

The effects of a boarding school for disadvantaged students on students' secondary and tertiary education.

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Background and research question

Low social mobility in France

- Kenedi and Sirugue (2022) : father-son wage rank-rank correlation = 0.34, very close to US, way above Scandinavia, Canada, Italy, or Australia.
- Bonneau and Grobon (2021) : very large socio-economic gradient in access to HE, comparable to US.
- Surprising : universities are entirely free in France, very expensive in the US.

Low perceived returns to work, and protest culture

- French people aware of low mobility.
- 2006 World Values Survey : French people do not believe that “hard work brings success” (country with 5th lowest score, gafter Poland, Rwanda, Russia, and Serbia).
- May in turn explain France’s famous protest culture : country where share of pop that already participated in a demonstration is the largest.
- In particular, violent riots where youth confronts police sporadically emerge in suburbs of large French cities, where youth unemployment high and economic opportunities low.

2005 riots : failure of French integration model ?

- In the wake of deaths of two young people trying to escape police, important riots in suburbs of large French cities in fall of 2005.
- Many rioters had immigrant background, with family origins in the Maghreb and Subsaharan Africa (Mucchielli & Le Goaziou 2013).
- Thus, events were perceived by French political class as failure of the French integration model.

Policy responses

- Conservative president Nicolas Sarkozy tasked Fadela Amara, Secretary of State for Urban Policies, with designing the “Espoir Banlieues” (Hope for the Suburbs) plan.
- Plan formally announced by president Sarkozy in a speech on February 8th 2008.
- With numerous references to immigration and diversity, speech = call to end the ethnic discriminations that are pervasive in French society, and improve the opportunities of “responsible” youth with immigrant background.
- One of the concrete announcements : creation of “Internats d'excellence” .

Internats d'excellence programme

- **Internats d'excellence** : boarding schools for middle and high school students.
- Importantly, schools cannot explicitly target students based on their ethnicity or their country of origin : such targeting would be illegal in France.
- Instead : “deserving” students from “quartiers politiques de la ville” (priority neighborhoods).
- **Better studying conditions** and substitute school to home environment.
- Intensive compensatory intervention : add. cost/student=10k euros/year.

Long-term effects of Sourdun, programme flagship

- Behaghel et al. (2017) : Sourdun, program flagship, increases boarders' maths test scores two years after admission.
- Relatively modest effect in view of program cost : 0.28σ /year.
- **Does Sourdun have long-term effects on students' secondary and tertiary education ? If so, for which students ?**

Context, Design, Population, and Data

Relatively good students, from modest and diverse families

- Applicants' academic ability :
 - good students relative to their classmates.
 - median students relative to French distribution.
- From modest families :
 - almost 50% have parents unemployed, blue collar, or employee
 - More than 40% benefit from means tested grant
 - Parents twice more unemployed as that of their classmates.
- French only language spoken at home for only 40% of them.
Thereafter : proxy for “minority/majority” students.

A former military building, in the middle of the fields...



Smaller classes, better classroom environment...

- Class size : 20 students versus 26 for controls.
- Teachers more qualified but less experienced.
- Less classroom disruption : on a measure of classroom disruption self-reported by students (e.g. : there is noise and disruption in my classroom), $T-C=-0.7$ sd.
- Teachers more involved : on a measure of teachers' involvement reported by students (e.g. : my teachers care for their students), $T-C=+1.3$ sd.
- Etc.

The lottery, and estimation strategy

- Lotteries conducted for 2009 and 2010 admission to Sourdun.
- Waitlist randomization. Students ordered randomly, available seats offered to first students, some students decline (never takers), seats offered to next student etc.
- Population : 395 students who participated in lottery. 258 received offer : treatment group. 137 did not : control group.
- In Behaghel et al. (2017), we show that groups balanced on a number of dimensions.
- ITT effects shown thereafter : estimation follows Chaisemartin & Behaghel (2020).
- **First-stage** : = 2.07 (s.e.= 0.163) : **students receiving an offer spend 2.07 more years in Sourdun.**

Data : HS, Bac and HE outcomes

- We use 2008 to 2017 SYSCA data sets, that contain all secondary school students in France and their outcomes.
 - 2008 applicants applied to enter in grade 8, 9, and 10 in 2009
⇒ expected to pass the Bac in 2013 or before.
 - 2009 applicants applied to enter in grade 6 through 11 in 2010
⇒ expected to pass the Bac in 2016 or before.
- We use 2012 to 2018 HE (SIES) data sets, that contain enrollment into, and graduation from, (almost) all HE institutions in France.
- **Using all these data, we can construct main outcome : highest degree obtained, in high school (HS) or higher education (HE).**

Effects on highest degree obtained

Sourdun ↘ HS dropout rate, ↗ HE graduation rate

Table – Effect of the boarding school on last degree

	Control	T-C	SE	N
HS or HE ?				
HS dropout	0.270	-0.142	0.049	395
Tech or voc HS degree	0.207	-0.079	0.044	395
Non-voc HS degree	0.257	0.063	0.055	395
Higher Edu (HE) degree	0.267	0.158	0.056	395
HE degrees				
Tech or voc HE	0.045	-0.027	0.022	395
Non-selective Univ, STEMEL	0.104	0.125	0.040	395
Non-selective Univ, other field	0.060	0.038	0.028	395
Selective Grande Ecole	0.030	0.030	0.027	395
Non-selective Grande Ecole	0.005	0.012	0.011	395
Other HE degree	0.024	-0.018	0.019	395
Predicted wage	1682.747	134.981	58.686	395

Larger Effects for Minority Students

Panel A : only French spoken at home

	Control	T-C	SE	N
HE degree	0.259	0.117	0.082	160
Tech or voc HE	0.000	0.031	0.018	160
Non-selective univ, STEMEL	0.069	0.134	0.056	160
Non-selective univ, other field	0.106	-0.024	0.050	160
Selective Grande Ecole	0.084	-0.043	0.050	160
Predicted wage	1698.348	63.039	92.039	160

Panel B : Language other than French spoken at home

	Control	T-C	SE	N
HE degree	0.282	0.184	0.082	193
Tech or voc HE	0.062	-0.049	0.032	193
Non-selective univ, STEMEL	0.135	0.113	0.068	193
Non-selective univ, other field	0.032	0.072	0.039	193
Selective Grande Ecole	0.000	0.077	0.027	193
Predicted wage	1693.139	177.668	75.155	193

Comparing majority and minority students

Minority students come from poorer families.

Table – Socio-demographic characteristics

	Majority	Minority - Majority	SE	N
Boy	0.448	-0.068	0.063	353
Parent Blue Collar	0.323	0.222	0.063	351
Means-tested grant	0.378	0.156	0.063	351
# of children in family	2.523	0.682	0.205	351
Parents divorced	0.364	-0.105	0.062	351
Single parent	0.394	-0.057	0.060	352
Parent completed \geq HS	0.497	-0.194	0.066	326

Minority students are higher ability

Table – Academic outcomes

	Majority	Minority - Majority	SE	N
Grade in French (baseline)	0.083	0.047	0.135	351
Grade in Maths (baseline)	-0.142	0.324	0.128	351
Peers' grade in French (baseline)	0.322	-0.362	0.167	336
Peers' grade in Maths (baseline)	0.202	-0.296	0.132	336

Minority students are less disruptive and have less friends

Table – Non-cognitive outcomes

	Majority	Minority - Majority	SE	N
Behavior score (baseline)	-0.076	0.216	0.128	308
Academic self-esteem (control)	0.117	-0.091	0.207	114
Social self-esteem (control)	0.375	-0.523	0.267	114
General self-esteem (control)	0.022	-0.035	0.224	114

Parents of minority have more ambition for them

Table – Motivation for schooling and ambition

	Majority	Minority - Majority	SE	N
Motivation for schooling	-0.295	0.161	0.246	111
HE confidence	0.242	-0.357	0.284	110
HE Knowledge	0.128	-0.066	0.178	110
Parent HE Ambition	-0.348	0.526	0.257	96

In the control group, much better HS outcomes for minorities, not much better HE outcomes.

	Majority	Minority-Majority
<i>HS outcomes in control group</i>		
No HS degree	0.310	-0.124
Non voc HS degree	0.417	0.143
Non voc HS degree, sciences track	0.161	0.190
<i>HE outcomes in control group</i>		
Not Enrolled in HE	0.486	-0.074
Enrolled at University	0.320	-0.016
Enrolled in associate degree	0.101	0.166
Enrolled in prepa	0.035	-0.018

Heterogeneous effects along the causal chain

Improvement in studying conditions larger for minority

Table – Effect of boarding school on studying conditions

Panel A : Language other than French spoken at home				
	Control	T-C	SE	N
Disruption score	0.143	-0.597	0.203	186
Student relation	-0.076	0.619	0.184	149
Teacher involvement	-0.145	1.044	0.191	186
Relation with teacher	-0.083	0.770	0.151	179
Relation with sup	-0.168	-0.188	0.177	149

Panel B : French spoken at home				
	Control	T-C	SE	N
Disruption score	0.095	-0.553	0.244	142
Student relation	0.015	0.379	0.186	109
Teacher involvement	0.023	0.361	0.175	143
Relation with teacher	-0.094	0.416	0.212	136
Relation with sup	-0.240	-0.241	0.214	110

Improvement in hwk time and test scores \geq for minority

Table – Effect of boarding school on academic outcomes

Panel A : Language other than French spoken at home				
	Control	T-C	SE	N
Homework hours	4.647	2.424	0.768	182
Math score (after 2 years)	0.197	0.410	0.157	186

Panel B : French spoken at home				
	Control	T-C	SE	N
Homework hours	5.190	0.259	0.659	140
Math score (after 2 years)	-0.040	0.005	0.151	145

More positive non-cognitive effects on minority students

Table – Effect of boarding school on non-cognitive outcomes

Panel A : Language other than French spoken at home				
	Control	T-C	SE	N
Academic self esteem	-0.159	0.441	0.157	185
Social self esteem	-0.394	0.468	0.212	184
General self esteem	-0.211	0.430	0.207	184
Extrinsic motivation	-0.037	-0.072	0.185	186
Intrinsic motivation	-0.134	0.505	0.182	186
Amotivation	0.328	-0.654	0.236	186

Panel B : French spoken at home				
	Control	T-C	SE	N
Academic self esteem	-0.079	-0.134	0.232	145
Social self esteem	0.232	-0.371	0.219	145
General self esteem	-0.141	-0.123	0.272	145
Extrinsic motivation	-0.096	0.155	0.213	144
Intrinsic motivation	-0.295	0.484	0.203	144
Amotivation	-0.010	0.212	0.194	144

Conclusion

Boarding to better opportunities ?

- Results promising : intervention seems to have transformative effects on beneficiaries' trajectories.
- Predicted wage return : 8% on average, 10.5% for minority students : TBC with actual wage data.
- Long-run effects much larger than what we could have predicted based on short-term effects (surrogate prediction exercise).
- Not an early childhood intervention : later interventions can be transformative, too.
- One of the (the ?) first intervention rigorously shown to massively reduce inequalities of opportunities in France.
- Effects concentrated among minority students, the population targeted by policy makers.

Thank you !