

Adjusting your dreams? The effects of school and peers on dropout behavior

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The intervention

- Paris area, 37 schools, 4,300 9th grade students, 181 classes.
- 9th grade is the end of middle school: complex and diversified supply of tracks starting at 10th grade (high school).
- Students apply for their preferred tracks. Admission based on academic record.
- Overall early dropout rate about 10%.
- Intervention: principals identify 9th graders at risk of dropping out and help them (and their parents) to define goals that fit with both their aspirations and their academic ability.
- Intervention randomized at the class-level, within school.
- Administrative follow-up data on applications and assignment. Detailed survey information on friendship networks within class

Results

1. Intervention reduces early dropout rate and grade repetition by about 1/3. It increases entry into vocational tracks.
2. Effects persist two years after treatment. Intervention does not just delay repetition or dropout behavior.
3. Effects driven by more involved parents and more realistic aspirations.
4. Spillover effects on non-treated students are negligible, except on the fraction of students with both selected friends and relatively poor academic record (compared to other non-selected).

Lessons

- High-school dropout reduction does not necessarily involve very early interventions, nor improvement in academic ability, nor financial help to at-risk students.
- Dropout can be reduced through relatively late (end of middle school) and low cost school-based intervention.
- Dropout can be reduced by helping low achieving middle-school students and their families defining high-school plans,
 - without over-estimating their capacity to achieve an academic track
 - without under-estimating the value of « outside the box » vocational tracks.

2. Context : *Académie de Versailles*

- 2010-2011, largest French district (1,1 million of pupils), western suburbs of Paris.
- The head of the district decided to design a programme targeted at 9th grade pupils at-risk of dropping out.
- 37 middle schools ; about 9% of the 400 middle schools of the district. Deprived schools overrepresented.
- About 4,300 ninth graders in 179 classes (9th grade=last year of middle school)

2. Context : options after middle-school

- At the end of middle school (9th grade), 6 possible track choices :

Within National Education :

- 1) Grade repetition (middle school),
- 2) High school, 3-year academic programme,
- 3) High school, 3-year vocational programme,
- 4) High school, 2-year vocational programme,

Outside National Education :

- 5) Apprenticeship (either 2-year or 3-year vocational programme),
- 6) Dropout.

- Vocational system is complex :
 - In Versailles, 64 possible 3-year school programmes
 - 46 possible 2-year school programmes
 - About 300 apprenticeship training centers.

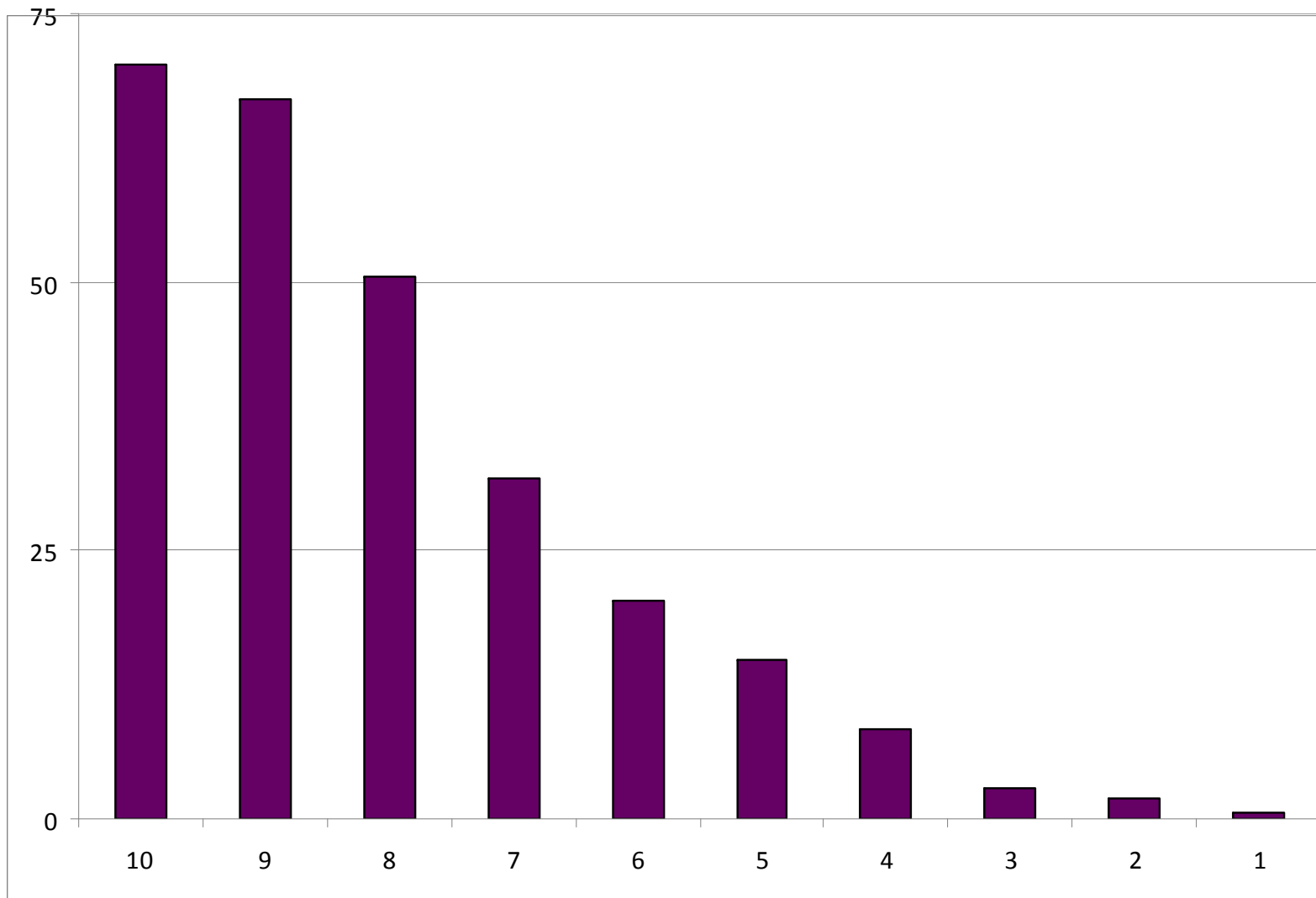
2. Context: assignment procedure

- Schools decide who can be admitted to 3-year academic track (based on performance).
- **If not admitted**, students can:
 - Ask to repeat 9th grade (every student is entitled to this right).
 - Apply for a 2-year or 3-year vocational high school (mid June).
- **If vocational application** : students are asked to list up to 4 choices by descending order of preference.
- **Centralized Assignment System** (called *Affelnet*) assigns as much students as possible to one of their choices.
 - 1st round : early July (about 85% studs assigned to one of their choices)
 - 2nd round (more informal): mid July-Early September.

3. Program and design : targeted students*

- First term of AY 2010-2011: within each school and each 9th grade class, the principal identifies pupils at risk of dropping out.
- Early december 2010: the list is closed; about 1 130 students are selected (25% of total). On average, we have about 6 selected pupils per class.
- By construction, selected pupils are very different from non-selected:
 - their average mark at the end of the first term is two SD smaller
 - 54% have already been held back a grade (vs only 25% of other pupils).
 - 33% from low income (bottom quartile) families (vs 22%)

3. Proportion of selected students by decile ranks (pre-treatment average mark).



3. Program and design : randomization

- Randomization : **within each school**, we draw at random a set of classes where selected pupils will be invited to the programme.
- 97 test classes vs. 82 control classes.
- Treatment and control samples are balanced.

	C	T-C	se	Obs.
Girls	44,1	-0,7	2,5	1 131
Is repeating 9th grade	7,9	-0,9	1,7	1 101
Has repeated any grade	54,5	-0,5	2,4	1 131
Low income	32,2	0,9	2,6	1 131
Average marks (/20, first term)	9,4	-0,02	0,14	1 094
<i>Maths (/20)</i>	6,6	0,04	0,21	1 070
<i>French (/20)</i>	7,9	0,10	0,26	1 060

3. Program and design : the intervention*

- Two meetings between the principal and selected families. Meetings organised at school at 18.00, January-March 2011.
- Support provided by the district : 2 videos + methodological cards.
- Aims of the meetings (as stated in the guidelines):
 - Make parents understand that an important choice has to be made.
 - Encourage them to get involved, help them understand procedures.
 - Identify families' specific aspirations, evaluate whether they are realistic.
 - Provide information on alternative options.
 - Warn that repetition does not necessarily lead to grade improvement.
 - Illustrate that apprenticeship can be a solution, « outside the box ».
 - No information on labour market outcomes (explicitly ruled out).
- The programme entails some fixed costs at the district level (DVD conception and meetings' guidelines), but no significant variable costs at the school level.

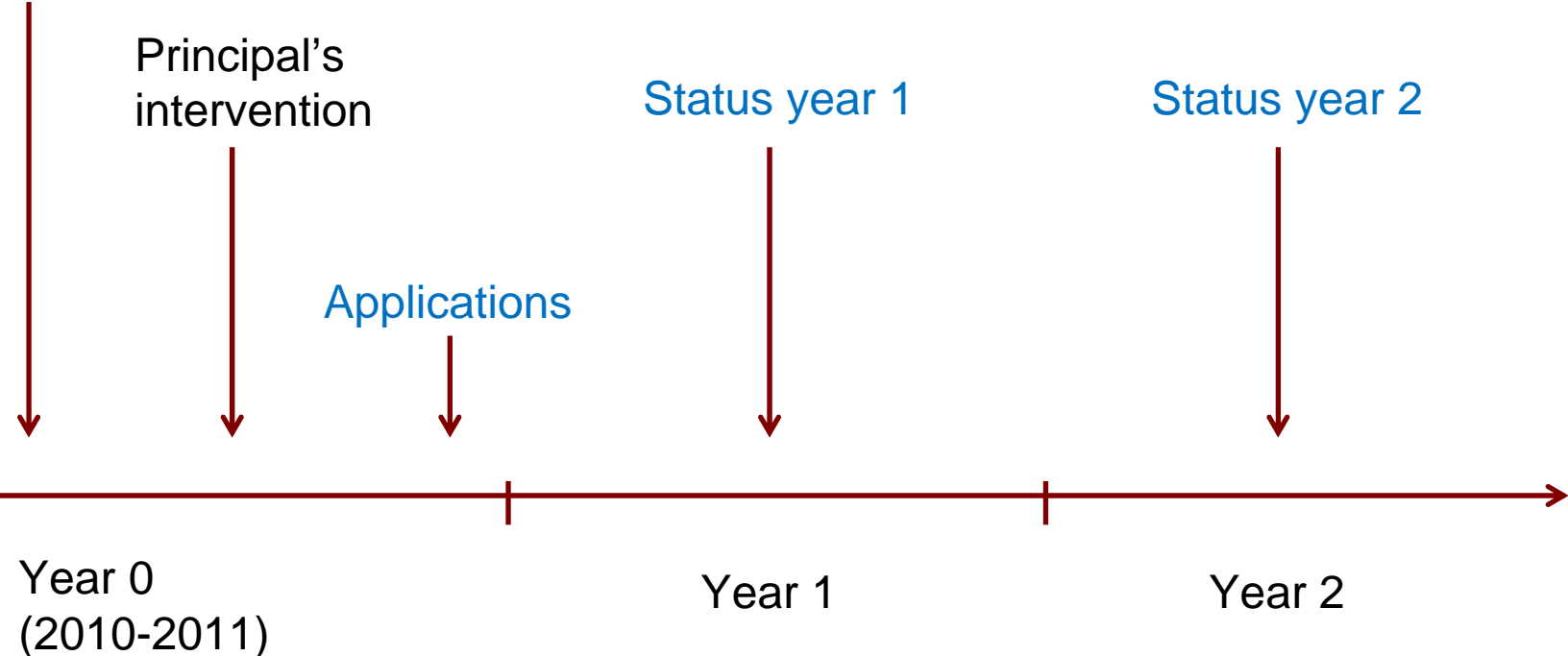
3. Program and design : take up*

	Selected students		Non selected students	
	Test	Control	Test	Control
... first meeting	45,5	2,5	1,3	0,1
... second meeting	27,7	0,4	1,3	0,0
... two meetings	21,0	0,4	0,7	0,0
... one or two meetings	52,2	2,5	1,9	0,1
Obs.	600	511	1 662	1 415

4. Data*

- Survey on parents' involvement and expectations at the end of treatment year (response rate = 80%; balanced)
- Administrative data on cognitive and non cognitive outcomes at the end of the treatment year.
- Administrative data on choices at end of treatment year.
- Administrative data on final assignment the year after the treatment year as well as on assignment two years after treatment.
- Survey on students' friendship network (response rate = 94%, balanced).

Selection of students +
Randomization



5. Impact on parents' involvement and expectations*

- Parents participate much more often in information meetings at school = direct effect of the intervention.
- Parents participate also more often in meetings organized by parents' organizations and interact more often with other parents.
- They are more often happy with school information
- Parents form expectations about children's ability to graduate from high-school that become less unrealistic.
- Dropout is not expected at all, neither in the control nor in the treatment group. Any effect on dropout rates is likely to reflect an effect on decisions that were not planned by families.

5. Effects on parents' involvement and expectations

	C	T-C	(se)
<i>Information from school :</i>			
General information meetings	16.0	+24.1***	3.0
Individual meetings with career counsellor	22.7	+1.5	2.7
Individual meetings with teachers	40.6	+2.3	3.7
<i>Interaction with other parents :</i>			
Has attended meetings of parents' organisation	9.0	+3.6*	2.1
Has talked with other parents	43.8	+9.3**	3.2
<i>Satisfaction :</i>			
Happy with school information	53.3	+5.7*	3.1
<i>Expected diploma :</i>			
Baccalauréat (3-year track)	77.4	-8.2**	2.6
Vocational certificate (2-year track)	10.3	+3.4*	2.0
No diploma	0.6	-0.6*	0.3
Do not know	11.6	+5.4**	2.2

5. Effects on parents' involvement and expectations*

- Parents become less sure that their child will be able to graduate from high-school.
- In control group : 77% expect that their child will have the *baccalauréat*.
- Given the (very low) academic level of their child, this does not seem realistic : the national graduation rate is about 67%.
- According to administrative panel data from Ly and Riegert (2011) :
 - *Baccalaureat* graduation if <10/20 in 9th grade = 8.2%
 - *Baccalaureat* graduation if 10-12/20 in 9th grade = 30.0%
- Principal's intervention makes parents less unrealistic.

5. Effects on students' behavior and marks*

- No significant effects on marks nor on absenteeism (or discipline)
- The treatment does not modify pupils' choice set by increasing the average mark that is used by the Central Assignment System.
- Do not succeed better at national 9th grade exam, but attend it more often (not compulsory) = **treated students are less absent on examination day.**
- Examination day = last day of school year. Most schools provide students with the official results of the assignment procedure just at the end of this day.
- Students who are absent = not interested by their own assignment.
- In the control group, absence on examination day is a very strong predictor of subsequent dropout behavior.

5. Effects on students' behavior and marks

	C	T-C	s.e.
• <i>Academic performance</i>			
Average marks, T3 (/20)	8.44	-0.00	0.11
Annual average marks (/200)	86.5	+0.7	0.9
• <i>End middle school examination</i>			
Not registered	4.2	-1.1	1.0
Fail	55.4	+1.3	2.3
<i>Fail. but present on exam day</i>	44.8	+6.7**	2.5
<i>Not present on exam day</i>	10.6	-5.4**	1.3
Pass	40.4	-0.2	2.3
<i>Honors</i>	1.9	+1.2	1.0

5. Effects on applications*

- Consistent with absence of impact on academic record: the treatment does not affect the proportion applying for 3-year academic program.
- Consistent with impact on parents' expectations, treatment increases the proportion including at least one 2-year vocational track in their list of applications (+ 4.9 points, from 15.8% to 20.7%).
- Symmetrical decline in the proportion who either apply for 3-year vocational program only or ask for grade repetition (or appeal).
- Principals convinced many at risk students to adjust their applications so as to include 2-year program in their list as a possible assignment.
- Interpretation: principals contribute to a better perception of shorter vocational tracks as well as to more realistic expectations about students' capacity to complete the longer, more selective programs.

5. Effects on applications

List of applications includes...	C	T - C	se
At least one 2-year vocational program	15.8	+4.9**	1.9
<i>2-year vocational is first choice</i>	11.0	+3.8**	1.7
<i>2-year vocational is not first choice</i>	4.8	+1.1	1.2
No 2-year vocational nor 3-year academic programs	61.2	-5.5**	2.7
<i>Only 3-year vocational programs</i>	50.6	-2.5	2.7
<i>Repetition</i>	10.4	-3.0*	1.6
3-year academic program	16.7	+0.1	1.8
Other cases (private. other districts)	6.5	+0.5	1.1

6. Effects on assignments

- Consistent with marks, no effect on admission into 3-year academic programs.
- No negative effect on entry into 3-year vocational track : the treatment did not induce students with relatively high aspirations and realistic expectations to scale down their ambitions.
- By contrast, treatment increases entry into 2-year vocational high-school programs

6. Effects on assignments

- The intervention also reduces very significantly early dropout rate (-40%, from 8.8 pts to 5.1 pts) and increases entry into apprenticeship by similar amount.
- Getting enrolled into an apprenticeship center = long and difficult process.
- Students have to get hired by a tutoring firm, find a seat in a relevant training center. Interviews with potential employers typically take place long before the end of the academic year, in March-May.
- Increased number of apprentices not likely to reflect decisions taken mid-July after first round of assignment procedure. Very likely to be the outcome of a decision taken much earlier in the year.

6. Effects on assignments

	C	Effet T - C	se
<i>Within national education</i>			
3-year academic	18.5	+0.0	1.8
3-year vocational	50.4	+0.8	2.9
Repetition	12.7	-3.5**	1.6
2-year vocational	3.8	+3.3**	1.1
<i>Outside national education</i>			
Apprenticeship	5.8	+3.1**	1.4
Dropout	8.8	-3.7**	1.1

6. Effects on assignments (cont')

	C	T - C	Se
• Within national education			
3-year academic	18,5	+0,0	1,8
3-year vocational	50,4	+0,8	2,9
<i>3-year vocational in the choice list</i>	48,3	+0,3	2,9
<i>3-year vocational not in the list</i>	2,1	+0,5	0,8
Repetition	12,7	-3,5**	1,6
<i>Repetition in the choice list</i>	6,5	-1,0	1,3
<i>Repetition not in the list</i>	6,2	-2,5**	1,0
2-year vocational	3,8	+3,3**	1,1
<i>2-year vocational in the choice list</i>	3,5	+2,1**	1,0
<i>2-year vocational not in the list</i>	0,4	+1,2**	0,5
• Outside national education			
Apprenticeship	5,8	+3,1**	1,4
Dropout	8,8	-3,7**	1,1

6. Interpretation : assignments

- Overall, empirical evidence is consistent with treatment having two effects, one affecting “would-be dropout” and one affecting “would-be pursuer” (i.e., students intending to pursue secondary education).
- Among the second group, it induced students with high but unrealistic expectations to scale down their ambitions.
 - As a result of more realistic goals, more of these students obtain one of their listed choices and less of them repeat.
- Second it convinced would-be dropout that apprenticeship is a better way to get a foothold in the workplace than direct entry into the LM.
- Overall, in this set-up, empirical results are suggestive that principals were successful in providing new goals to would-be dropouts as well as in scaling down ambitions of students who had unrealistic ones.
- Testable implications.

7. Longer-term effects : 2 years after treatment*

- A significant fraction of students are induced to get into vocational tracks rather than to repeat 9th grade or to dropout in year 1.
- **What are the consequence in year 2?** Were selected students induced to choose the right tracks or did the intervention only induce a delay in grade repetition and dropout decisions?
- **In fact, two years after treatment, differences between treated and control students tend to further increase rather than to diminish :**
 - Dropout gap = -5.1 pts in year 2 (versus -3.8 pts in year 1)
 - Grade advancement gap = -4.4 pts in year 2 (versus -4.1 pts in year 1)
- No evidence that principals contributed to distort students' perceptions in favour of tracks that did not correspond to their abilities/aspirations.

7. Longer-term effects : 2 years after treatment

	C	T - C	se
First year completed	52.7	+4.4*	2.6
<i>3-year general (2nd year)</i>	10.8	+1.0	1.6
<i>3-year vocational (2nd year)</i>	38.6	-0.0	2.7
<i>2-year vocational (2nd year)</i>	3.3	+3.4**	1.0
First year still not completed	20.0	-1.9	2.2
<i>3-year general (1st year)</i>	9.0	-1.0	1.5
<i>3-year vocational (1st year)</i>	9.2	-0.9	1.6
<i>2-year vocational (1st year)</i>	1.7	+0.0	0.7
Apprenticeship	7.3	+2.3*	1.4
Dropout	20.0	-5.1**	1.9
<i>Dropout in year 1</i>	7.5	-3.9**	1.0
<i>Repetition in year 1</i>	2.3	-1.5**	0.6
<i>Others</i>	10.2	+0.2	1.6

7. Longer-term effect : end of the last 9th grade

- We also looked at outcomes at the end of the last 9th grade : first 9th grade if did not repeat, but second 9th grade if repeated.
- No difference in marks: no evidence that those induced not to repeat would have benefited from an additional year in middle school. Many repetitions not useful and principals are able to detect/avoid them.

	Moyenne C	Effet T - C	se	Obs.
• End of last 9th grade :				
Average marks (/240)	87.7	+0.6	0.9	1102
Prop. whose average marks > 110	14.9	+0.9	2.0	1102
Proportion admitted in general track	22.7	-0.9	2.0	1109

7. Longer term effects on dropout : a summary

- Overall, intervention contributed to reducing dropout through two main channels.
- First, it helped a fraction of students initially willing to dropout to define new prospects.
- They turn out to be able to persist in education and to complete one additional year of education.
- Second it induced a fraction of students initially willing to repeat 9th grade to apply for and go into 2-year programs.
- Most of them turn out to be able to complete one additional year of schooling whereas they would have ended up dropping out from school had they not been treated.

8. Spillover effects on non selected students

1. Very small average effect of intervention on applications or status one year after treatment for non selected students.
2. The majority of non selected students (60%) have no selected friends. Also the majority is admitted into academic track: no room for peer group influence.
3. When we focus on the 20% with selected friends and relatively modest academic record: significant increase in entry into vocational schools (at the detriment of academic schools).
4. The rehabilitation of vocational tracks by principals induced a significant fraction of non-selected students to get into these specific tracks rather than to pursue into the general track.
5. However, this spillover effect tend to fade out in year 2 : those induced to get into vocational track in year 1 would have got into this track one year later, had they not been treated.

8. Spillover effects on non selected students: applications

	All		Some selected friends		Some selected friends and pre-treatment marks < 12	
	C	T-C	C	T-C	C	T-C
Appeal or repetition	3,1	+0,9 (0,7)	4,3	+0,2 (1,1)	9,2	-1.1 (2,3)
3-year general	73,2	-1,0 (1,4)	67,7	-3.6 (2,3)	37.8	-7.7 (3.6)**
3-year vocational	22,2	-0,0 (1,4)	28,4	+2,4 (2,3)	51,7	+8.7 (3.8)**
2-year vocational	6,2	-2,0 (0,9)**	6,2	+0,3 (1,3)	13,0	-2.2 (2.6)
Others	5,1	+0,1 (0,6)	3,4	+0,8 (0,8)	5,5	+0.7 (1.4)
Obs.	2 972		1 208		528	

8. Spillover effects on non selected students: status one year after the treatment

	All		Some selected friends		Some selected friends and pre-treatment marks ≤ 12	
	C	T-C	C	T-C	C	T-C
Repetition	2.7	+0,5 (0.6)	3.9	-0.5 (1.0)	8.8	-1.2 (2.3)
3-year academic track	73.6	-2.0 (1.4)	67.9	-4.1 (2.3)*	39.1	-7.4 (3.4)**
Vocational tracks	19.5	+1.6 (1.5)	24.1	+3.8 (2.2)	45.4	+9.2 (3.9)**
<i>3-year vocational</i>	16.1	+1.3 (1.4)	20.7	+3.1 (2.2)	39.5	+6.1 (4.3)
<i>2-year vocational</i>	2.0	-1.0 (0.5)**	1.9	-0.2 (0.7)	3.8	-0.3 (1.5)
<i>Apprenticeship</i>	1.4	+0.5 (0.4)	1.5	+0.9 (0.8)	2.1	+2.1 (1.5)
Dropouts	4.2	+0.8 (0.7)	4.1	+0.7 (1.1)	6.7	-0.1 (1.9)
Obs.	2 972		1 208		529	

9. Concluding remarks

- School principals are able to help students at risk of dropping out to form more realistic expectations and aspirations.
- It induces about 30% of would-be dropouts to stay longer in education and successfully complete additional years of education/training.
- In a partial population design, spillovers may be difficult to detect without information on actual interactions between eligible and non-eligible.