boarding school improved students' math skills, but only for initially high-performing students. Among the top third of students attending boarding school, math scores increased by 0.72 standard deviations. However, there was no improvement in math scores for students in the bottom two-thirds of the class.

However, boarding school had no impact on students' French skills.

Although attending boarding school initially decreased students' well-being, they adjusted after two years. After one year, boarders' well-being was 0.30 standard deviations lower than students' well-being in the comparison group. After two years, boarders' well-being improved and was equal to that of non-boarders.

EVALUATION

FIGURE 1. EVALUATION DESIGN



In 2009, the French government began operating its first boarding school of excellence—Internat d’Excellence de Sourdun—in Sourdun, a rural area south of Paris. This school is the largest of the 45 *internats d’excellence* in France as of 2017. To recruit applicants, the French Ministry of National Education asked public school principals to identify motivated students who lacked supportive home environments and encourage them to apply to the boarding school. A committee reviewed applicants’ eligibility based on the program’s focus on underserved and relatively high achieving students.

Students who applied to the Sourdun boarding school (grades 6-12) had average performance when compared to all French students their age, but were generally in the top 20-30 percent of the class at their current schools. Only 24.5 percent of applicants had a parent who completed high school. Sixty percent of applicants spoke a language in addition to French at home, suggesting that many of them came from families that recently immigrated to France. Because more students applied to the Sourdun school than the school could accommodate, eligible students were randomly offered a seat. From 2009 to 2010, 244 applicants received an offer to attend boarding school while 137 applicants did not receive an offer and served as the comparison group.

Researchers administered two online tests to Sourdun students and non-boarding school students to evaluate the impact of the boarding school on students’ math scores, French scores, and well-being. Students’ well-being was measured using questions from the Program for International Student Assessment (PISA) and focused on students’ experiences, including levels of disruption in the classroom, relationships between students, and student-teacher relationships. The French Ministry of National Education created the math and language exams.

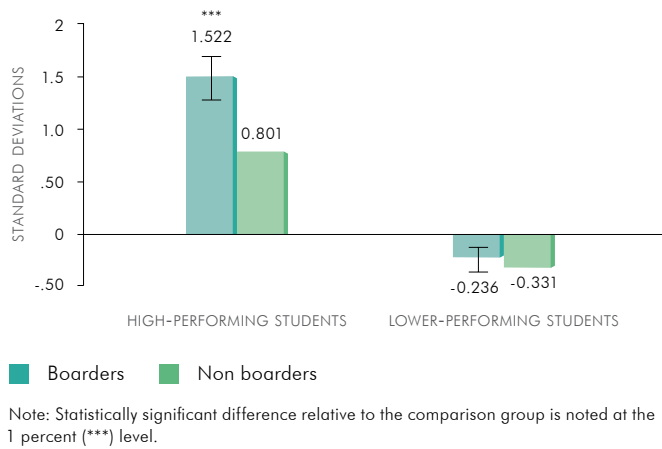
SAMPLE SCHOOL WELL-BEING QUESTIONS

- In school, I feel like a stranger
- I have few friends
- I feel at home
- I feel uncomfortable
- Other students like me
- I feel lonely
- I do not want to go
- I am often bored

¹ Curto, Vilsa, and Roland Fryer, Jr. 2014. "The Potential of Urban Boarding Schools for the Poor: Evidence from SEED." *Journal of Labor Economics* 32 (1): 65-93. <https://doi.org/10.1086/671798>.

RESULTS

FIGURE 2. IMPACT OF BOARDING SCHOOL ON MATH SCORES AFTER TWO YEARS

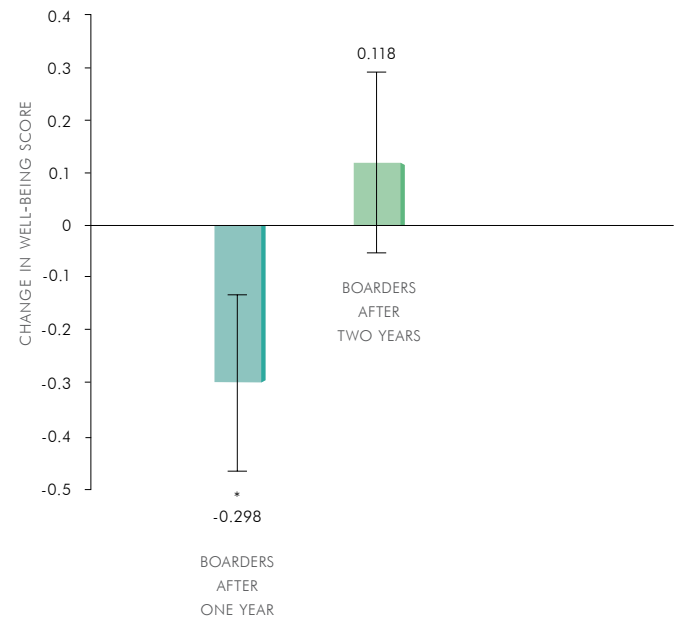


Boarding school students experienced a more intensive academic environment than non-boarders. Boarders reported fewer classroom disruptions, greater teacher engagement, and more time spent doing homework. They were also less likely to report that classroom disruptions prevented them from working well in school. Additionally, boarding school students faced harsher grading and stricter disciplinary rules.

Attending boarding school initially decreased students' well-being; however, students adjusted after two years. After one year, boarders' well-being was 0.30 standard deviations lower than in the comparison group. The more demanding academic environment and separation from friends and family may have contributed to their reduced well-being. However, two years after starting boarding school, students adjusted to their new environment: boarders' well-being significantly improved from the previous year and was equal to that of the comparison group.

After two years, boarding school improved students' math skills, but only for initially high-performing students. Math scores did not improve for boarders after the first year of school. Among the top third of students admitted to the boarding school, math scores increased by an average of 0.72 standard deviations in the second year. However, there was no improvement in math scores for students in the bottom two-thirds of the class. Researchers speculate that students' reduced well-being in the first year impeded learning. Therefore, improvements may have been delayed until students adjusted to their new environment, but only for the highest performing students.

FIGURE 3. IMPACT OF BOARDING SCHOOL ON STUDENTS' WELL-BEING



Note: Statistically significant difference relative to the comparison group is noted at the 10 percent (*) level.

However, boarding school had no impact on students' French skills. This finding is similar to other education interventions aimed at secondary school students, in which there is a large impact on math scores but a small or insignificant impact on language skills.^{2,3,4} One possible explanation for these results is that language ability might be set during childhood while math skills continue to evolve through adolescence. Language is also used more outside the classroom than math, making math skills potentially more dependent on teaching quality.

While expensive, the Sourdun boarding school costs as much as cutting class size in half. The cost per student in the boarding school is about twice as large as the comparison group. Boarding school costs €21,600 per year (US\$27,871 at the time of the evaluation) versus €10,700 for non-boarding school (US\$13,807), with the price difference mostly due to the boarding component of the program. The cost of this program is approximately the same as that of dividing class size by two in France.

² Abdulkadiroglu, Atila, Joshua D. Angrist, Susan M. Dynarski, Thomas J. Kane, and Parag A. Pathak. 2011. "Accountability and Flexibility in Public Schools: Evidence from Boston's Charters and Pilots." *Quarterly Journal of Economics* 126 (2): 699-748.

³ Angrist, Joshua D., Susan M. Dynarski, Thomas J. Kane, Parag A. Pathak, and Christopher R. Walters. 2010. "Inputs and Impacts in Charter Schools: KIPP Lynn." *American Economic Review* 100 (2): 239-43. <http://doi.org/10.1257/aer.100.2.239>.

⁴ Dobbie, Will, and Roland G. Fryer, Jr. 2011. "Are High-Quality Schools Enough to Increase Achievement among the Poor? Evidence from the Harlem Children's Zone." *American Economic Journal: Applied Economics* 3 (3): 158-87. <http://doi.org/10.1257/app.3.3.158>.

POLICY LESSONS



PHOTO: SHUTTERSTOCK.COM

While expensive, boarding schools may be an effective way to improve educational outcomes for students from disadvantaged backgrounds.

After two years, students at the boarding school saw large improvements in math scores compared to non-boarders.

However, boarders may require time to adjust to the more intense environment before their learning improves. While students eventually adjusted to the boarding school environment, boarders first experienced a noticeable decline in well-being. This shock may have reduced learning during students' first year, consistent with other research finding a positive link between students' well-being and learning outcomes.

There are still unanswered questions of how to improve educational outcomes for large numbers of lower-performing students. Providing access to boarding schools is a costly policy that has been targeted to a small number of disadvantaged but average-performing students.

ONGOING RESEARCH: Researchers are continuing to monitor students from both the Sourdun boarding school and the comparison group as they age. Currently, researchers are analyzing administrative data from the French Ministry of National Education to determine if attending boarding school affects the type of secondary school degree students receive (results forthcoming). They are also investigating if these impacts are different for boys and girls. Researchers will continue to follow study participants to see if boarding school has an impact on higher education and employment.

Featured Evaluation: Behaghel, Luc, Clément de Chaisemartin, and Marc Gurgand. 2017. "Ready for Boarding? The Effects of a Boarding School for Disadvantaged Students." *American Economic Journal: Applied Economics* 9 (1): 140–64. <http://doi.org/10.1257/app.20150090>.

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Suggested Citation: J-PAL Policy Briefcase. 2018. "Are All Students Ready for Boarding?" Cambridge, MA: Abdul Latif Jameel Poverty Action Lab.

This research was made possible by:

Partners: French Ministry of National Education

Funders: Fonds d'Expérimentation pour la Jeunesse (French Experimental Fund for Youth)

The Abdul Latif Jameel Poverty Action Lab (J-PAL) is a network of affiliated professors around the world who are united by their use of randomized evaluations to answer questions critical to poverty alleviation. J-PAL's mission is to reduce poverty by ensuring that policy is informed by scientific evidence.

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