

RESULTS FROM A SUCCESSFUL SCHOOL INTEGRATION PROGRAM: Evaluation of the OOIH program, Hungary, 2005–2007

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ProgramEval, CEU 2009

The OOIH program

- National Integrated Education Network (Országos Oktatási Integrációs Hálózat, OOIH)
 - ▶ organized by the Hungarian Government
 - ▶ the evaluated program started in fall 2003
 - ▶ in 45 primary schools a.k.a. "bázis schools"
 - ▶ grandfathered, starting with those in grades 1 and 5 in 2003/4
- Goal: integrated and quality education of Romani/disadvantaged students
 - ▶ participating schools have sizeable Romani/disadvantaged minority
 - ▶ integration required across and within groups
 - ▶ financial support: equipment, physical environment, etc.
 - ▶ educational support: intensive training in modern methods, consulting, etc.
 - ▶ multiple elements, freedom of choice for schools
 - ▶ emphasis on schools (as opposed to individual teachers)
 - ▶ monitoring (by young Roma)

Evaluation questions

① Effects on schools

- ▶ integrated education
- ▶ education methods, classroom management
- ▶ student behavior

② Effects on students

- ▶ grades, further education, competence (reading tests)
- ▶ self esteem, locus of control
- ▶ social anxiety, social dominance orientation
- ▶ prejudice, social distance across ethnic groups (Roma versus non-Roma)

- Results are published in a report by the Roma Education Fund
http://www.romadecade.org/a_successful_school_integration_program_2009

Evaluation methodology, cont.

Treatment vs. control comparisons

- Control group: Matching at school level
 - ▶ one-to-one matching
 - ▶ using propensity score on pre-program school characteristics
 - ★ including some data on student composition and achievement test results
- Simple difference of means
- Generalized diff-in-diff regressions
 - ▶ i – individual, j – school,
 - ▶ $t = 0$ – "input measurement", $t = 1$ – "outcome measurement"
 - ▶ $y_{ij1} = \alpha w_j + \beta' x_{ij} + \gamma' (x_{ij} - \bar{x}) w_j + \delta' y_{ij0} + u_{ij}$
 - ▶ y_{ij0} not always defined the same as y_{ij1}
 - ▶ x includes controls wave 1 results, family background,
 - ★ it ofteh includes social desirability ("good impression making")
- Also restricted to program schools that were not integrating before the program

Control group

Matching at school level

- 60 schools: 30 program schools and 30 control schools
- matched sample: every program school has a matched control pair
 - ▶ within same region and village/town type
 - ▶ propensity score matching using many pre-program characteristics (student composition, competence test results, some evidence on Romani students etc.)
 - ▶ checked with sociologists with local knowledge
- Student sample
 - ▶ all students who were in grade 1 or 5 in 2003/4
 - ▶ followed them through grade 4 and 8, respectively

Results of the matching

Pre-program characteristics; 1999 and 2003

	PROGRAM SCHOOLS	CONTROL SCHOOLS	NATIONAL AVERAGE
Population in town/village of school	87,363	83,399	225,992
School size (number of students)	320	311	286
Fraction eligible for Roma minority support in 1999 (%)	31	26	5
Fraction of students at risk (%)	16	15	9
Fraction of students (%) with			
Mother's education less than 8 grades	9	7	2
Mother's education exactly 8 grades	35	33	21
Father's education less than 8 grades	3	5	1
Father's education exactly 8 grades	26	25	14
No working parent	29	30	20
Number of books at home 0 to 50	29	26	12
Number of books at home approximately 50	16	15	12

Results of the matching, cont.

Pre-program characteristics, 2003

Competence scores at school level, 6 th grade, spring 2003			
Mathematics: school average	456	446	500
Reading: school average	449	436	500
Mathematics: school standard deviation	88	88	87
Reading: school standard deviation	92	95	89

Geographic distribution of the matched sample



Measurement

Three waves of data collection

1 2004/5: "input measurement"

- ▶ students: cognitive and non-cognitive skills, grades, etc.
- ▶ schools: class composition, participation in other programs etc.

2 2005/6:

- ▶ students: family background (questionnaire to parents)
- ▶ classroom observations

3 2006/7: "outcome measurement"

- ▶ students: ethnic identity (from parents), cognitive and non-cognitive skills etc., grades, further education (admissions)

Characteristics of the matched sample

Student composition, measured in 2006

	GRADE 3			GRADE 7		
	Program	Control	National	Program	Control	National
Number of students with information	810	909	91,349	757	897	92,588
Fraction girls (%)	47	48	50	49	50	49
Welfare eligible (%)	37	37	19	31	35	20
Eligible for free meal in school (%)	59	60	28	10	8	4
Eligible for free school books (%)	73	83	57	66	78	52
Average family size	4.9	5.0	4.5	4.7	4.8	4.4
Fraction with father in family (%)	78	76	83	76	73	79
Mother uneducated (8 grades or less, %)	43	43	21	40	40	19
Father uneducated (8 grades or less, %)	35	35	16	32	29	13
Fraction with working mother (%)	41	42	66	52	51	73
Fraction with working father (%)	64	64	84	69	65	80
Avg. size of apartment (sqmeter/capita)	19.0	19.0	n.a.	20.8	20.5	n.a.
Average monthly spending (HUF '000)	109	110	n.a.	120	115	n.a.
Fraction who think poor (%)	38	38	17	29	29	14
Fraction who were not on holiday (%)	41	41	21	28	31	18
Fraction without a car (%)	46	48	27	44	43	27
0 to 50 books at home (%)	35	35	16	29	27	12

Measurement of ethnic identity

- Assessed by parents
 - ▶ "Please indicate which of the following characterizes the ethnic/national identity of your child. Feel free to indicate multiple categories. My child is
 - ▶ Hungarian, non-Roma; Hungarian, Roma; Hungarian, partly Roma; Non-Hungarian, Roma; Romanian; Slovak;..."

Fraction of Romani students from parents' declaration versus schoolteachers' estimates

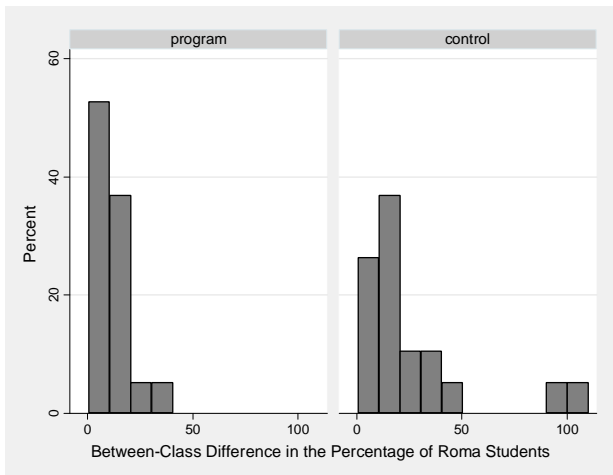
	Grade 4		Grade 8	
	B	K	B	K
Fraction Roma, parental declaration (%)	35	35	27	29
Missing parental declaration (%)	25	28	27	32
Fraction Roma, schoolteacher estimates (%)	34	36	27	33

Results to be presented

- Schools
 - ▶ ethnic integration
 - ▶ some on teaching methods and classroom dynamics
- Student results
 - ▶ reading tests
 - ▶ secondary school admission
 - ▶ self-esteem, locus of control, coping
 - ▶ social distance to other ethnic group
- Student results and student composition in class
 - ▶ results of Roma and non-Roma by fraction of Romani students

Integrated education

In program schools, across-group differences within same grade are small in terms of ethnic composition. Such differences are large in quite a few control schools.



Forms of activity

	GRADE 3			GRADE 7		
	PROGRAM SCHOOLS	CONTROL SCHOOLS	DIFFERENCE	PROGRAM SCHOOLS	CONTROL SCHOOLS	DIFFERENCE
Frontal work form (%)	47	69	-22**	42	67	-27**
Individual work (%)	28	33	-5	25	33	-8**
Group work (%)	29	6	+23**	43	9	+32**

Elements of cooperative learning

If group work

	GRADE 3			GRADE 7		
	PROGRAM SCHOOLS	CONTROL SCHOOLS	DIFFERENCE	PROGRAM SCHOOLS	CONTROL SCHOOLS	DIFFERENCE
Positive interdependence (%)	35	18	+17*	32	8	+24**
Peer cooperation (%)	47	45	+2	43	32	+11*
Clear individual roles	42	24	+18*	31	30	+1
Equal participation	95	100	-5	95	85	+10

Interpersonal relationships and student autonomy

Distribution of classes observed (%)

	GRADE 3			GRADE 7		
	PROGRAM SCHOOLS	CONTROL SCHOOLS	DIFFERENCE	PROGRAM SCHOOLS	CONTROL SCHOOLS	DIFFERENCE
The teacher established a personal relationship with the student (%)	54	35	+19**	39	26	+13**
Medium or high level of student-student cooperation (%)	95	46	+49**	82	34	+48**
Medium or high level of attention (%)	97	93	+4	78	72	+6
Medium or high level of activity (%)	81	88	-7	63	53	+10*
Medium or high level of student autonomy (%)	54	40	+14*	47	33	+14*

Didactic and student-centered elements

Distribution of classes observed (%)

	GRADE 3			GRADE 7		
	PROGRAM SCHOOLS	CONTROL SCHOOLS	DIFFERENCE	PROGRAM SCHOOLS	CONTROL SCHOOLS	DIFFERENCE
DIDACTIC ELEMENTS						
At the beginning of the class, the teacher shares the objectives of the period (%)	57	57	0	76	71	+5*
At the beginning of the class, the teacher shares the structure of the period (%)	18	10	+8+	19	15	+4
The structure of the class is logical (%)	88	95	-7*	81	96	15**
Summarizing of the content at the end of the period (%)	23	49	-26**	33	27	-6
STUDENT-CENTERED ELEMENTS						
Warm up activity at the beginning of the class (%)	65	60	+5	39	32	+7
Closing up activity (%)	16	23	-7	13	3	10**

Characteristics of activities

Distribution of activities (%)

	GRADE 3			GRADE 7		
	PROGRAM SCHOOLS	CONTROL SCHOOLS	DIFFERENCE	PROGRAM SCHOOLS	CONTROL SCHOOLS	DIFFERENCE
Strongly motivating (%)	32	22	+10**	17	10	+7*
Manual (%)	20	12	+8**	13	6	+7*
Playful (%)	42	32	+10**	23	9	+12**
Creative (%)	32	16	+16**	23	8	+15**
Kinesthetic (%)	14	7	+7**	8	3	+5*

Reading skills: raw differences

Measured in standardized test scores

	GRADE 3			GRADE 7		
	PROGRAM SCHOOLS	CONTROL SCHOOLS	DIFFERENCE	PROGRAM SCHOOLS	CONTROL SCHOOLS	DIFFERENCE
All students	0.08	-0.07	+0.15**	0.05	-0.04	+0.09+
Roma students	-0.40	-0.55	+0.15+	-0.28	-0.43	+0.16+
Non-Roma students	0.31	0.24	+0.07	0.22	0.17	+0.05
Disadvantaged students	-0.36	-0.49	+0.13+	-0.28	-0.40	+0.12
Non-disadvantaged students	0.46	0.26	+0.20**	0.22	0.12	+0.10+

Reading skills: regression results

Measured in standardized test scores

	ALL STUDENTS	ROMA STUDENTS	NON-ROMA STUDENTS	DISADVANTAGED STUDENTS	NON-DISADVANTAGED STUDENTS
GRADE 4					
Full sample	+0.10**	+0.12	+0.06	+0.16**	+0.07
Narrow sample	+0.08	+0.21+	+0.03	+0.09	+0.11
GRADE 8					
Full sample	+0.09+	+0.13	+0.03	+0.07	+0.04
Narrow sample	+0.13*	+0.09	+0.18*	-0.02	+0.17*

Control variables: family background, test scores from two years before.

Admission to secondary schools (with maturity at end)

Admission rates (%) after having finished grade 8

	Program	Control	Diff
All students	69	60	+9
Roma	49	37	+12
Non-Roma	77	70	+7
Disadvantaged (HH)	44	40	+4
Not disadvantaged (non-HH)	78	68	+10

Admission to secondary schools (with maturity at end)

Regression results

	ALL STUDENTS	ROMA STUDENTS	NON-ROMA STUDENTS	DISADVANTAGED STUDENTS	NON-DISADVANTAGED STUDENTS
Full sample	+7*	+8	+7*	+4	+7*
Narrow sample	+5	+6	+6+	+7	+5

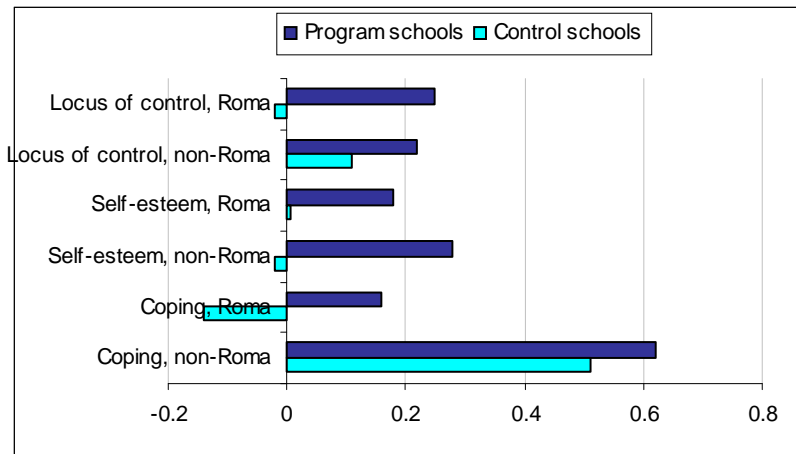
Control variables: family background, test scores from two years before.

"Non-cognitive skills"

- Self-esteem
 - ▶ measurement: adopted and standardized Harter-SPPC test (4 components / exterior, school performance, good behavior, social functioning/ plus general, aggregated into one score)
- Locus of control
 - ▶ the extent to which people think they can influence their own destiny
 - ▶ measurement: adopted and standardized Rotter test
- Coping
 - ▶ the extent to which people can go on w/o lasting negative consequences after some difficult situations even if the problem remains
 - ▶ measurement: standardized test of our own
- These traits are
 - ▶ as important as cognitive skills (in labor market success and avoiding deviant behavior)
 - ▶ can be influenced in adolescence (as opposed to cognitive skills)

Non-cognitive skills

Raw differences by ethnicity



Non-cognitive skills

Regression estimates

Locus of control

	ALL STUDENTS	ROMA STUDENTS	NON-ROMA STUDENTS	DISADVANTAGED STUDENTS	NON-DISADVANTAGED STUDENTS
Full sample	+0.13**	+0.24**	+0.10	+0.15+	+0.10
Narrow sample	+0.10+	+0.27+	+0.07	0.00	+0.05

Self-esteem

	ALL STUDENTS	ROMA STUDENTS	NON-ROMA STUDENTS	DISADVANTAGED STUDENTS	NON-DISADVANTAGED STUDENTS
Full sample	+0.24**	+0.28**	+0.24**	+0.38**	+0.20**

Non-cognitive skills

Regression estimates

Coping

	ALL STUDENTS	ROMA STUDENTS	NON-ROMA STUDENTS	DISADVANTAGED STUDENTS	M
Full sample	+0.08	+0.31*	+0.03	+0.13	
Narrow sample	+0.16+	+0.41*	+0.08	+0.12	

Control variables: family background, test scores from two years before, social desirability.

Social distance from Romani peers

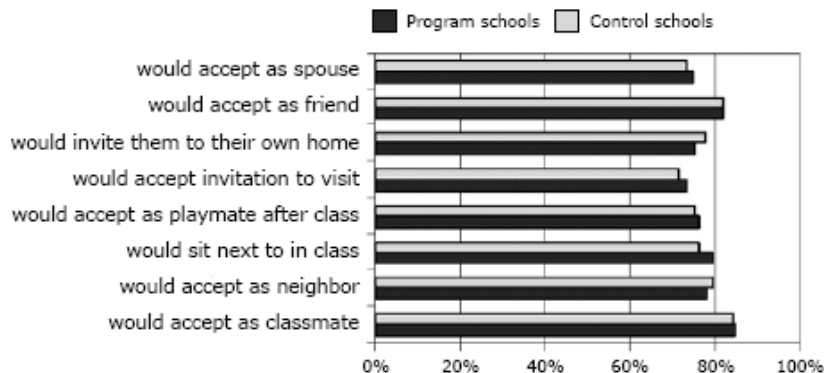
(standardized test results: more positive numbers mean larger distance)

Program versus control difference in the acceptance of members of the other ethnic group.

	Of Non-Roma by Roma	Of Roma by Non-Roma
Raw	+0.02	+0.05**
Controlled for social desirability	+0.02	+0.05**
Restricted sample	-0.02	+0.12**

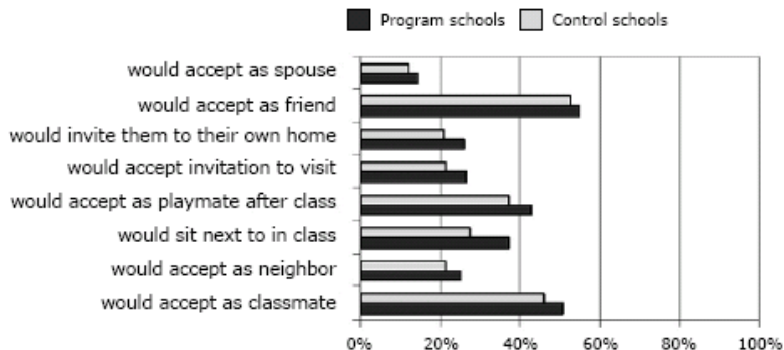
Dimensions of social distance

How much Roma students would accept non-Roma



Dimensions of social distance

How much non-Roma students would accept Roma

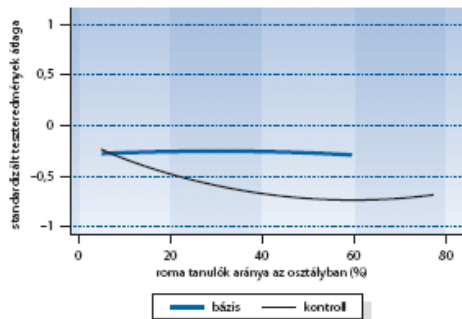


Class composition and student results

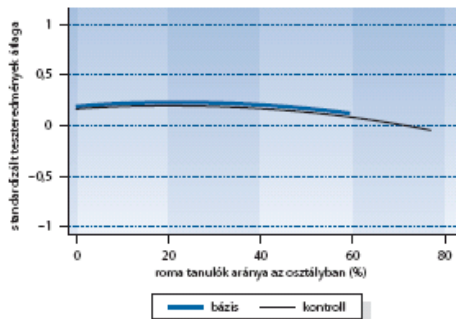
- Students in a class with more Romani students are expected to do worse
 - ▶ Assuming Roma students are more likely to be "problematic"
 - ▶ direct peer effects
 - ▶ classroom management problems
 - ▶ effects on teacher motivation and selection
- All may be mitigated by good teachers and principals
- Non-Romani students in a class with more Romani students are expected to be more tolerant
 - ▶ contact hypothesis

Class composition and student results

Reading tests



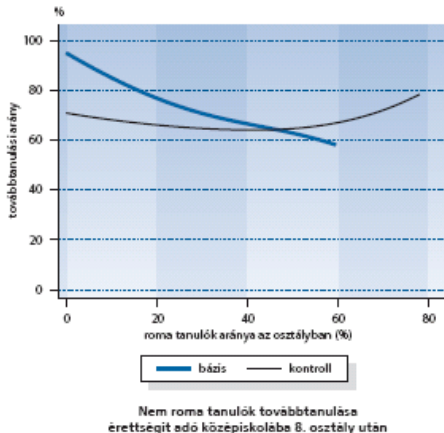
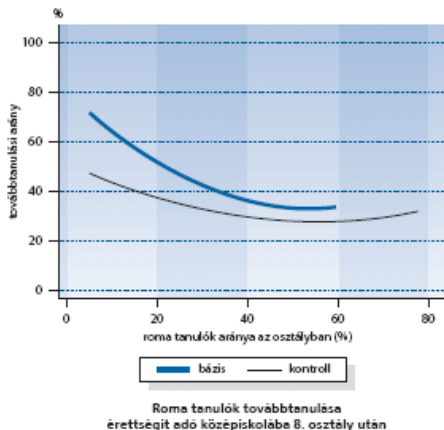
Szövegértés 8. osztály, a roma tanulók eredményei



Szövegértés 8. osztály, a nem roma tanulók eredményei

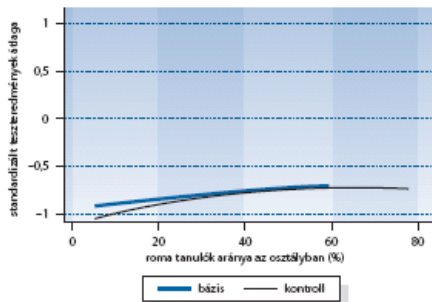
Class composition and student results

Admission to secondary high school with maturity

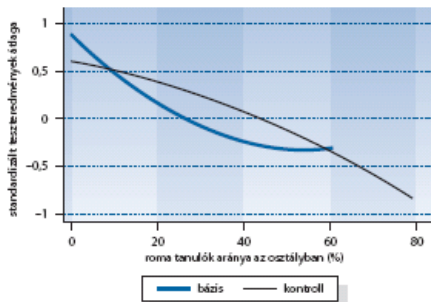


Class composition and student results

Social distance from the other ethnic group



Társadalmi távolság a nem romáktól, 8. osztály, a roma tanulók eredményei



Társadalmi távolság a nem romáktól, 8. osztály, a nem roma tanulók eredményei

Conclusions

- The effect of the OOIH program is positive
 - ▶ on students' reading skills
 - ▶ on students' admission to secondary schools
 - ▶ on students' self-esteem, locus of control and coping
 - ▶ on non-Romani students' social distance from their Romani peers (smaller distance)
- The effects are not very large
 - ▶ but they are present *in all dimensions*
 - ▶ and they are positive *for all kinds of students (Roma and non-Roma, disadvantaged and non-disadvantaged)*
- The mechanisms are complex
 - ▶ student-centered education and student autonomy seem important
- Program sometimes (but not always) breaks the negative effect of student composition
 - ▶ in many cases results are strong only if fraction Roma stays below 30%
 - ▶ inter-racial contact shown to always increase tolerance for non-Roma

Conclusions, cont.

- Is it really the effect of the program?
 - ▶ without randomized experiments we can never be sure
 - ▶ evidence supports the causal effect interpretation
 - ▶ certainly the effect of better education (whether because of the program or not)
- Policy conclusions
 - ▶ integrated education *does not hurt anyone if done well*
 - ▶ *quality education* is the key to good results
 - ▶ teacher training can be effective
- What now?
 - ▶ the original program is going through many changes (falling apart?)
 - ▶ reinforces the need for *quality education*
 - ▶ teacher training, school management, accountability