

# NATIONAL LEARNING ASSESSMENT 2018

*The main study 2018:*

*first results*

*INVALSI*

Roma, 5 July 2018

- ✓ **INVALSI 2018 test design**
- ✓ **computer based test (CBT) administration**
- ✓ **data reliability (*cheating*)**
- ✓ **INVALSI 2018 test results**
- ✓ **final considerations**

## Paper tests:

- ✓ **grade 2:**
  - Reading comprehension (Italian)
  - Instrumental decoding reading test
  - Mathematics
  
- ✓ **grade 5:**
  - Reading comprehension (Italian)
  - Mathematics
  - English-reading (CEFR: pre-A1, A1)
  - English-listening (CEFR: pre-A1, A1)

## *Computer based tests (CBT)*

- ✓ **grade 8:**
  - Reading comprehension (Italian)
  - Mathematics
  - English-reading (CEFR: pre-A1, A1, A2)
  - English-listening (CEFR: pre-A1, A1, A2)
  
- ✓ **grade 10:**
  - Reading comprehension (Italian)
  - Mathematics

- ✓ **grade 5:**
  - English tests: *reading* and *listening* (receptive skills)
  - results according to the *Common European Framework of Reference for Languages (CEFR)*
  
- ✓ **grade 8:**
  - computer based test administration
  - English tests: *reading* and *listening* (receptive skills)
  - new relationship with the final State Exam (admission requirement)
  - results given through *qualitative* descriptors (PISA like)
  
- ✓ **grade 10:**
  - computer based test administration
  - results given through *qualitative* descriptors (PISA like)

- ✓ They are tests that take place entirely **online**, significantly reducing the technical requirements of the computers used for the tests
- ✓ the CBT tests are based on an **item bank** from which different tests are drawn for each discipline and which share the same characteristics of content, structure, length and difficulty
- ✓ the CBT tests do not take place on the same day, but within a **time frame** assigned to each school according to the number of students and the number of computers available
- ✓ return of results in terms of **qualitative descriptors** that for the English are those of the CEFR

✓ Grade 8:

- subjects: Italian, Mathematics, English (receptive skills)
- administration: **from 4 April 2018 to 21 April 2018** (from April 9 to April 12 in the sample classes with external observers)
- delivered tests: over **2,200,000**
- maximum *concurrency*: **83,000 students, over 1,200,000 http request per minute**
- difficulties in test delivery:
  - 7% of students in the English *listening* test
  - 1% of students for various reasons (internet, electricity, other unexpected events)

✓ Grade 10:

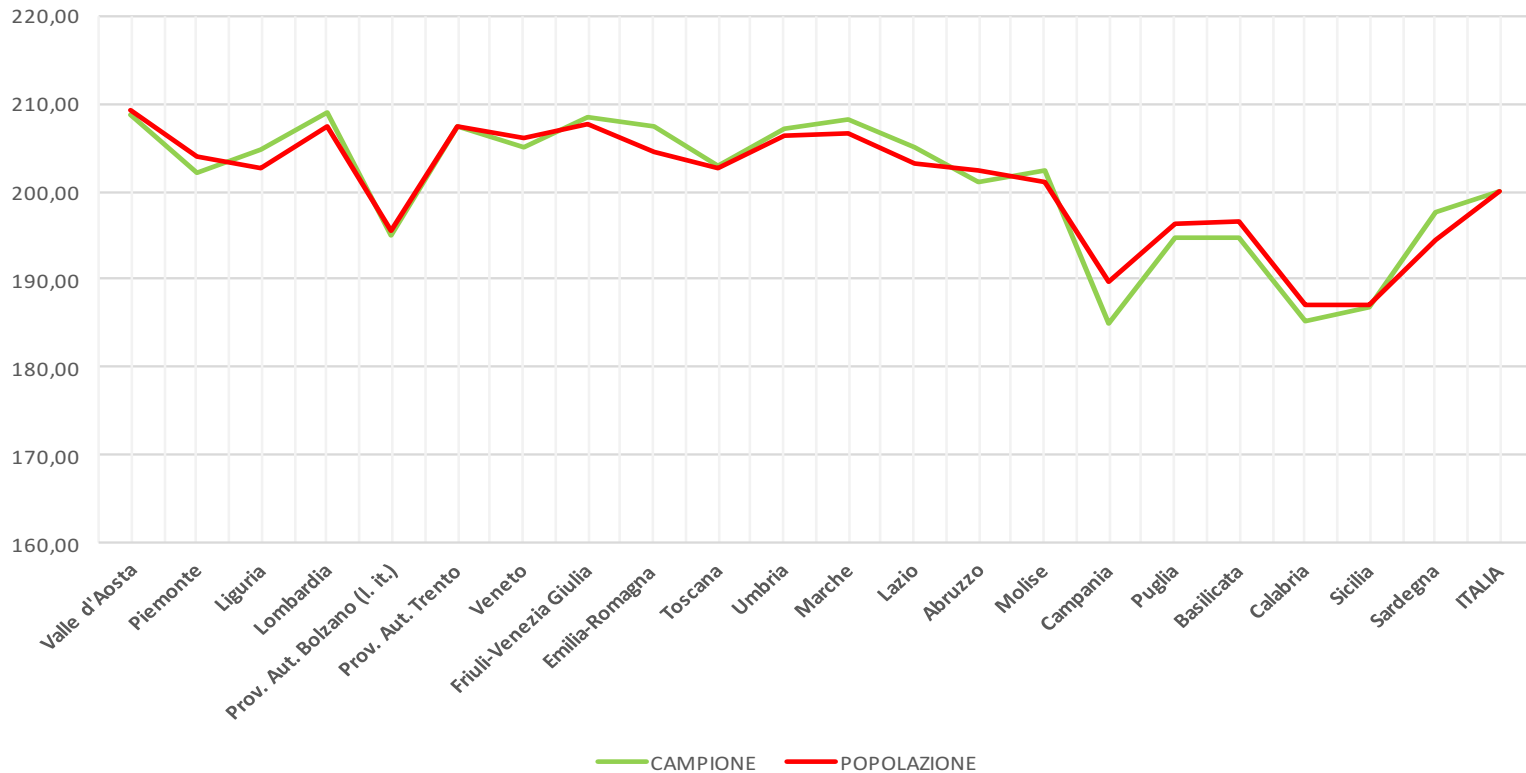
- subjects: Italian, Mathematics
- administration: **from 7 May 2018 to 19 May 2018** (from May 8 to May 11 in the sample classes with external observers)
- delivered tests: over **1,100,000**
- maximum *concurrency*: **62,000 students, over 1,200,000 http request per minute**

- ✓ Administration of standardized **linear** *high stakes* tests is exposed to the phenomenon of *cheating*, both at the student level and at the teacher level
- ✓ *Cheating* in INVALSI tests **until 2017**:
  - strong **regional** differences
  - prevalence of *teacher cheating*
  - only on **population** data in grades 2, 5 and 10
  - strongly present also in the Grade 8 **sample**
- ✓ not only a technical-statistical problem, but also an **educational** one

- ✓ statistical **disappearance** of *cheating* from Grade 8 sample and population data
- ✓ *ex post* validity **confirmation** of the method used until 2017 for the statistical correction of *cheating*
- ✓ **overcoming** the problem (not only statistical) of *false positives*

# The effects of the CBT design on *cheating* (cont.)

Punteggi medi per regione: confronto popolazione vs campione  
ITALIANO grado 8



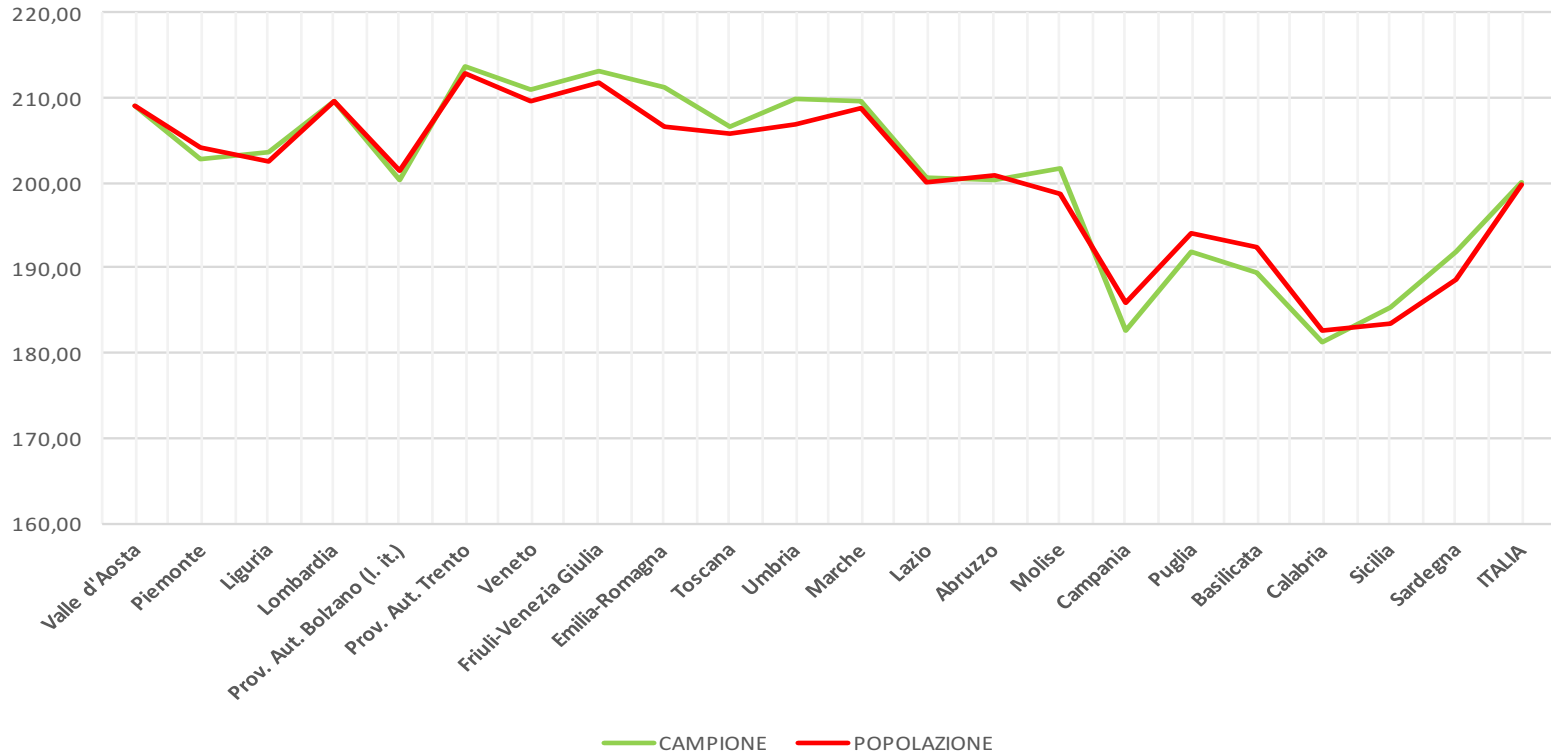
**Title:** Regional averages: population vs sample. ITALIAN grade 8

**Horizontal axe:** Italian regions

**Graph legend:** sample (green line), population (red line)

# The effects of the CBT design on *cheating* (cont.)

Punteggi medi per regione: confronto popolazione vs campione  
**MATEMATICA** grado 8



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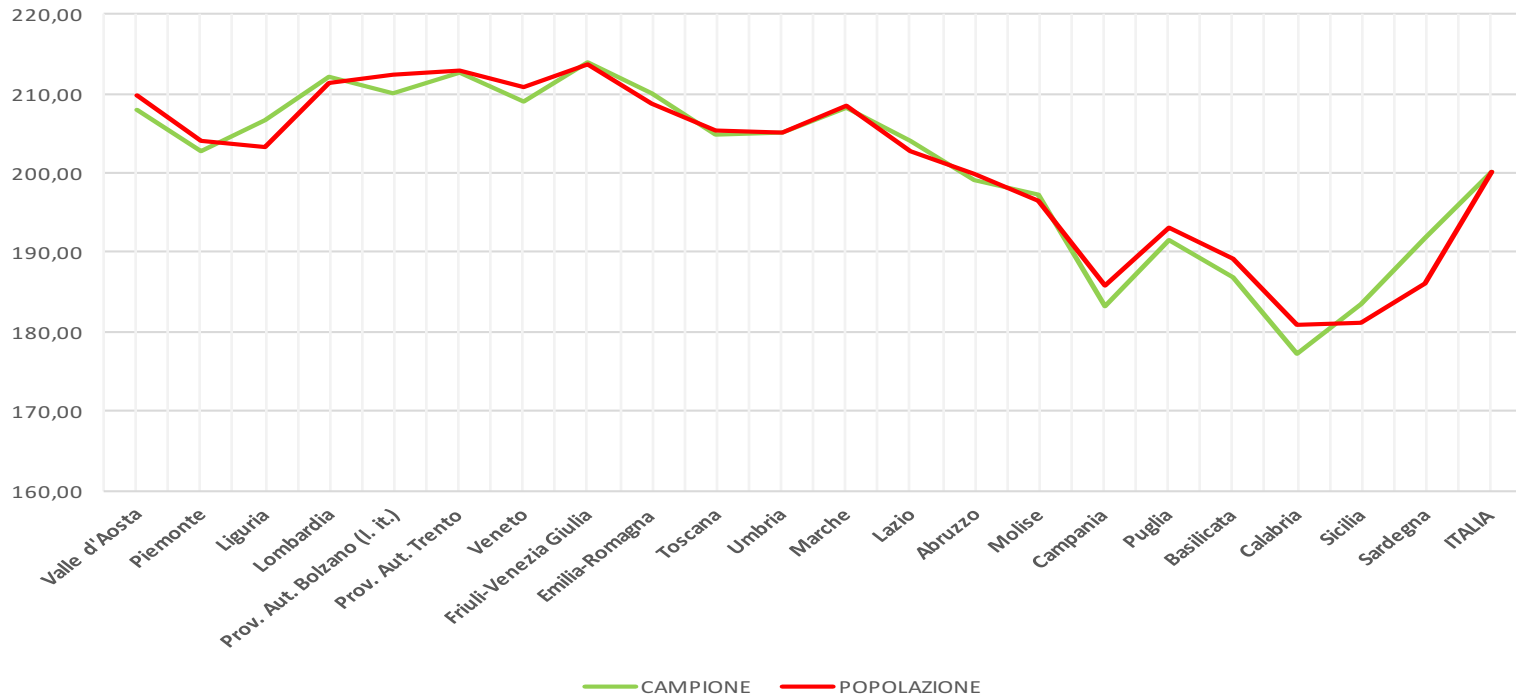
**Title:** *Regional averages: population vs sample. MATHEMATICS grade 8*

**Horizontal axis:** *Italian regions*

**Graph legend:** *sample (green line), population (red line)*

# The effects of the CBT design on *cheating* (cont.)

Punteggi medi per regione: confronto popolazione vs campione  
Inglese *reading* grado 8



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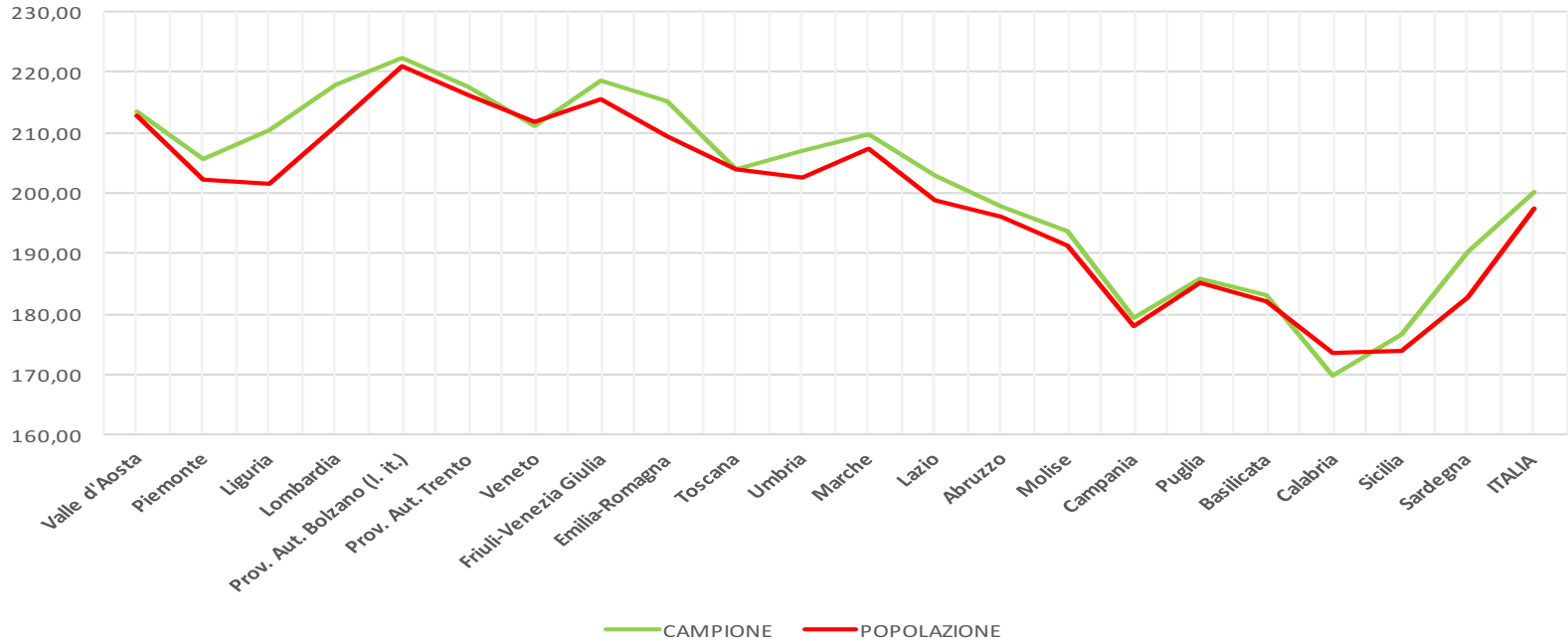
**Title:** *Regional averages: population vs sample. ENGLISH-READING grade 8*

**Horizontal axis:** *Italian regions*

**Graph legend:** *sample (green line), population (red line)*

# The effects of the CBT design on *cheating* (cont.)

Punteggi medi per regione: confronto popolazione vs campione  
Inglese *listening* grado 8



ROMA – 5 July 2018

**Title:** Regional averages: population vs sample. ENGLISH-READING grade 8

**Horizontal axis:** Italian regions

**Graph legend:** sample (green line), population (red line)



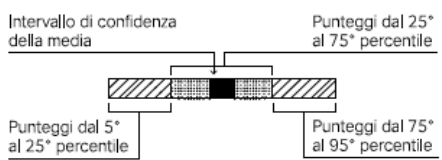
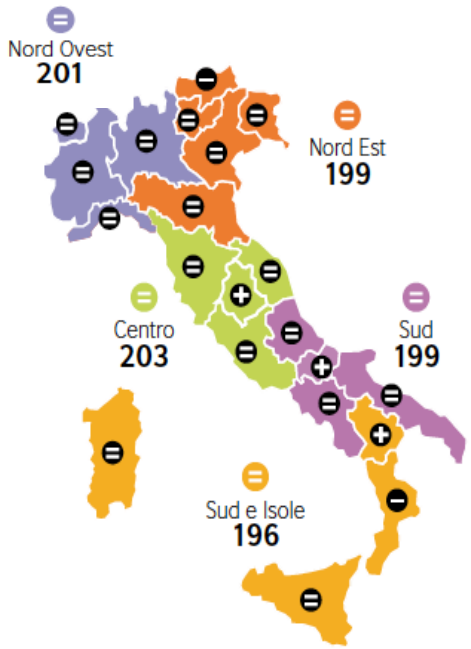
## The results of INVALSI 2018 tests

- ✓ **Grade 2:**
  - Italian and Mathematics – regional averages
- ✓ **Grade 5:**
  - Italian, Mathematics and English – regional averages
  - English: levels according to CEFR (pre-A1, A1)
- ✓ **Grade 8:**
  - Italian, Mathematics and English – regional averages and qualitative descriptors
  - English: levels according to CEFR (pre-A1, A1, A2)
- ✓ **Grade 10:**
  - Italian and Mathematics – regional averages

# The results of the INVALSI 2018 tests

## - Primary school -

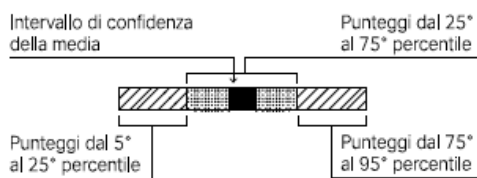
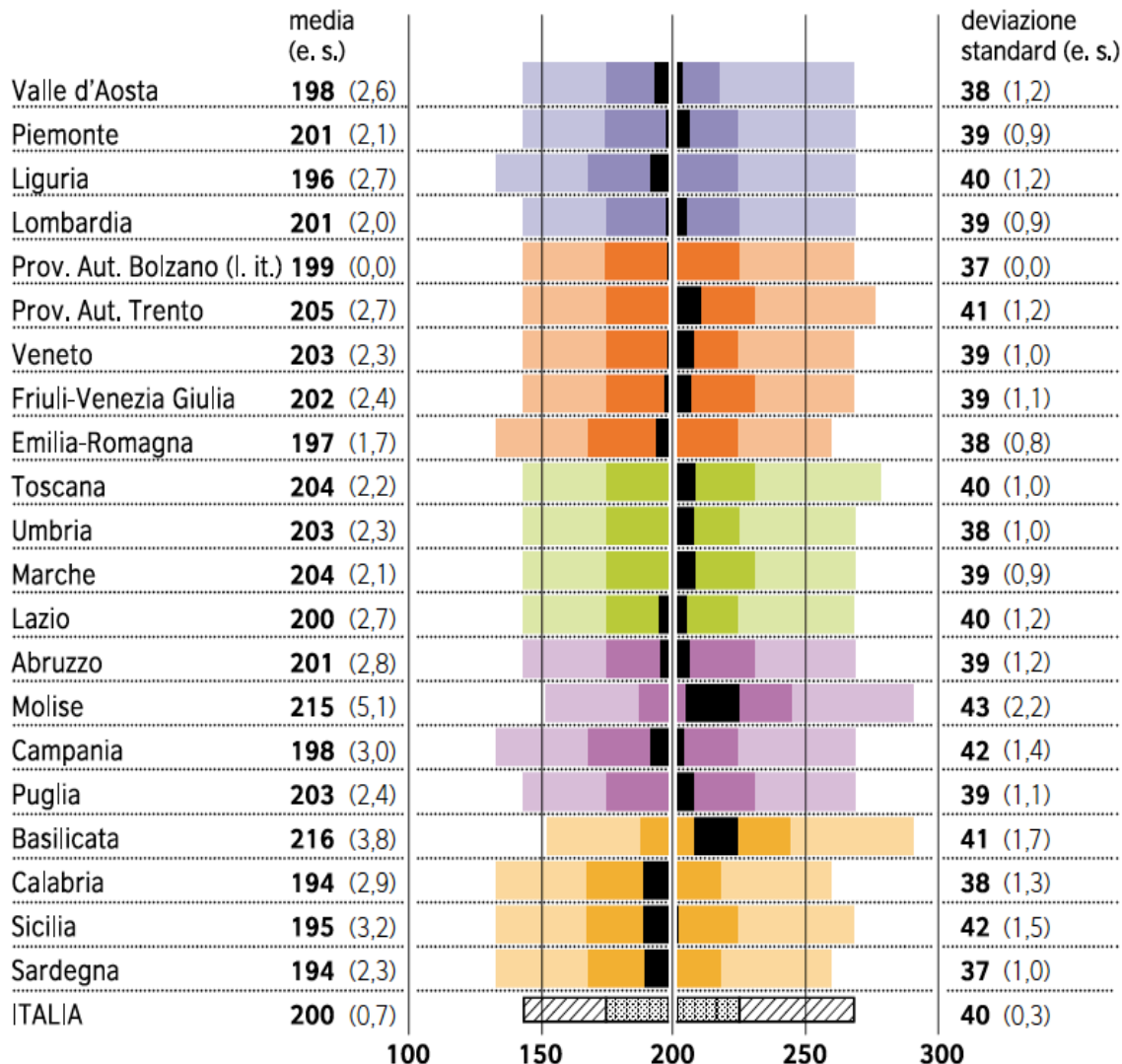
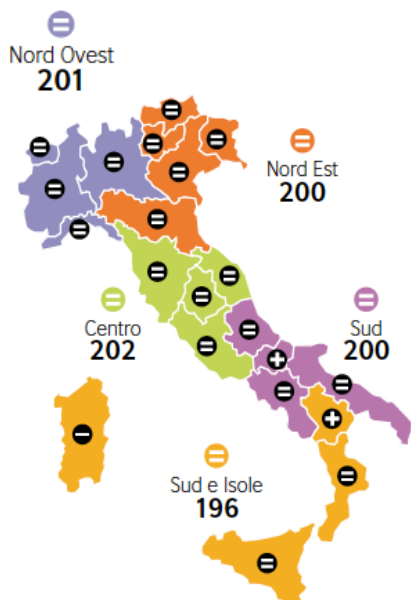
# Grade 2: ITALIAN



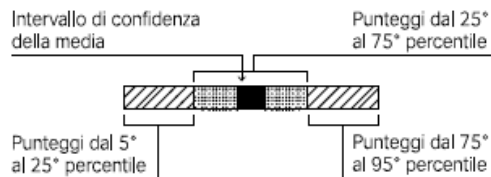
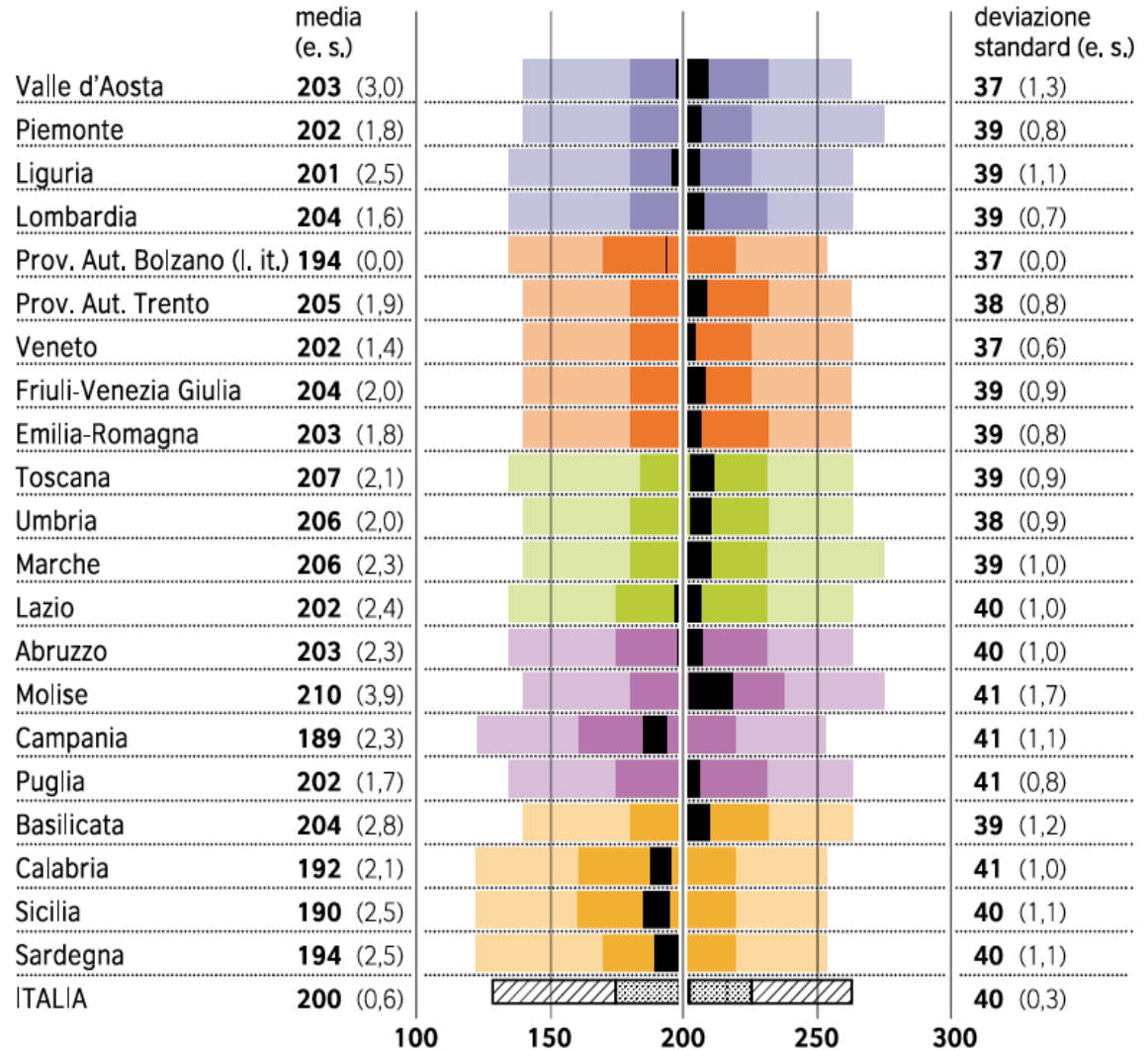
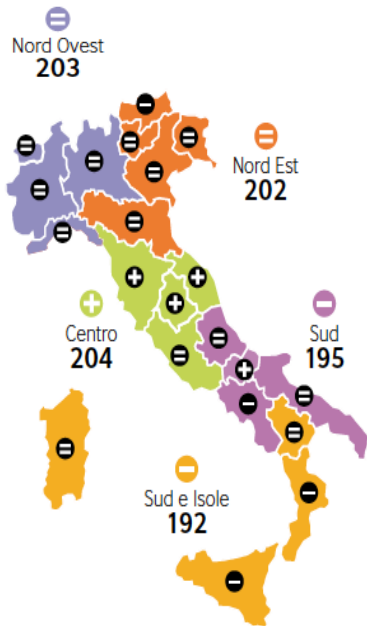
	media (e. s.)	deviazione standard (e. s.)
Valle d'Aosta	201 (2,7)	39 (1,2)
Piemonte	203 (1,8)	40 (0,8)
Liguria	200 (2,4)	41 (1,1)
Lombardia	200 (2,0)	40 (0,9)
Prov. Aut. Bolzano (l. it.)	196 (0,0)	38 (0,0)
Prov. Aut. Trento	200 (2,1)	39 (0,9)
Veneto	200 (1,6)	38 (0,7)
Friuli-Venezia Giulia	202 (2,3)	39 (1,0)
Emilia-Romagna	198 (1,4)	39 (0,6)
Toscana	205 (1,9)	40 (0,9)
Umbria	206 (1,6)	38 (0,7)
Marche	205 (1,8)	39 (0,8)
Lazio	202 (2,4)	41 (1,1)
Abruzzo	201 (2,0)	39 (0,9)
Molise	210 (3,6)	39 (1,5)
Campania	196 (2,4)	41 (1,1)
Puglia	203 (2,0)	37 (0,9)
Basilicata	210 (2,8)	39 (1,2)
Calabria	193 (2,0)	37 (0,9)
Sicilia	195 (2,9)	41 (1,3)
Sardegna	201 (2,2)	37 (0,9)
ITALIA	200 (0,6)	40 (0,3)

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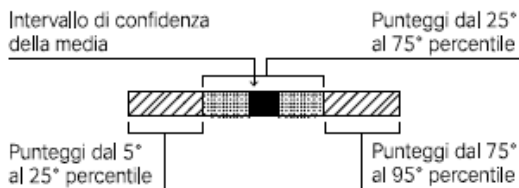
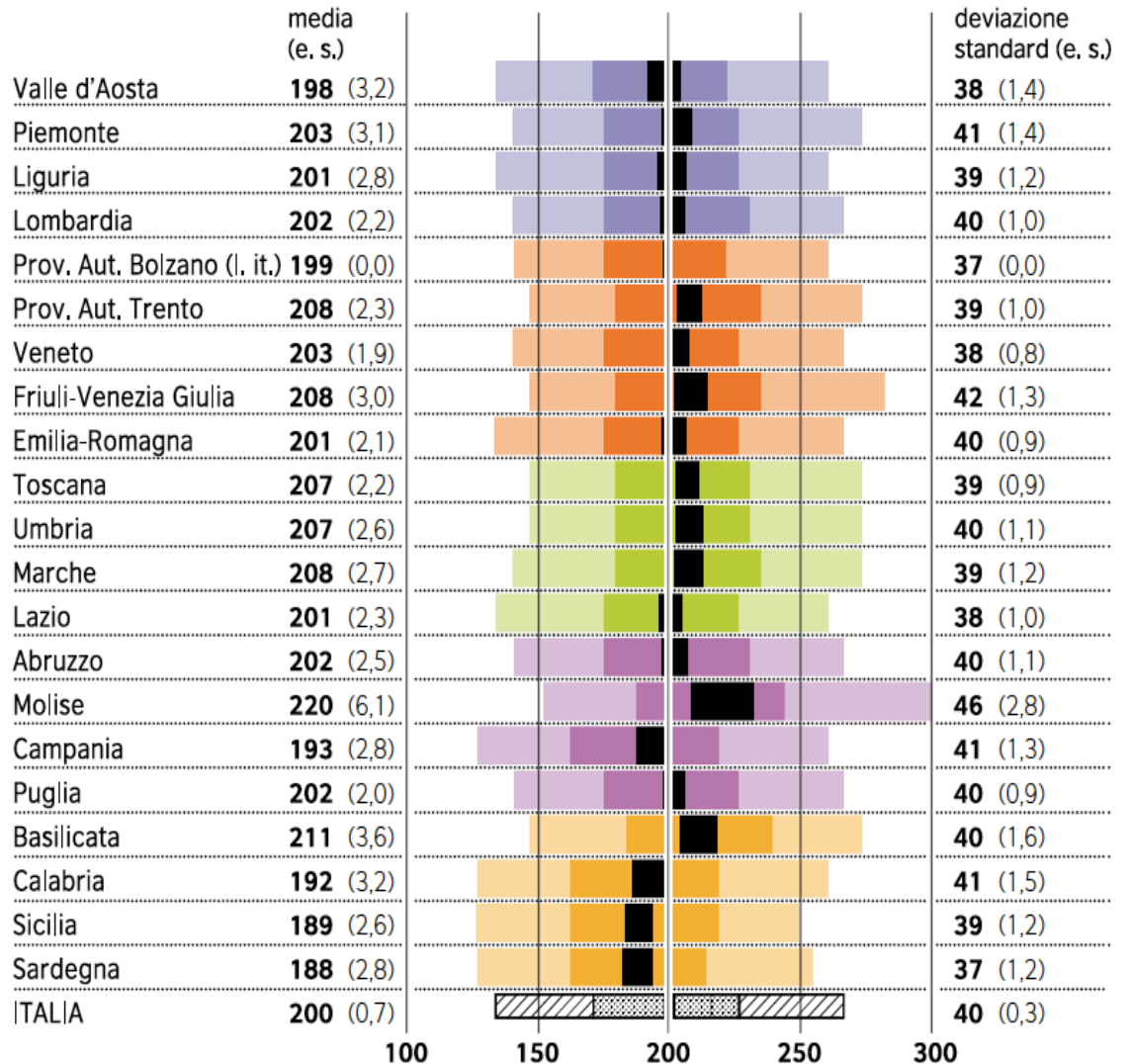
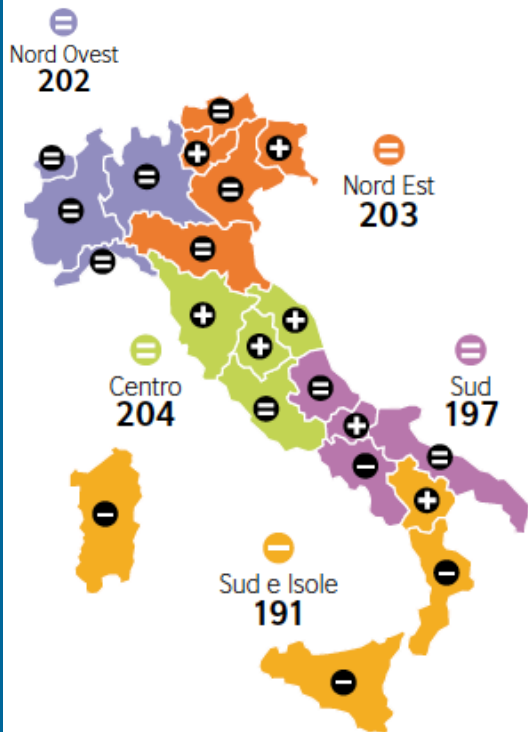
# Grade 2: MATHEMATICS



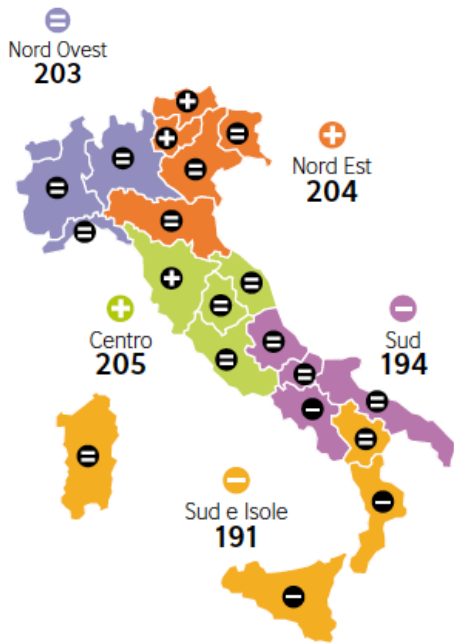
# Grade 5: ITALIAN



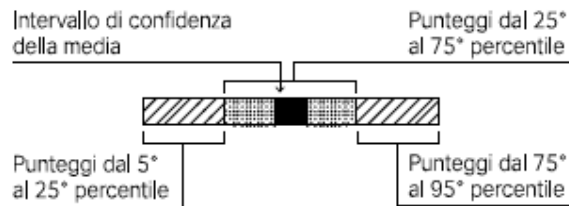
# Grade 5: MATHEMATICS



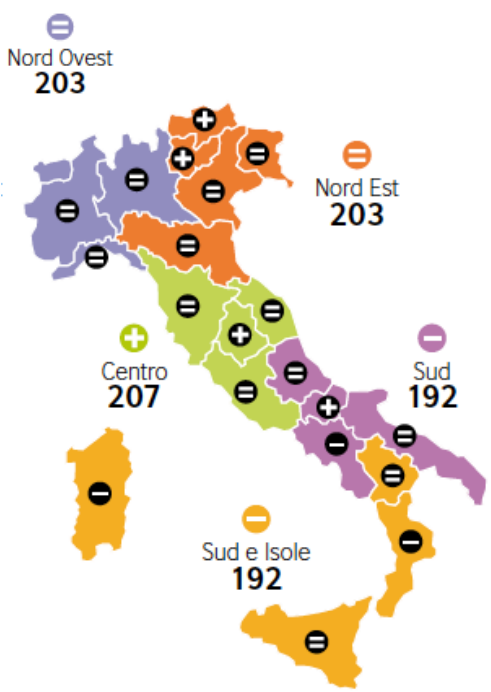
# Grade 5: ENGLISH-Reading - averages



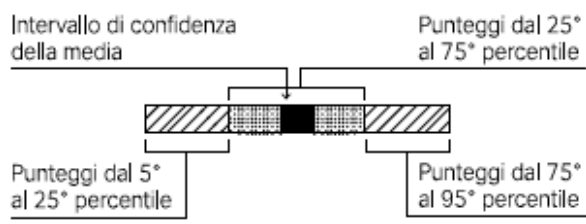
	media (e. s.)	deviazione standard (e. s.)
Valle d'Aosta	nd nd	nd nd
Piemonte	201 (2,2)	39 (1,0)
Liguria	201 (2,5)	39 (1,1)
Lombardia	205 (1,9)	39 (0,8)
Prov. Aut. Bolzano (l. it.)	209 (0,0)	40 (0,0)
Prov. Aut. Trento	211 (2,2)	39 (1,0)
Veneto	203 (1,5)	37 (0,6)
Friuli-Venezia Giulia	205 (2,3)	39 (1,0)
Emilia-Romagna	204 (1,6)	39 (0,7)
Toscana	207 (2,2)	40 (1,0)
Umbria	206 (2,3)	38 (1,0)
Marche	204 (2,7)	39 (1,2)
Lazio	204 (2,2)	40 (1,0)
Abruzzo	198 (2,1)	39 (0,9)
Molise	208 (3,9)	41 (1,7)
Campania	188 (2,5)	41 (1,1)
Puglia	200 (1,9)	39 (0,8)
Basilicata	202 (3,4)	41 (1,5)
Calabria	191 (2,7)	40 (1,2)
Sicilia	189 (2,9)	43 (1,4)
Sardegna	194 (4,2)	39 (1,9)
ITALIA	200 (0,7)	40 (0,3)



# Grade 5: ENGLISH-Listening - averages



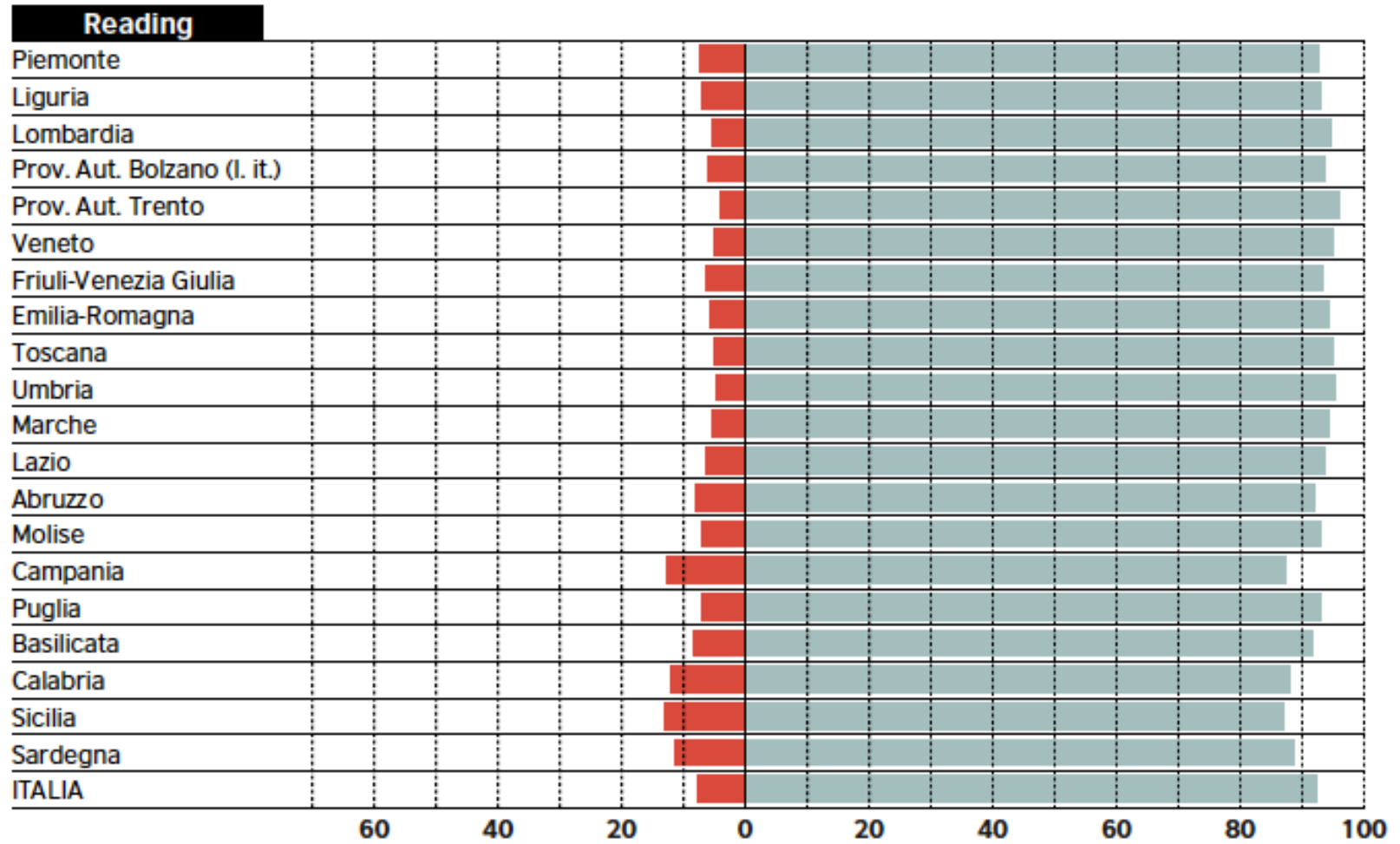
	media (e. s.)	deviazione standard (e. s.)
Valle d'Aosta	nd nd	nd nd
Piemonte	198 (2,5)	38 (1,1)
Liguria	200 (3,5)	39 (1,5)
Lombardia	205 (3,0)	40 (1,3)
Prov. Aut. Bolzano (l. it.)	218 (0,0)	39 (0,0)
Prov. Aut. Trento	223 (3,4)	41 (1,5)
Veneto	202 (2,2)	35 (0,9)
Friuli-Venezia Giulia	205 (2,6)	38 (1,1)
Emilia-Romagna	202 (2,2)	37 (0,9)
Toscana	208 (3,3)	39 (1,4)
Umbria	210 (3,1)	38 (1,3)
Marche	204 (2,9)	37 (1,2)
Lazio	207 (3,0)	41 (1,3)
Abruzzo	197 (3,2)	39 (1,4)
Molise	214 (5,8)	45 (2,7)
Campania	189 (3,1)	42 (1,5)
Puglia	195 (2,4)	38 (1,1)
Basilicata	201 (3,7)	40 (1,6)
Calabria	189 (2,9)	39 (1,3)
Sicilia	193 (3,3)	43 (1,6)
Sardegna	187 (4,0)	37 (1,8)
ITALIA	200 (0,9)	40 (0,4)



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# Grade 5: ENGLISH-Reading - CEFR levels

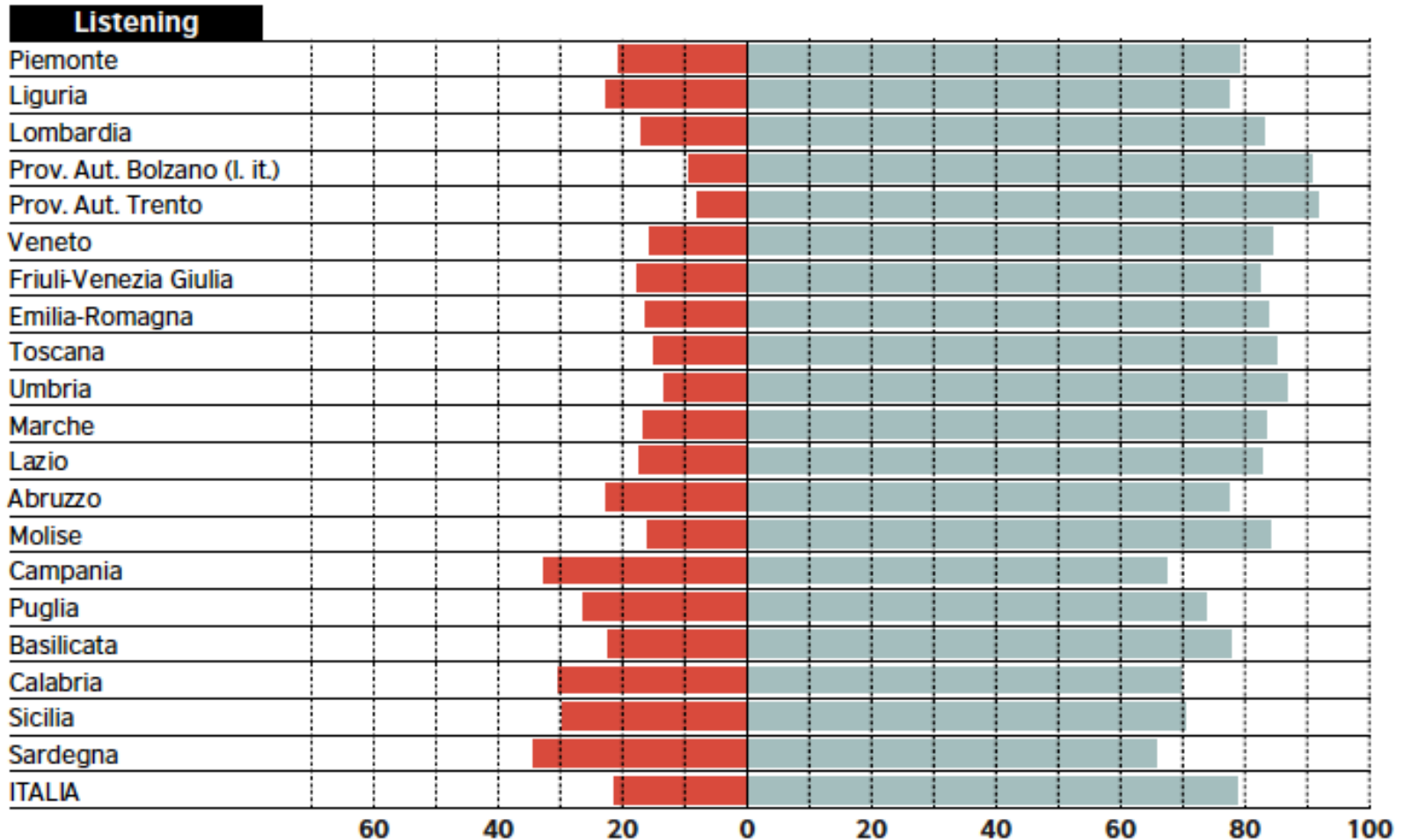
■ Pre A1 ■ A1



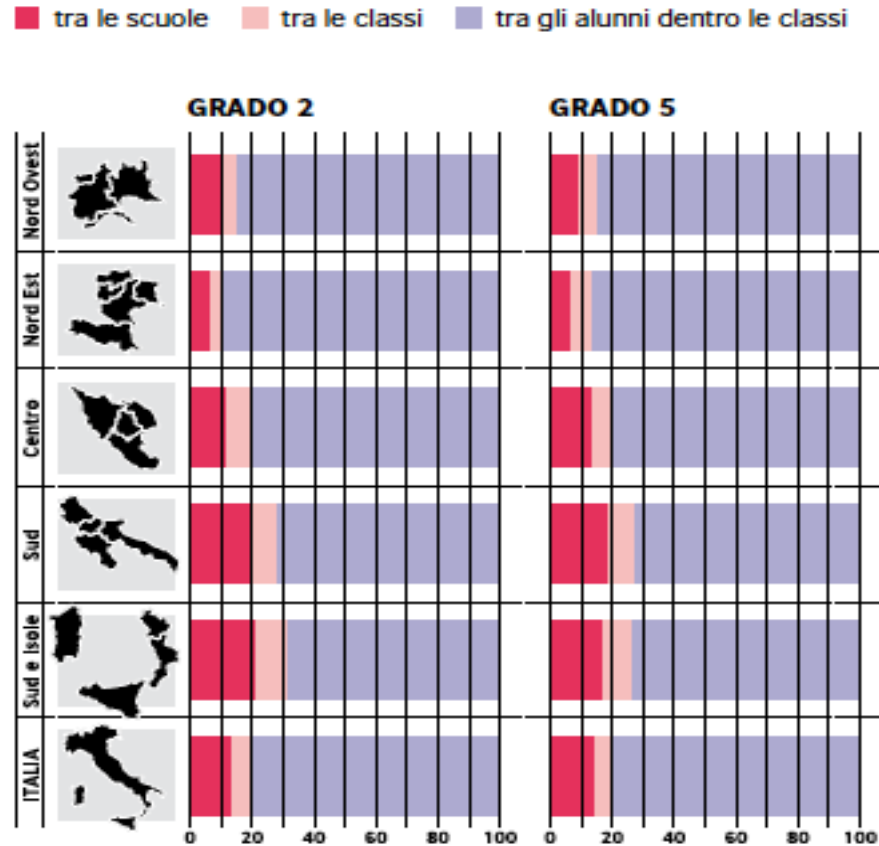
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# Grade 5: ENGLISH-Listening - CEFR levels

■ Pre A1 ■ A1

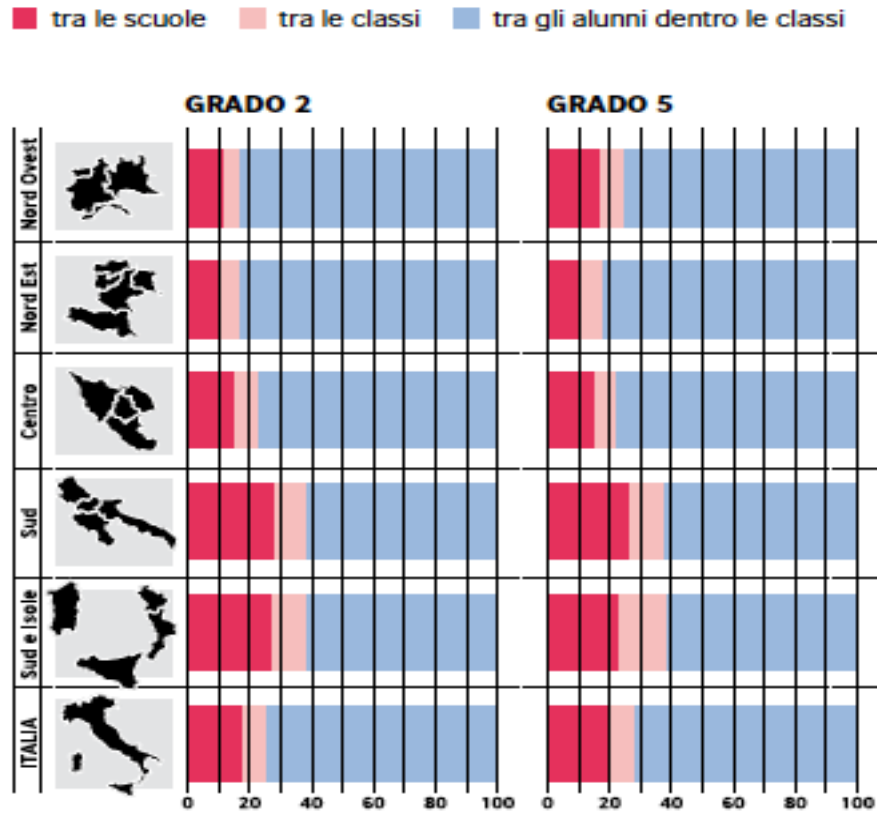


# A measure of school equity - ITALIAN



**Graph legend (top):** *between schools (red), between classes (pink), between students within classes (light blue)*

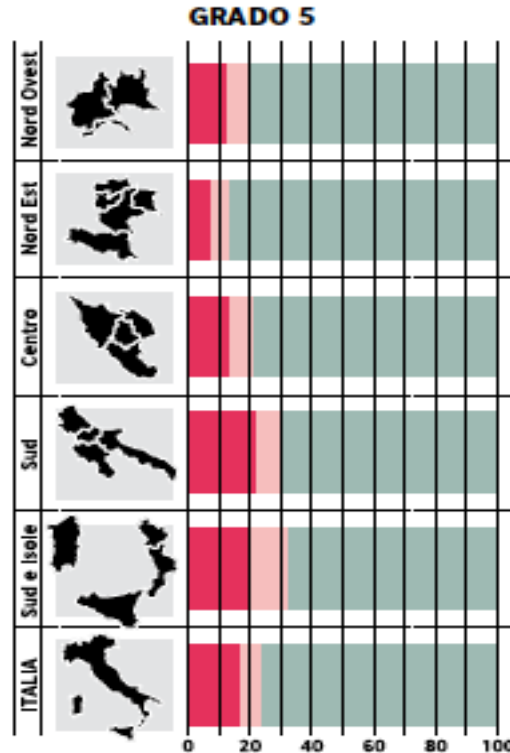
# A measure of school equity - MATHEMATICS



**Graph legend (top):** *between schools (red), between classes (pink), between students within classes (light blue)*

# A measure of school equity - ENGLISH (*reading*)

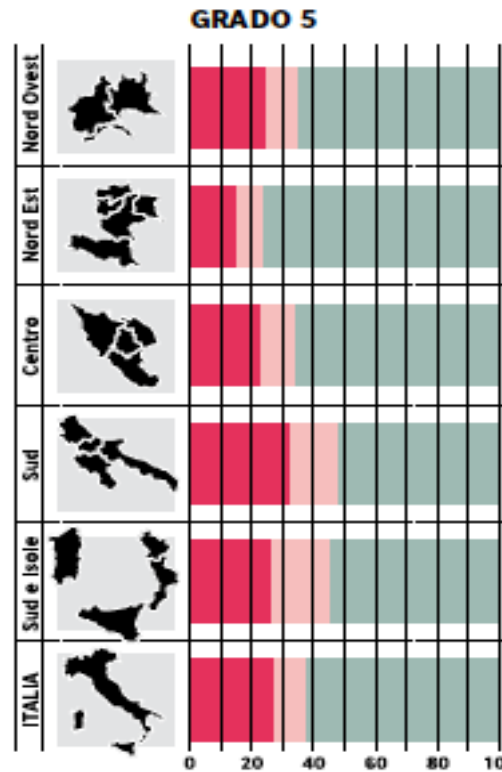
■ tra le scuole   
 ■ tra le classi   
 ■ tra gli alunni dentro le classi



**Graph legend (top):** *between schools (red), between classes (pink), between students within classes (light blue)*

# A measure of school equity - ENGLISH (*listeniong*)

■ tra le scuole   
 ■ tra le classi   
 ■ tra gli alunni dentro le classi



**Graph legend (top):** *between schools (red), between classes (pink), between students within classes (light blue)*

## ✓ Grade 2

- there are no great differences in the **average results** among regions, neither in Italian nor in Mathematics
- in some regions of Southern Italy (in particular Campania, Calabria, Sicily and Sardinia) there is a greater number of students with **very low levels of results**
- in Italian and even more in Mathematics there is a difference in results between schools and between classes in the southern regions, highlighting a **problem of equity** in the educational system since the beginning of the primary school

- ✓ Grade 5 (Italian and Mathematics)
  - the **differences in the average results** among regions increase; the Southern regions achieve significantly lower results than the national average
  - in some regions of Southern Italy (in particular Campania, Calabria, Sicily and Sardinia) we observe a high number of students with **very low levels of results**, especially in Mathematics
  - as for grade 2, in Italian and even more in Mathematics there is a difference in results between schools and between classes in the southern regions, highlighting a **problem of equity** in the educational system since the beginning of the primary school

# Primary school results in brief (cont.)

- ✓ Grade 5 (English)
  - at national level, very good results are observed :
    - *reading*: 92.4% reaches level A1 (CEFR)
    - *listening*: 78.6% reaches level A1 (CEFR)
  - strong **regional** result **differences**:

	READING		LISTENING	
	pre-A1	A1	pre-A1	A1
Nord Ovest	6,0%	94,0%	18,6%	81,4%
Nord Est	5,4%	94,6%	15,6%	84,4%
Centro	5,8%	94,2%	16,3%	83,7%
Sud	10,2%	89,8%	29,0%	71,0%
Sud e Isole	12,2%	87,8%	30,0%	70,0%



# The results of the INVALSI 2018 tests

## - Lower secondary school -

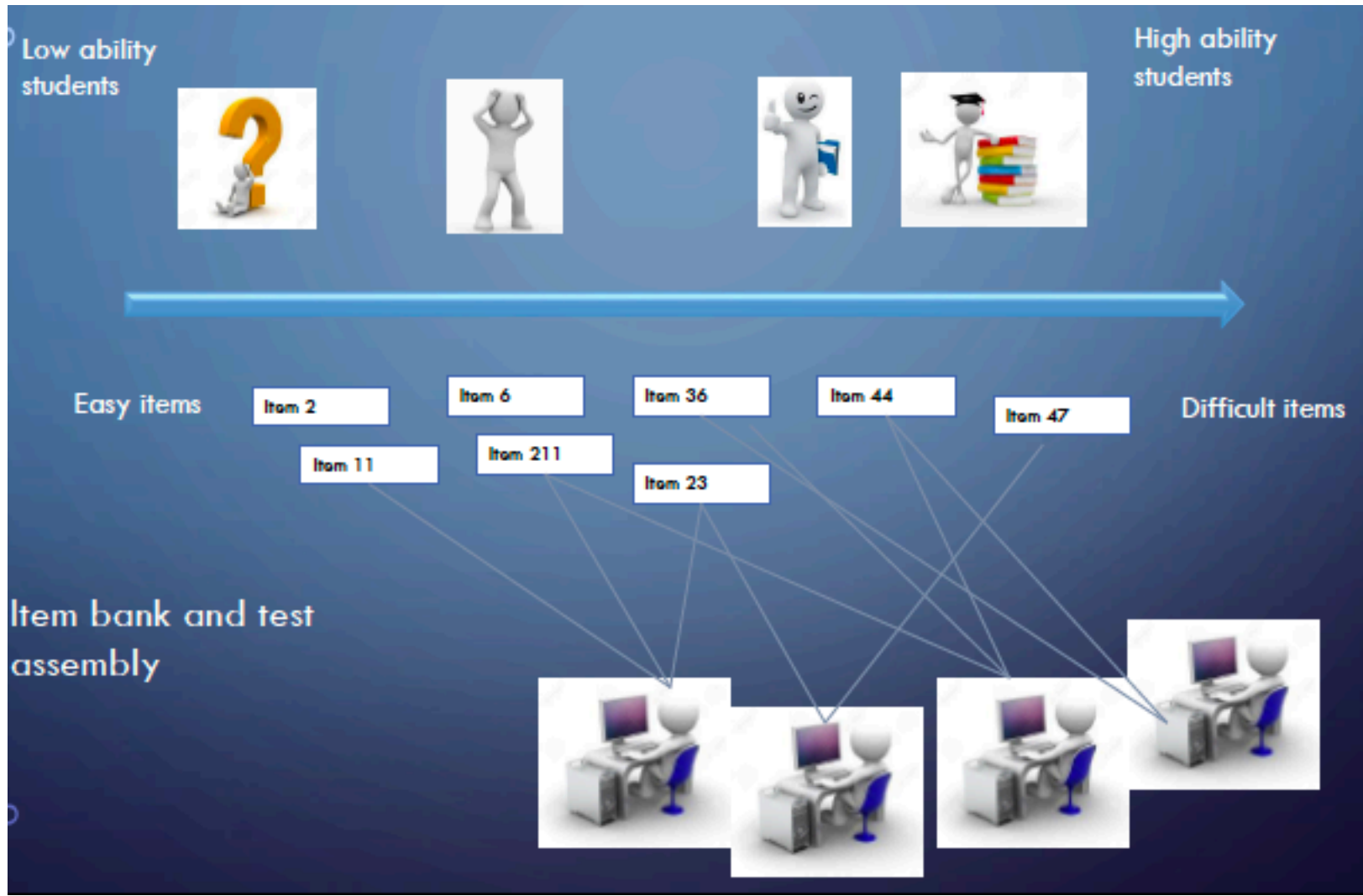
At a national and international level, more and more schools have set up frameworks (Fwk) for the promotion of a *critereon-referenced* and not *norm-referenced* assessment, i.e. referring to criteria that are generally shared and not individual or defined at class level (Decataldo, Fiore ; 2018).

Legislative Decree no. 62/2017 (Article 1, paragraph 2) strengthens the *critereon-referenced* functions through the explicit reference to the PTOF (School three-year plan of educational offer) and to the National Guidelines.

On the basis of the agreement signed on 12 December 2012 by the Prime Minister's Office and the State-Regions Conference, the ISCED2 qualification corresponds to level I of the EQF (European Qualifications Framework).

- ✓ Students respond to different forms of the test, assembled according to rules (*automated test assembly*) that guarantee the **measuring equivalence**
- ✓ Items are many **more** than those that can be administered to a single student
- ✓ Strong ***cheating reduction***
- ✓ Test results are given by a score and a description of the degree of skills and knowledge possessed by the students

# Measurement scale



1. Levels are defined according to the *statistical distribution of student results and item difficulty*:

- Italian
- Mathematics

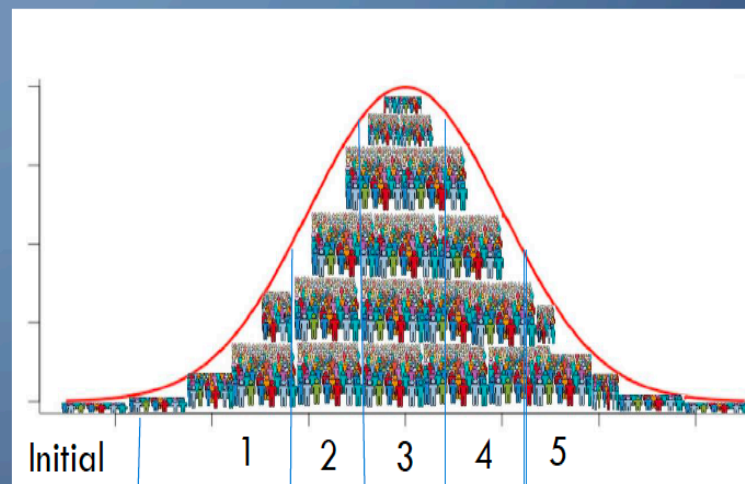
2. Levels are defined according to **CEFR standards**:

- English

# Italian and Mathematics Levels

Italian and Mathematics levels:

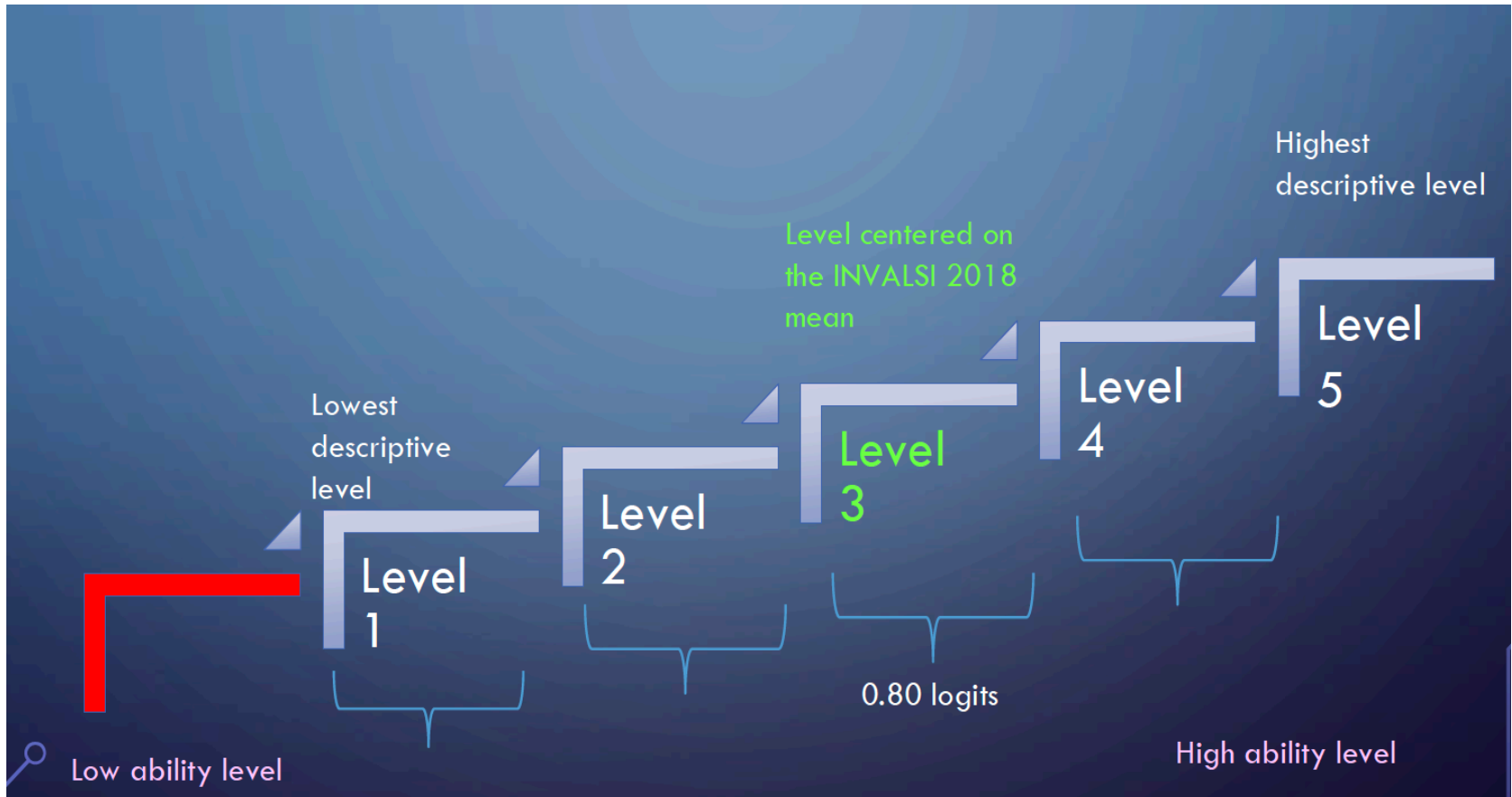
- Six levels, with thresholds identified on the basis of the distribution of the student's ability estimates of the INVALSI 2018 sample;
- Thresholds defined on the basis of some desirable properties for the levels, consistently with the standard setting procedures of international surveys



Low ability levels

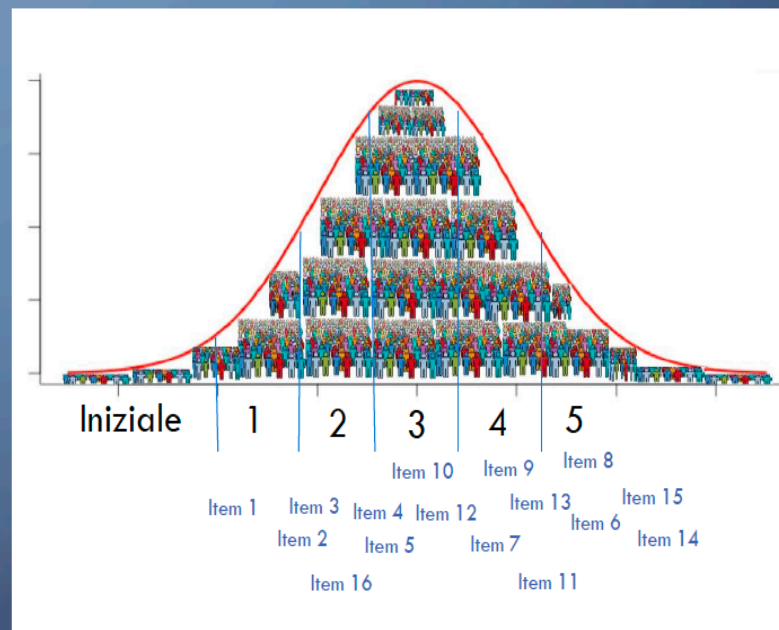
High ability levels

# Italian and Mathematics Levels (2)



# Italian and Mathematics Levels (3)

- ✓ All bank items are sorted by increasing difficulty;
- ✓ The description of the levels is based on the «descriptors» of the items mastered by the students (for each item, starting from the item «threshold» up to the threshold item of the next level)



# The *technical* description of the levels

## Phase 1

- The subject experts define for each item of the bank a descriptor and a macro-descriptor of the skills and knowledge required to respond correctly.
- A «theoretical» level of difficulty was indicated on the basis of the correspondence between item and descriptors produced by INVALSI in the longitudinal diachronic anchoring project of the paper and pencil tests;

## Phase 2

The level description has been defined on the basis of the descriptors of the items that the students of each level are able to master

# The wording of level descriptions

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Scientific correctness

Scientific community

Attention to the  
level **number**

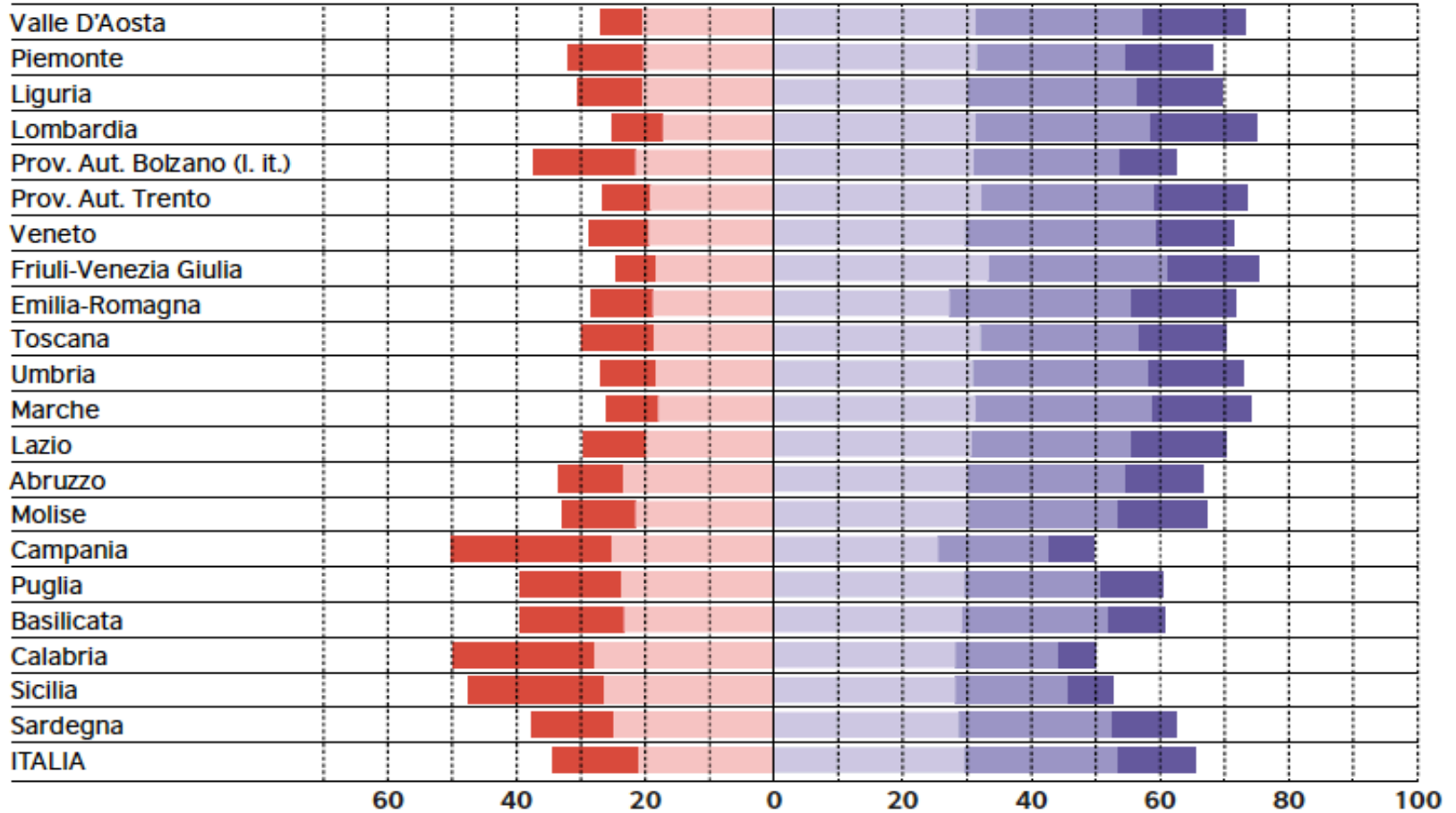
Accessibility

General public

Attention to the level  
**description**

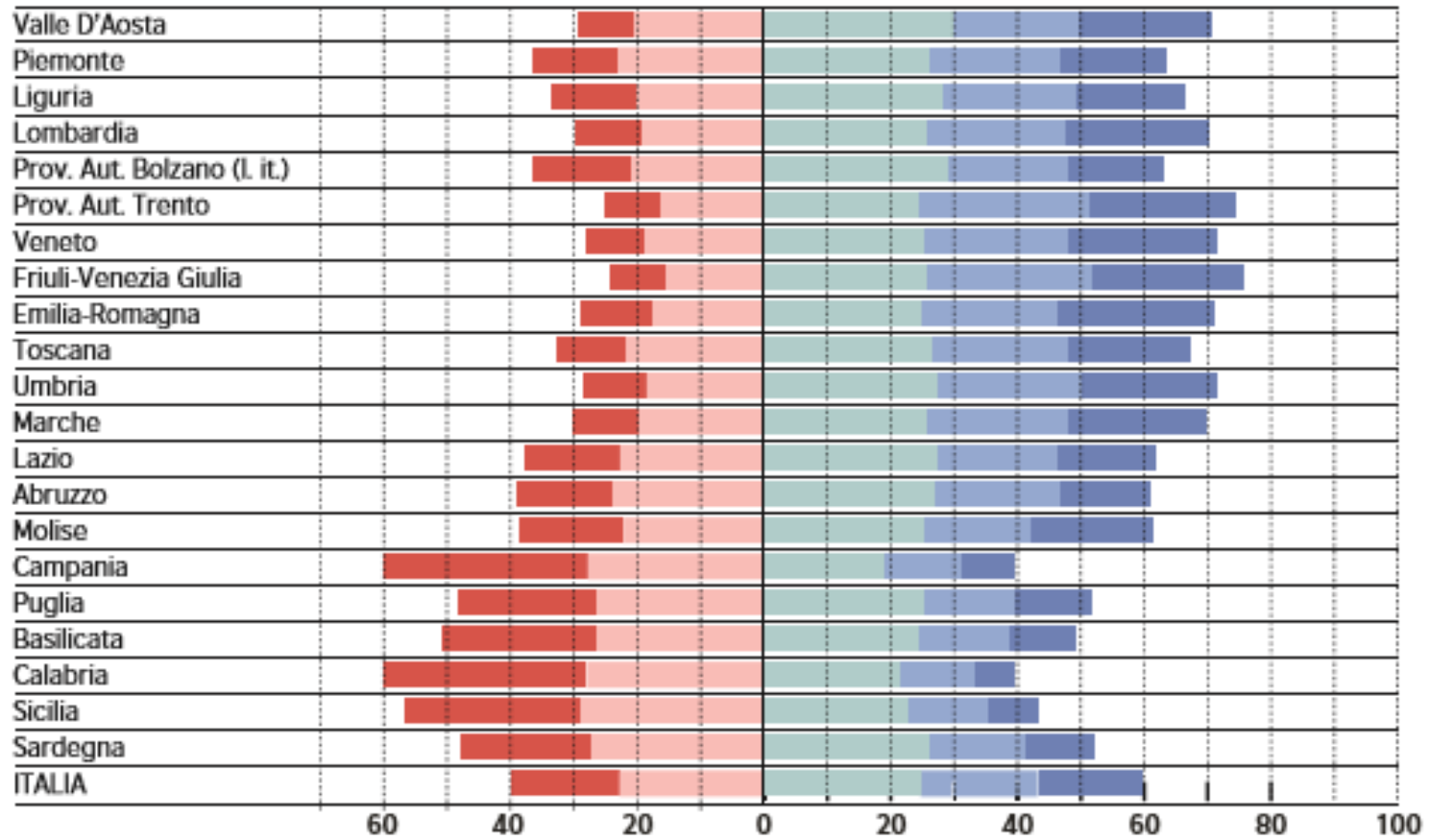
# Grade 8: ITALIAN

■ livello 1  
 ■ livello 2  
 ■ livello 3  
 ■ livello 4  
 ■ livello 5



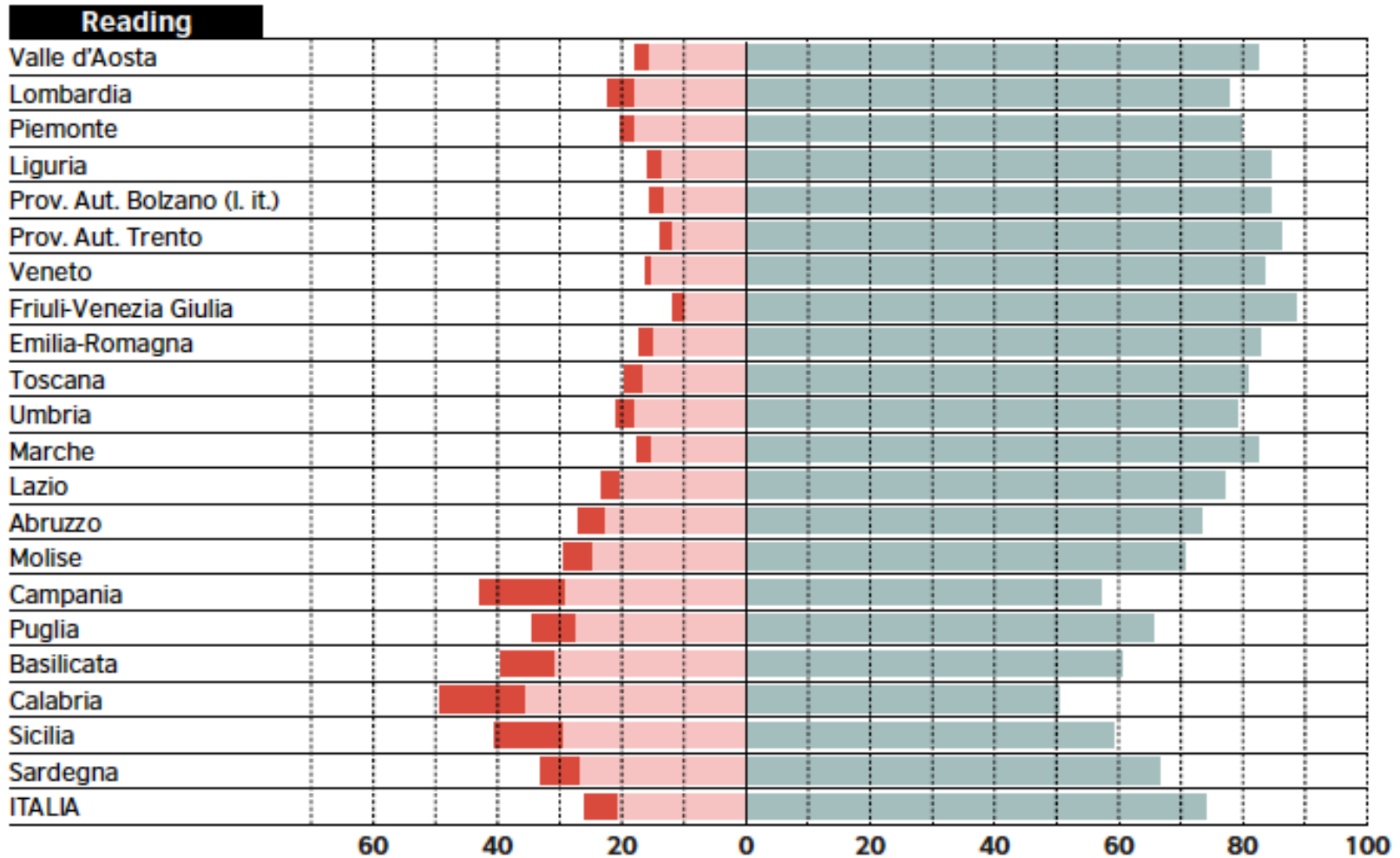
# Grade 8: MATHEMATICS

■ livello 1   
 ■ livello 2   
 ■ livello 3   
 ■ livello 4   
 ■ livello 5



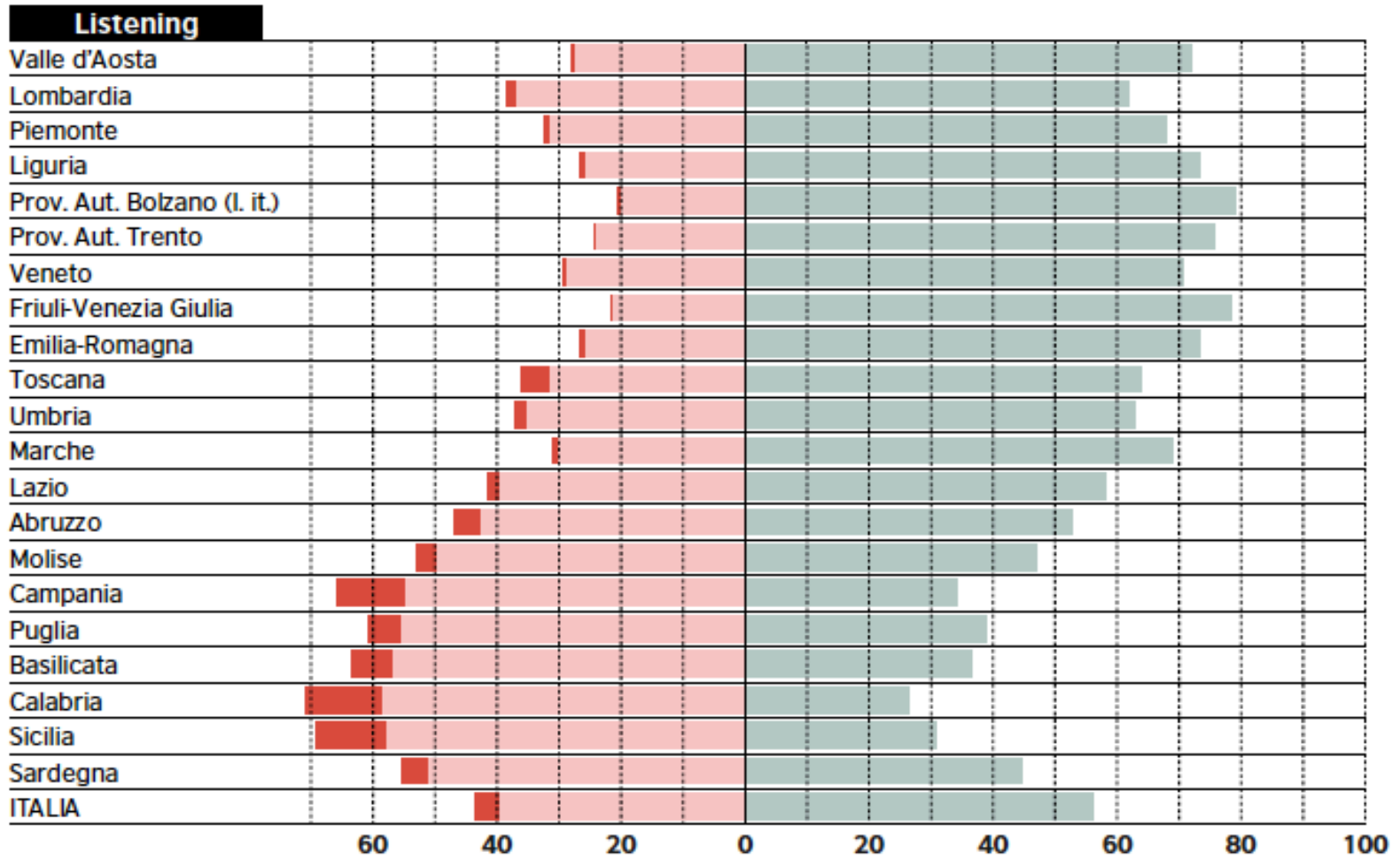
# Grade 8: ENGLISH - CEFR *reading*

■ Pre A1 ■ A1 ■ A2



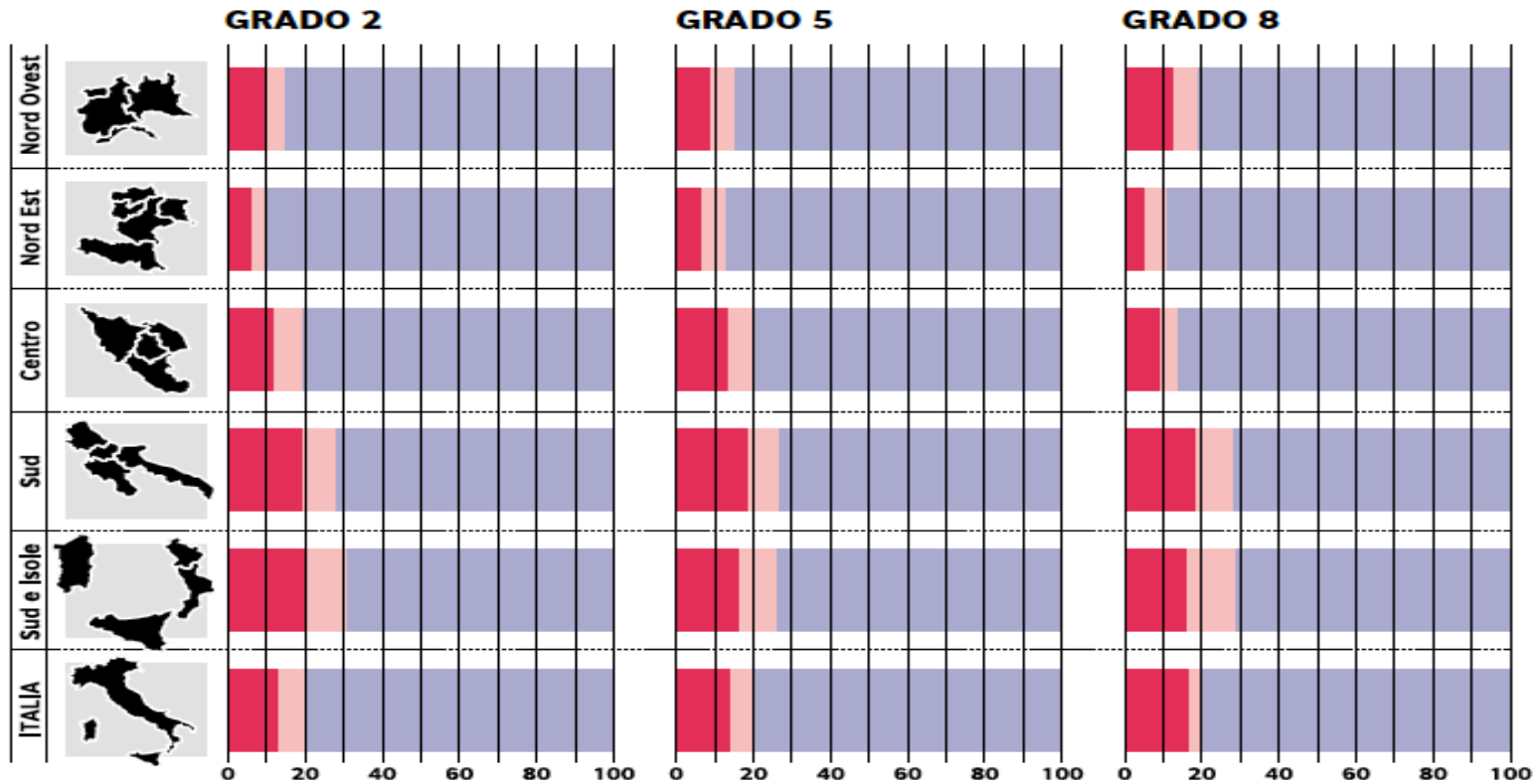
# Grade 8: ENGLISH - CEFR *listening*

■ Pre A1 ■ A1 ■ A2



# School equity- ITALIAN

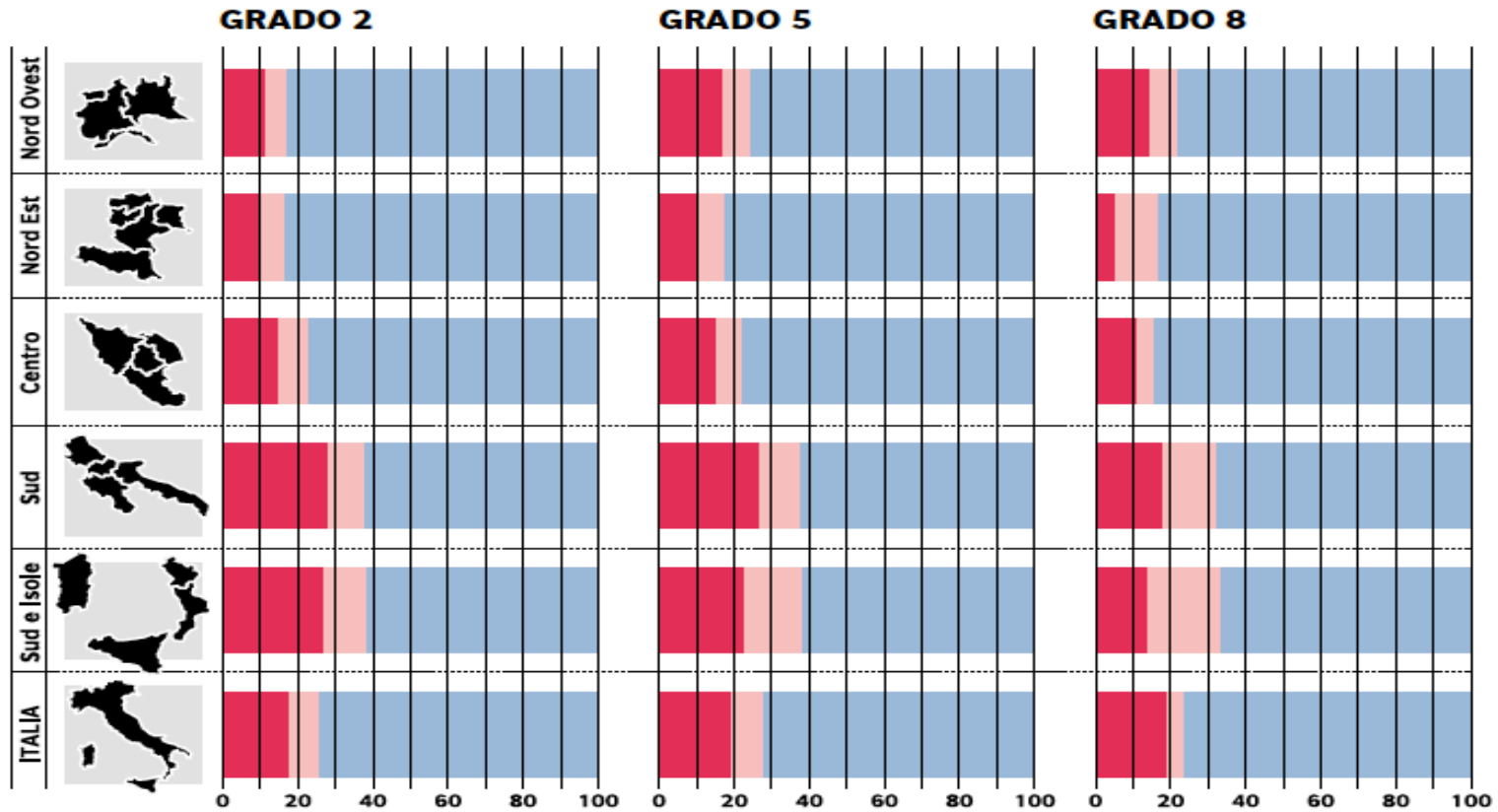
■ tra le scuole   
 ■ tra le classi   
 ■ tra gli alunni dentro le classi



**Graph legend (top):** *between schools (red), between classes (pink), between students within classes (light blue)*

# School equity- MATHEMATICS

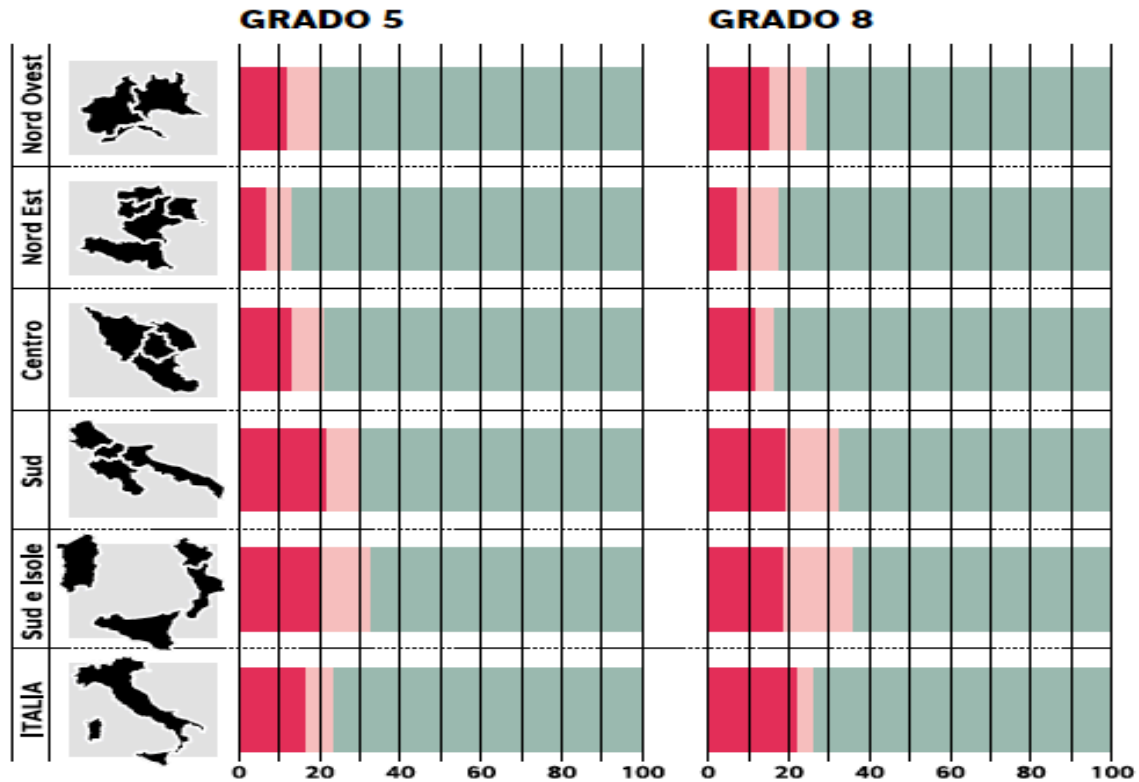
■ tra le scuole   
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**Graph legend (top):** *between schools (red), between classes (pink), between students within classes (light blue)*

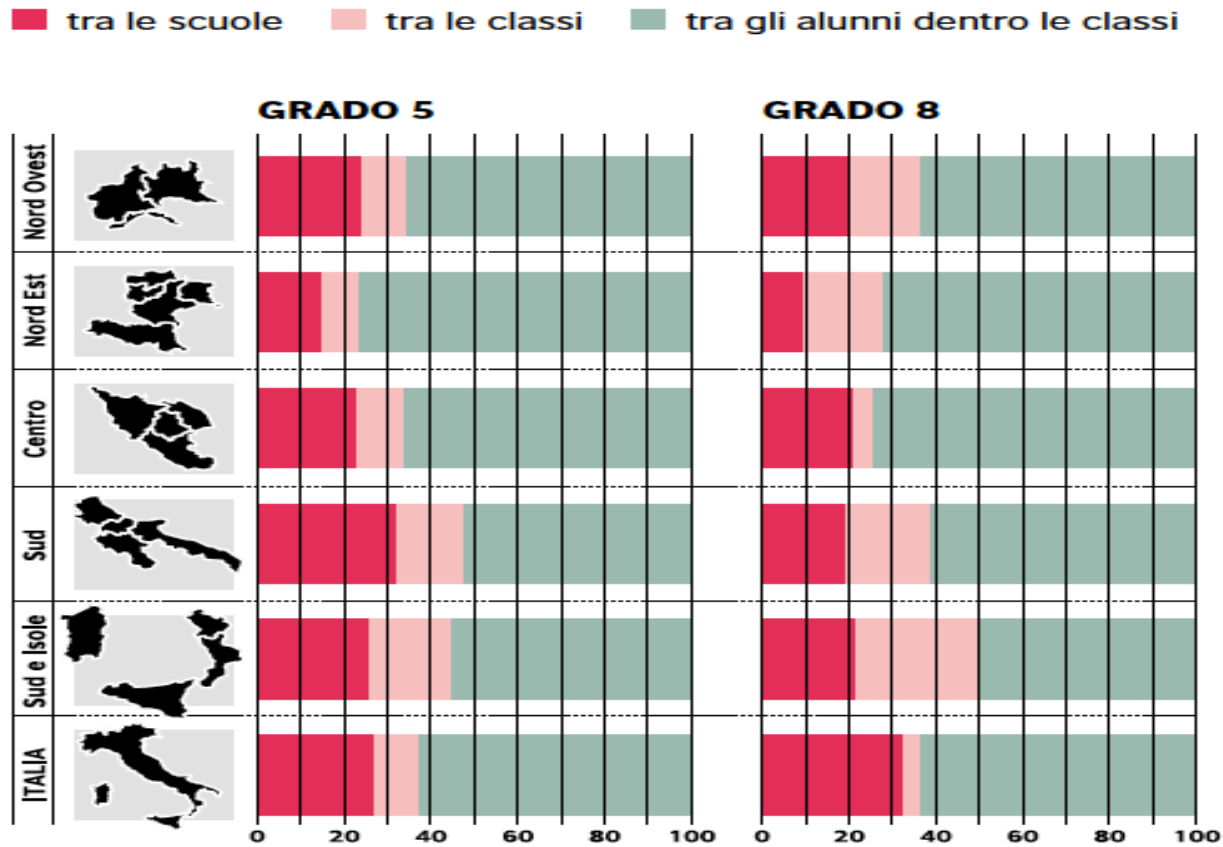
# School equity- ENGLISH (*reading*)

■ tra le scuole   
 ■ tra le classi   
 ■ tra gli alunni dentro le classi



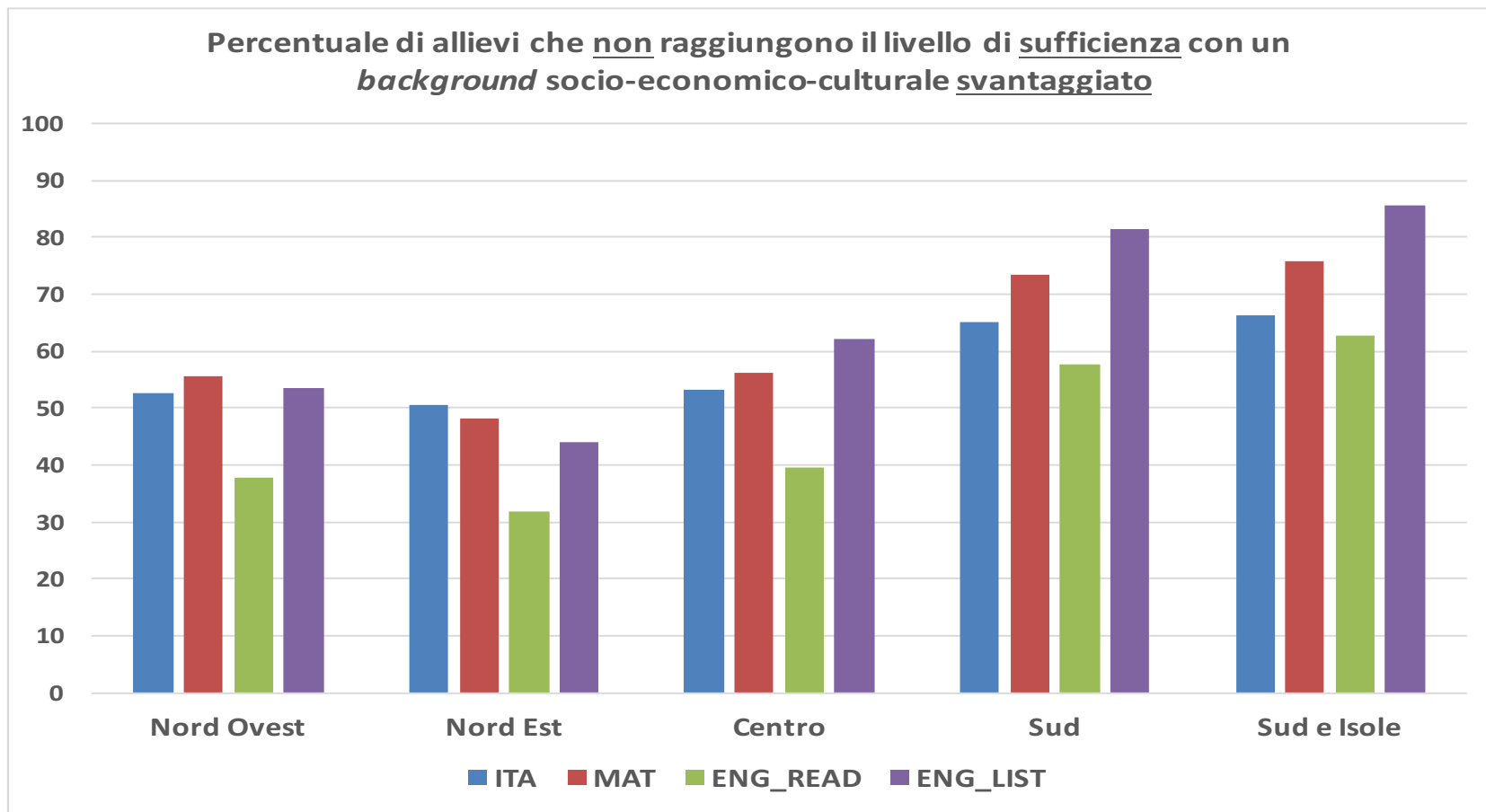
**Graph legend (top):** *between schools (red), between classes (pink), between students within classes (green)*

# School equity- ENGLISH (*listening*)



**Graph legend (top):** *between schools (red), between classes (pink), between students within classes (green)*

# The impact of the socio-economic-cultural background



**Title:** Percentage of students who do not reach a sufficient level with a disadvantaged socio-economic-cultural background

**Horizontal axis:** Italian macro-regions (North West, North East, Middle, South, South and Islands)

# The impact of the socio-economic-cultural background

		STATUS SOCIO-ECONOMICO-CULTURALE			
		BASSO	MEDIO-BASSO	MEDIO-ALTO	ALTO
ITALIANO	Liv. 1	28,5%	12,2%	7,2%	3,3%
	Liv. 2	29,7%	23,2%	19,0%	11,5%
	Liv. 3	26,4%	32,1%	31,7%	28,3%
	Liv. 4	11,9%	23,1%	27,9%	33,1%
	Liv. 5	3,5%	9,3%	14,1%	23,9%
MATEMATICA	Liv. 1	32,2%	17,6%	11,5%	6,2%
	Liv. 2	30,5%	25,0%	20,2%	14,2%
	Liv. 3	20,8%	26,2%	27,2%	24,8%
	Liv. 4	10,9%	17,7%	22,2%	24,4%
	Liv. 5	5,6%	13,5%	19,0%	30,4%

**First table row:** *socio-economic-cultural status*

**Second table row:** *(from left to right) low, middle-low, middle-high, high*

# The impact of the socio-economic-cultural background

		ITALIANO					MATEMATICA				
	ESCS	LIV. 1	LIV. 2	LIV. 3	LIV. 4	LIV. 5	LIV. 1	LIV. 2	LIV. 3	LIV. 4	LIV. 5
Nord ovest	BASSO	22,1%	30,6%	30,2%	12,5%	4,5%	25,4%	30,1%	25,3%	13,5%	5,6%
	MEDIO-BASSO	8,2%	19,2%	35,7%	26,0%	10,9%	12,0%	23,6%	28,2%	21,9%	14,3%
	MEDIO-ALTO	4,2%	17,0%	32,3%	30,0%	16,4%	7,2%	17,6%	27,6%	25,0%	22,7%
	ALTO	2,1%	7,9%	26,4%	34,6%	29,0%	3,2%	10,1%	23,4%	25,2%	38,1%
Nord est	BASSO	21,0%	29,6%	27,5%	17,9%	4,0%	20,6%	27,6%	23,7%	15,7%	12,4%
	MEDIO-BASSO	7,2%	22,2%	31,2%	28,2%	11,2%	10,1%	18,2%	28,2%	23,8%	19,7%
	MEDIO-ALTO	4,7%	14,8%	30,2%	32,8%	17,4%	6,0%	14,8%	26,1%	26,1%	27,0%
	ALTO	2,7%	9,6%	28,1%	35,0%	24,5%	3,5%	11,1%	22,3%	25,5%	37,5%
Centro	BASSO	23,5%	29,7%	29,8%	12,3%	4,5%	25,1%	31,1%	23,9%	13,5%	6,4%
	MEDIO-BASSO	9,8%	20,3%	33,7%	24,2%	12,0%	13,8%	24,6%	28,3%	17,9%	15,5%
	MEDIO-ALTO	5,5%	17,0%	32,1%	28,9%	16,5%	8,5%	18,5%	29,0%	23,1%	21,0%
	ALTO	2,0%	11,4%	29,7%	33,1%	23,8%	5,2%	14,5%	25,9%	25,9%	28,5%
Sud	BASSO	36,6%	28,6%	22,7%	9,7%	2,4%	42,1%	31,1%	16,6%	7,1%	3,0%
	MEDIO-BASSO	17,3%	26,8%	29,8%	19,3%	6,8%	24,9%	28,0%	23,8%	12,4%	11,0%
	MEDIO-ALTO	12,3%	22,2%	31,3%	24,1%	10,0%	19,8%	26,2%	25,2%	17,0%	11,8%
	ALTO	4,5%	15,1%	27,9%	30,8%	21,6%	10,1%	18,1%	25,1%	24,1%	22,6%
Sud e isole	BASSO	36,0%	30,4%	22,8%	8,4%	2,4%	43,3%	32,5%	15,7%	6,4%	2,1%
	MEDIO-BASSO	20,1%	29,0%	28,8%	16,8%	5,3%	29,4%	31,2%	21,8%	10,9%	6,6%
	MEDIO-ALTO	11,4%	26,3%	32,5%	21,6%	8,3%	19,4%	26,0%	27,8%	17,7%	9,1%
	ALTO	7,0%	17,2%	30,5%	30,0%	15,4%	12,6%	21,6%	28,7%	19,8%	17,3%

**First table column (left):** *Italian macro-regions (North West, North East, Middle, South, South and Islands)*

**Second table column (left):** *low, middle-low, middle-high, high*

		STATUS SOCIO-ECONOMICO-CULTURALE			
		BASSO	MEDIO-BASSO	MEDIO-ALTO	ALTO
READ	pre-A1	12,9%	4,5%	2,8%	1,0%
	A1	33,8%	21,6%	16,2%	9,1%
	A2	53,2%	73,9%	80,9%	89,9%
LIST	pre-A1	9,8%	4,0%	2,1%	0,9%
	A1	56,6%	43,1%	34,7%	20,8%
	A2	33,3%	52,7%	63,0%	78,2%

**First table row:** *socio-economic-cultural status*

**Second table row:** *(from left to right) low, middle-low, middle-high, high*

# The impact of the socio-economic-cultural background

	ESCS	READING			LISTENING		
		pre-A1	A1	A2	pre-A1	A1	A2
Nord ovest	Basso	8,5%	29,3%	62,2%	2,8%	50,7%	46,3%
	Medio-basso	1,7%	14,2%	84,1%	0,4%	31,7%	67,9%
	Medio-alto	0,8%	13,0%	86,3%	0,6%	25,9%	73,4%
	Alto	0,1%	4,9%	95,0%	0,3%	10,6%	89,2%
Nord est	Basso	3,6%	28,2%	68,2%	1,4%	42,7%	55,9%
	Medio-basso	1,8%	13,9%	84,3%	0,9%	29,2%	69,7%
	Medio-alto	0,8%	9,8%	89,4%	0,3%	21,1%	78,6%
	Alto	0,3%	5,4%	94,3%	0,3%	12,0%	87,7%
Centro	Basso	8,9%	30,8%	60,2%	9,1%	53,1%	37,2%
	Medio-basso	1,8%	20,6%	77,5%	1,8%	39,0%	59,1%
	Medio-alto	1,1%	13,2%	85,7%	0,7%	30,9%	68,2%
	Alto	0,6%	9,1%	90,3%	0,3%	21,2%	78,5%
Sud	Basso	19,8%	37,8%	42,4%	15,2%	66,1%	18,3%
	Medio-basso	7,6%	29,8%	62,6%	7,6%	58,6%	33,6%
	Medio-alto	6,5%	23,3%	70,2%	4,5%	47,5%	47,7%
	Alto	2,1%	12,2%	85,6%	2,0%	30,9%	67,1%
Sud e isole	Basso	20,9%	41,8%	37,2%	19,3%	66,4%	13,7%
	Medio-basso	10,8%	32,5%	56,7%	10,8%	60,5%	27,6%
	Medio-alto	6,5%	25,0%	68,4%	5,2%	55,8%	38,2%
	Alto	3,1%	18,6%	78,3%	2,8%	40,8%	55,7%

**First table column (left):** *Italian macro-regions (North West, North East, Middle, South, South and Islands)*

**Second table column (left):** *low, middle-low, middle-high, high*

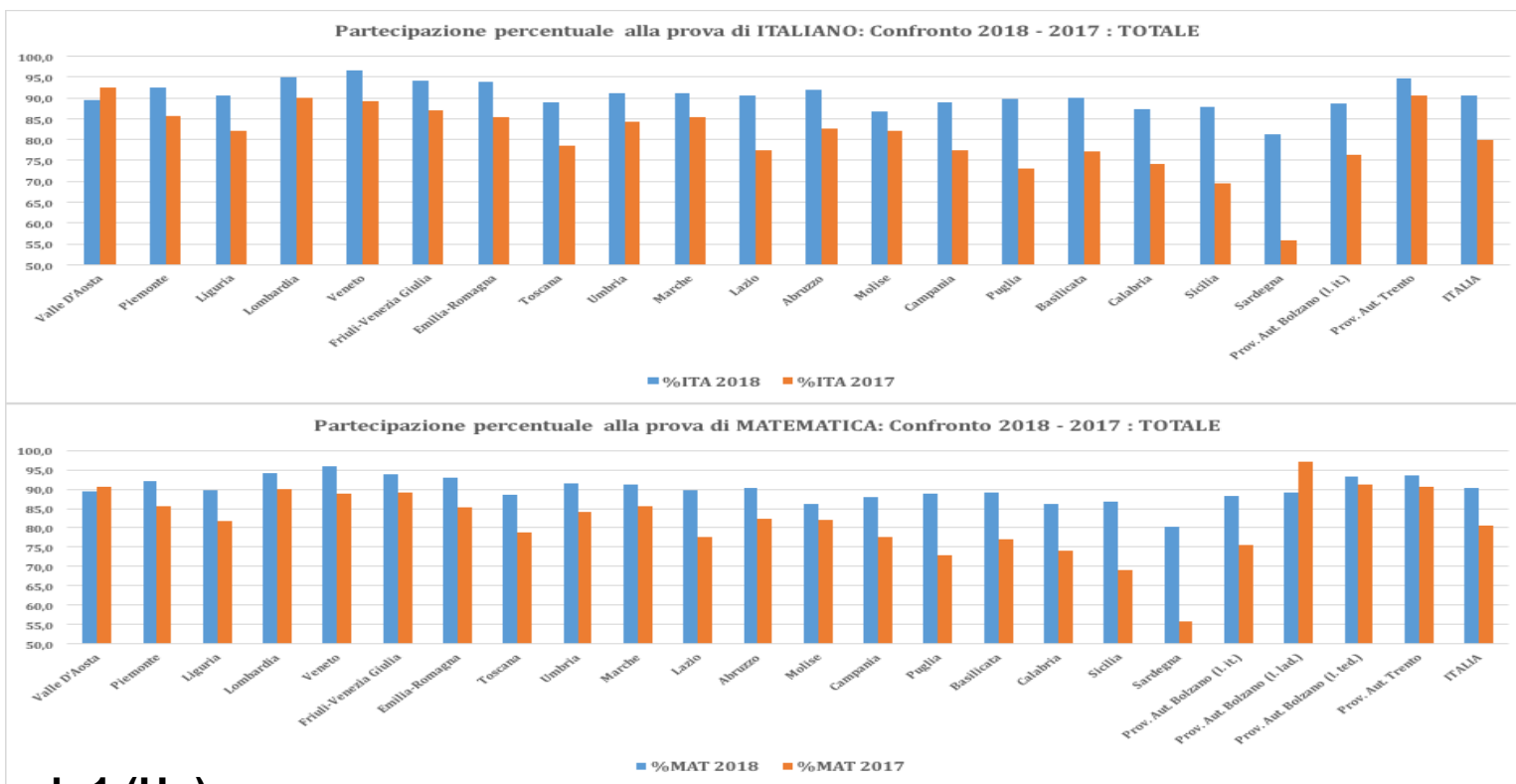
## Grade 8 results in brief

- At national level, students who achieve **sufficient or higher** results are:
  - ✓ ITALIAN: 65.6 %
  - ✓ MATHEMATICS: 59.9 %
  - ✓ ENGLISH-READING (CEFR A2): 73.9 %
  - ✓ ENGLISH-LISTENING (CEFR A2): 56.1 %
- in some regions of Southern Italy (in particular Campania, Calabria, Sicily and Sardinia) there is a greater number of students with **very low levels of results**
- strong indications of **educational inequality** in the regions of the South both in terms of the school's different ability **to mitigate the effect of socio-economic-cultural differences between schools and between classes**

# The results of the INVALSI 2018 tests

## - Upper secondary school -

# Participation (in general)



**Graph 1 (Up)**

**Title:** Percentage participation in the ITALIAN test, comparison 2017 - 2018: TOTAL

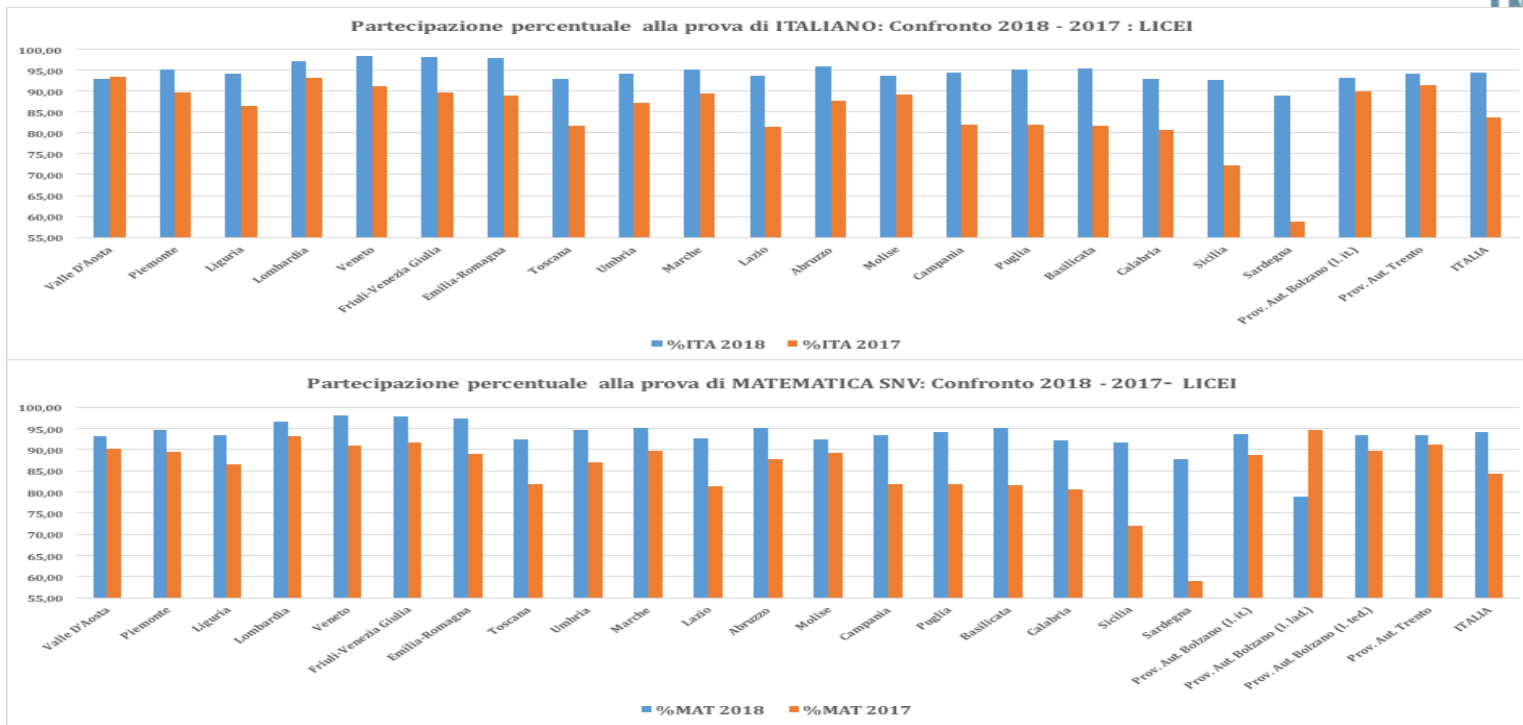
**Horizontal axis:** Italian regions

**Graph 2 (Bottom)**

**Title:** Percentage participation in the MATHEMATICS test, comparison 2017 - 2018: TOTAL

**Horizontal axis:** Italian regions

# Participation (academic schools)



**Graph 1 (Up)**

**Title:** Percentage participation in the ITALIAN test, comparison 2017 - 2018: TOTAL

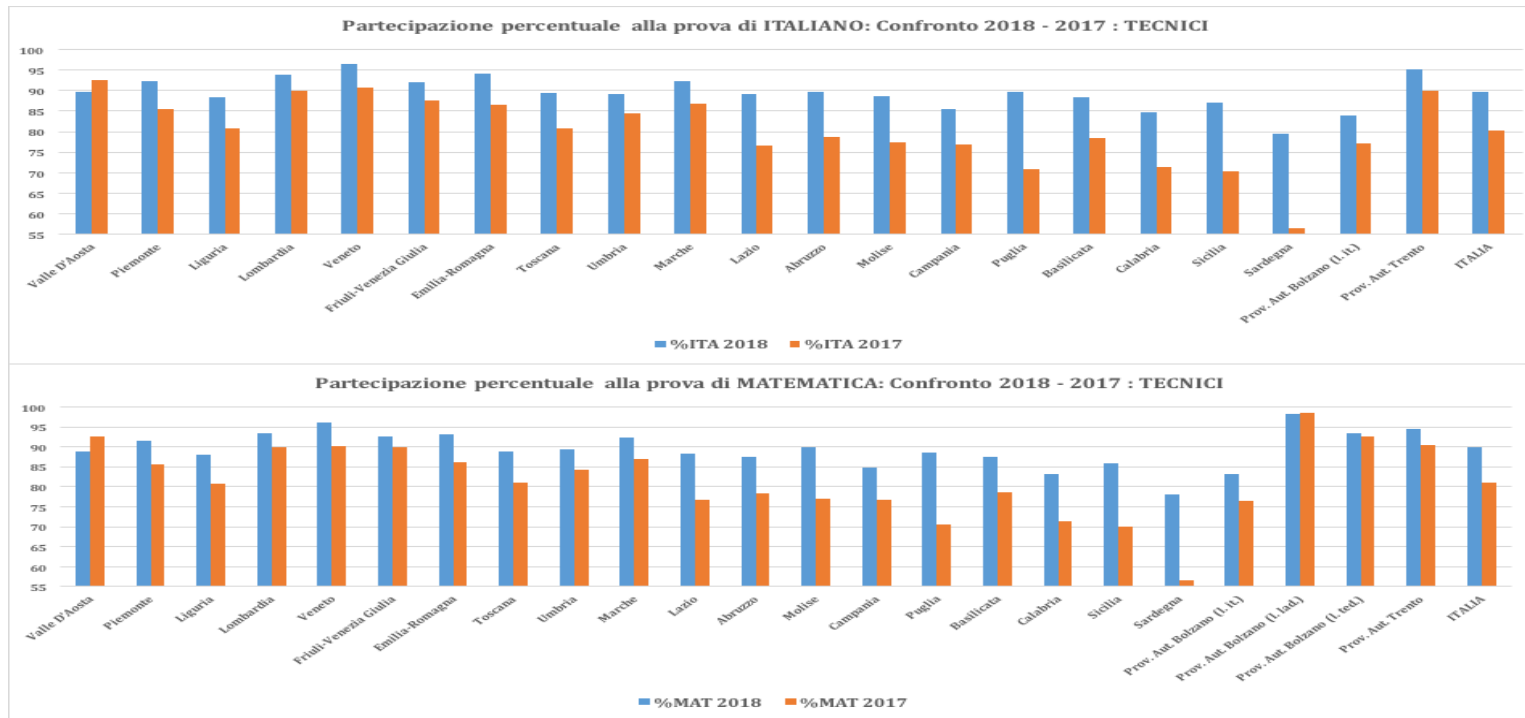
**Horizontal axis:** Italian regions

**Graph 2 (Bottom)**

**Title:** Percentage participation in the MATHEMATICS test, comparison 2017 - 2018: TOTAL

**Horizontal axis:** Italian regions

# Participation (technical schools)



**Graph 1 (Up)**

**Title:** Percentage participation in the ITALIAN test, comparison 2017 - 2018: TOTAL

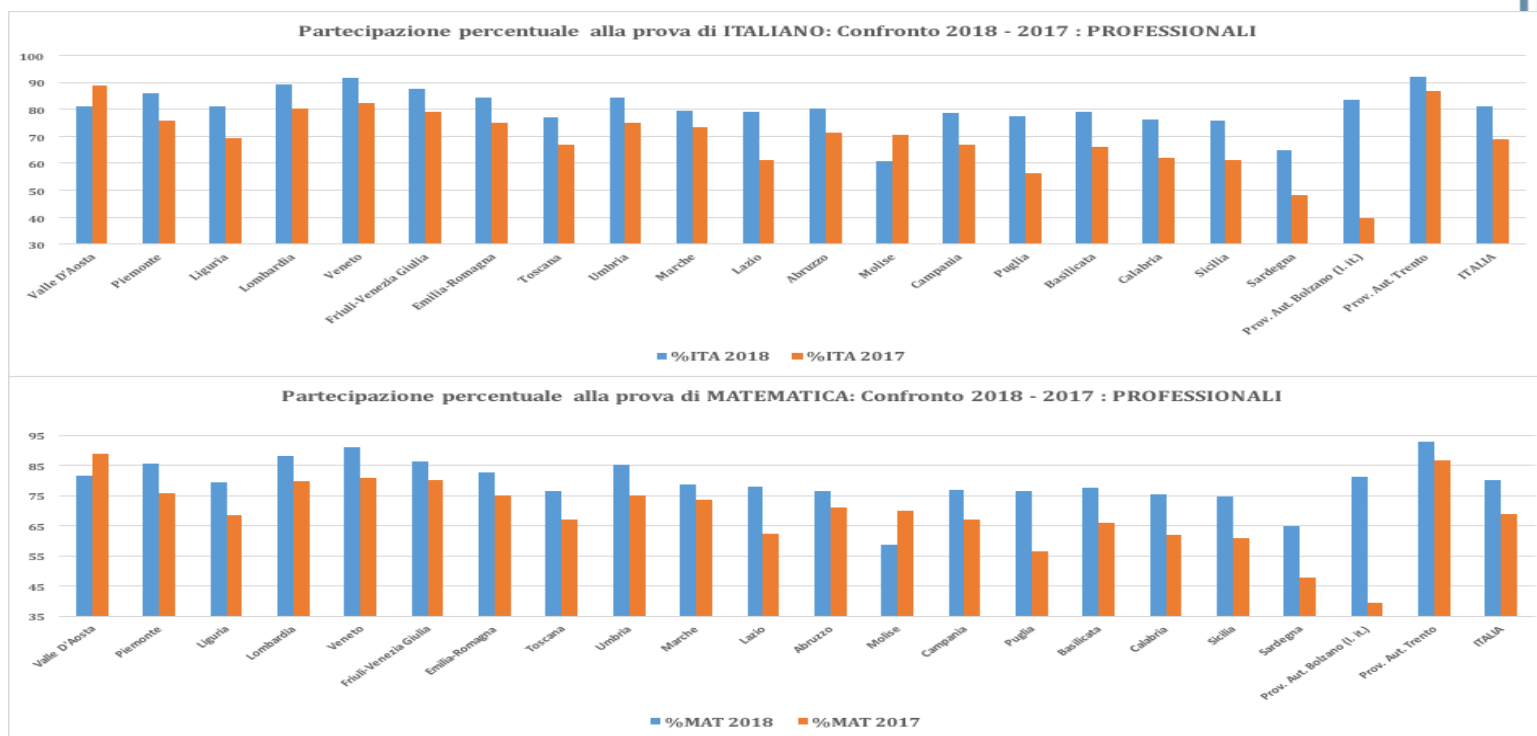
**Horizontal axis:** Italian regions

**Graph 2 (Bottom)**

**Title:** Percentage participation in the MATHEMATICS test, comparison 2017 - 2018: TOTAL

**Horizontal axis:** Italian regions

# Participation (vocational schools)



**Graph 1 (Up)**

**Title:** *Percentage participation in the ITALIAN test, comparison 2017 - 2018: TOTAL*

**Horizontal axis:** *Italian regions*

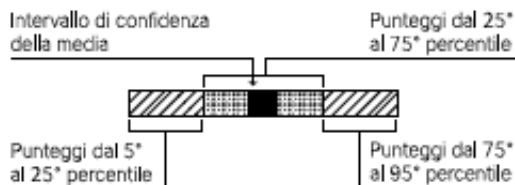
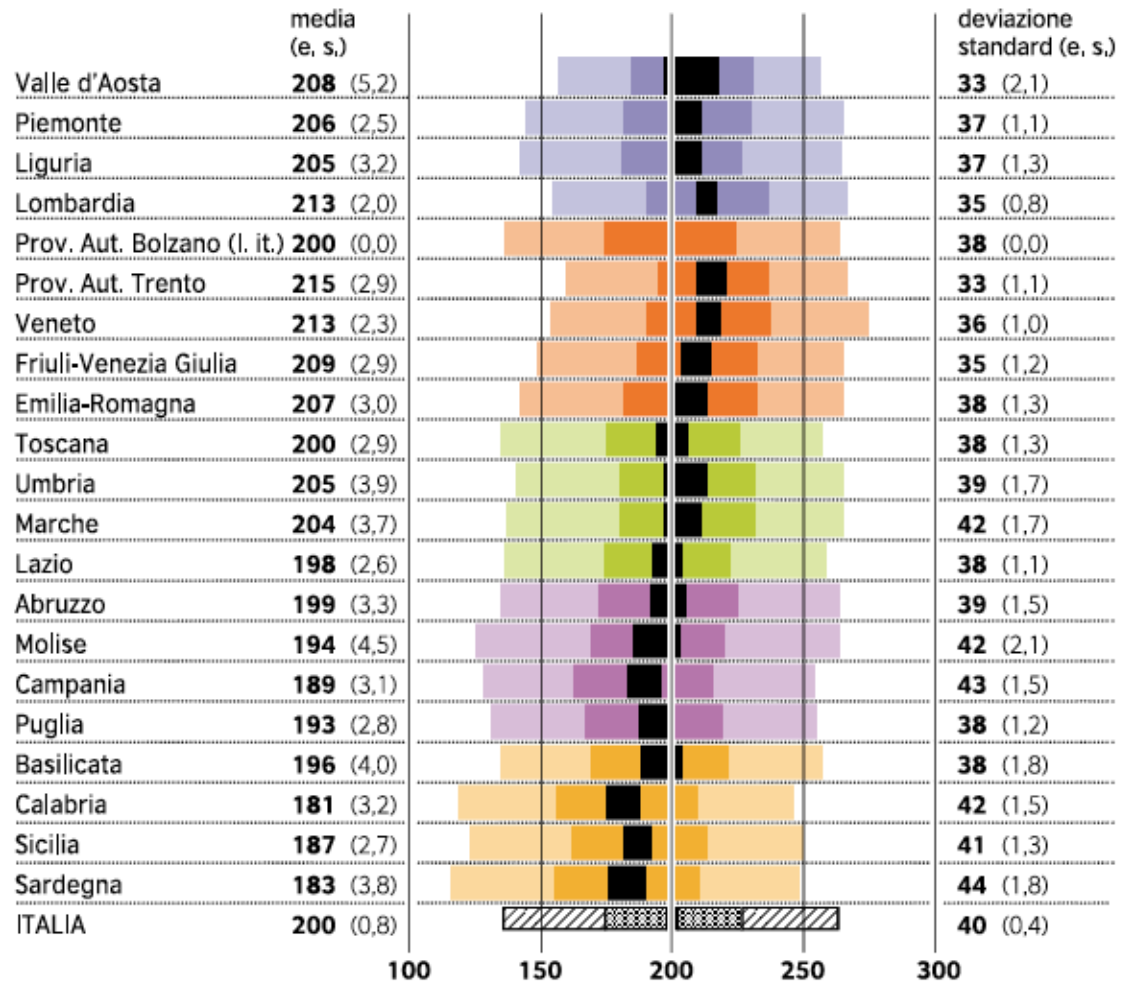
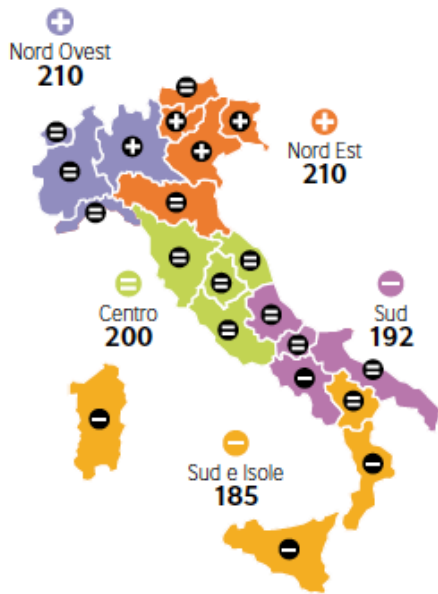
**Graph 2 (Bottom)**

**Title:** *Percentage participation in the MATHEMATICS test, comparison 2017 - 2018: TOTAL*

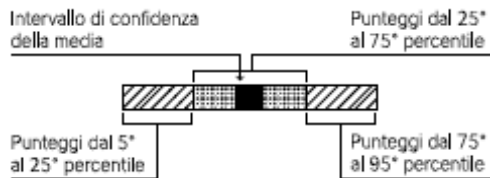
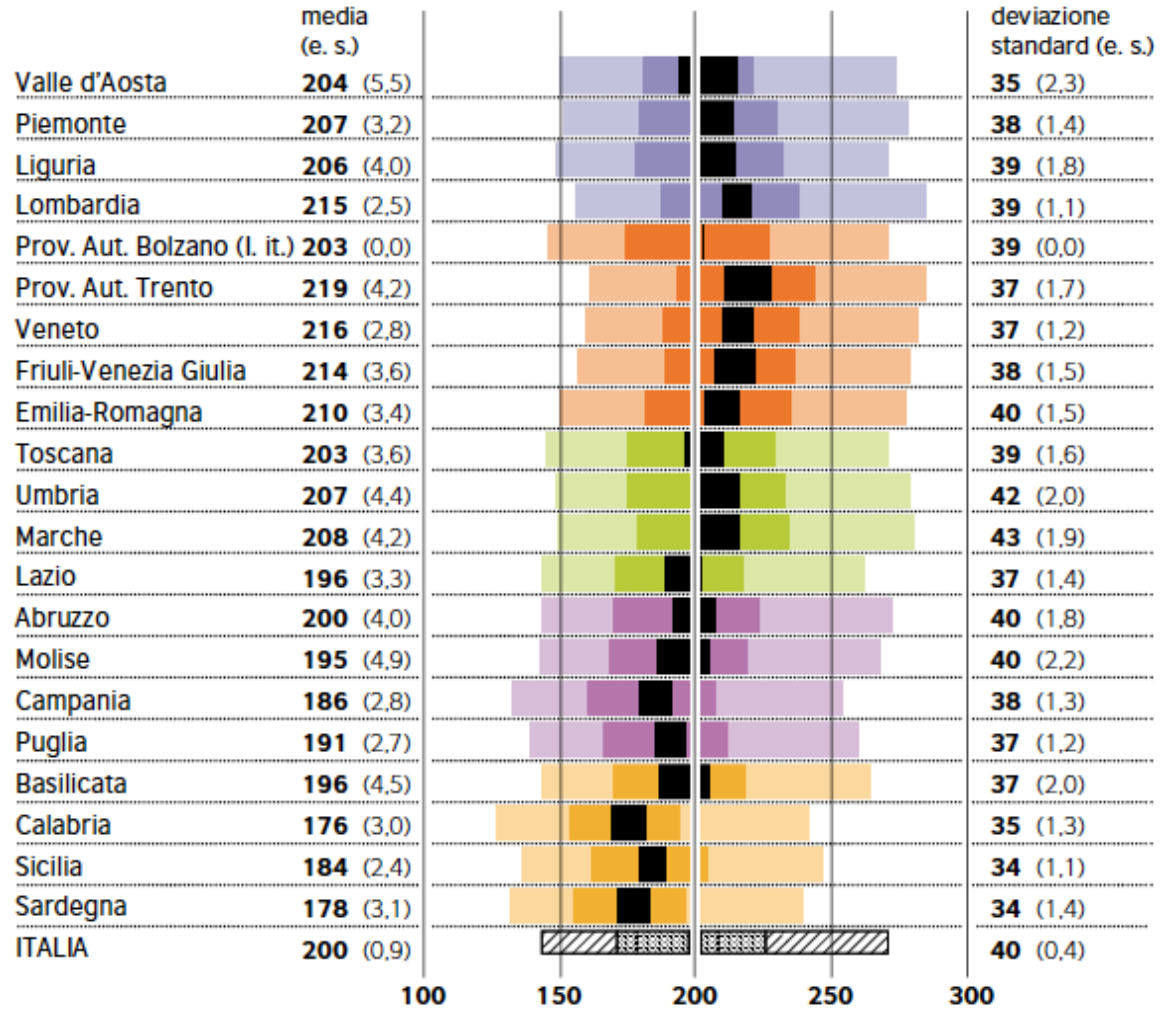
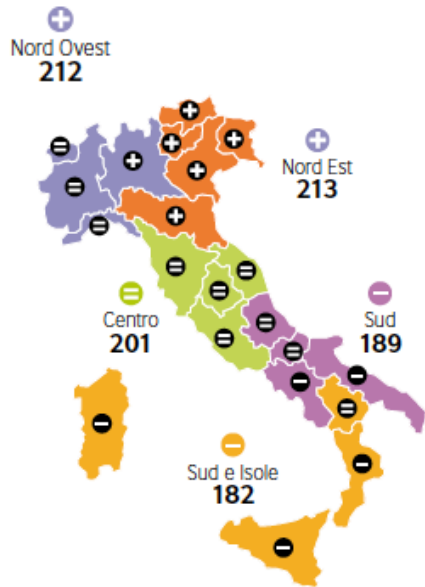
**Horizontal axis:** *Italian regions*

# Grade 10: ITALIAN

ROMA – 5 July 2018

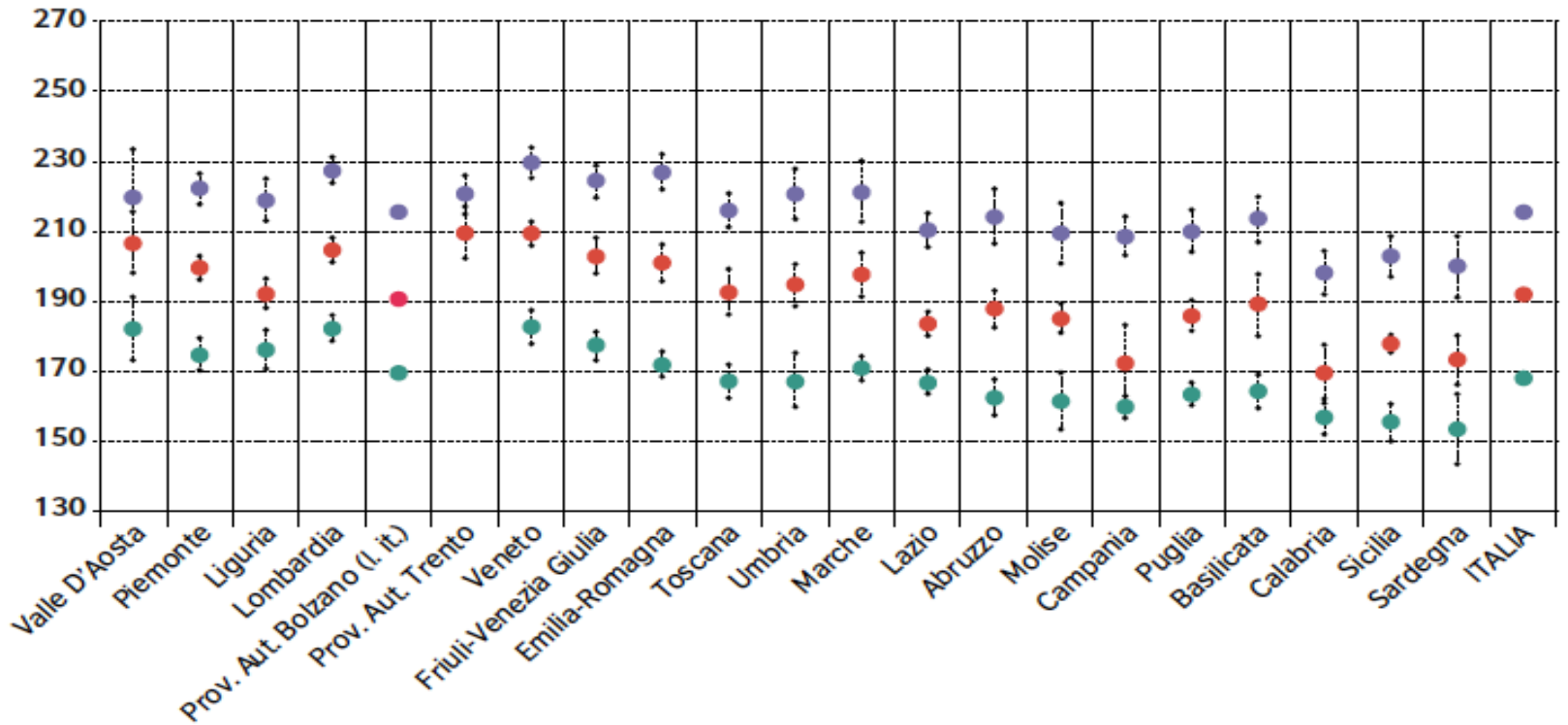


# Grade 10: MATHEMATICS



# Grade 10: ITALIAN (tracks)

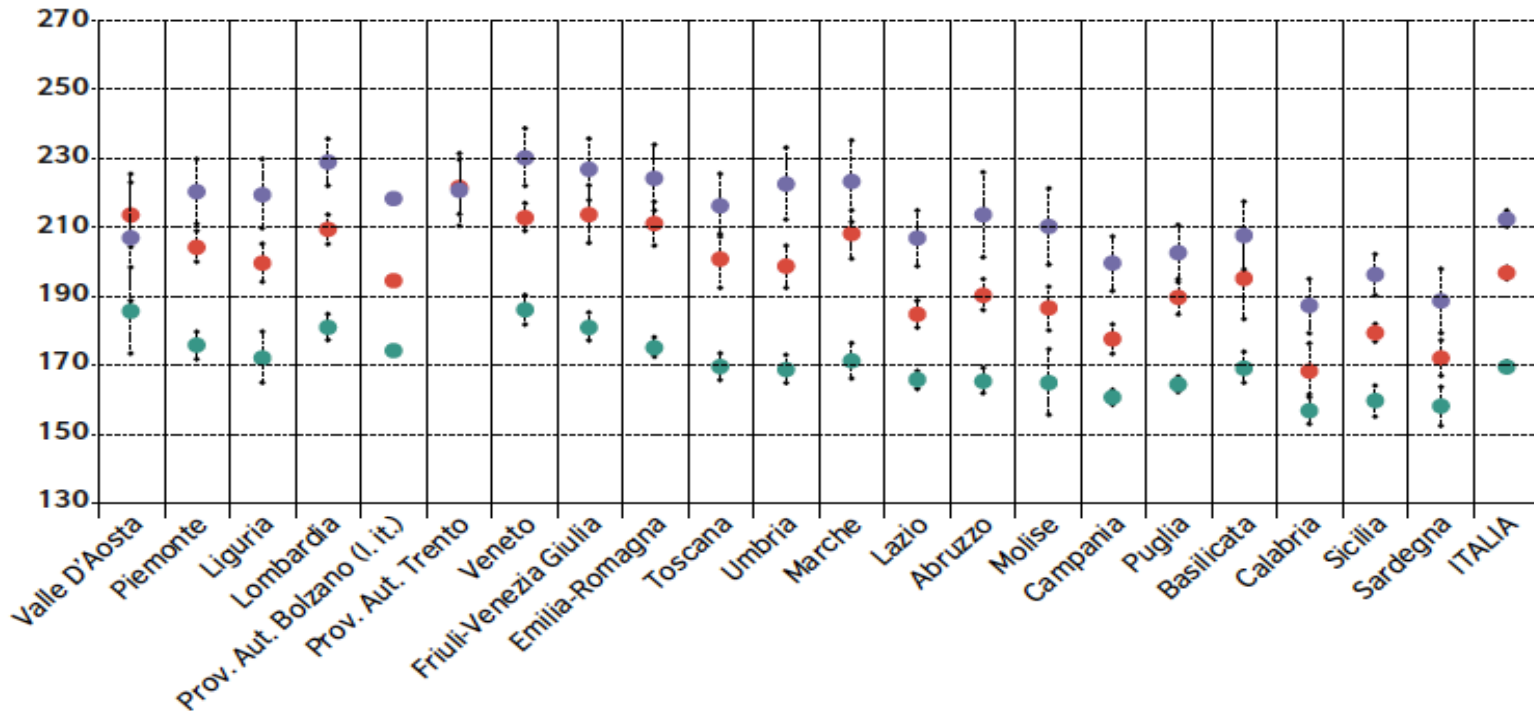
■ Media Italiano Licei   
 ■ Media Italiano Tecnici   
 ■ Media Italiano Professionali



**Graph legend (top):** Average in Italian Academic schools (purple), Average in Italian Technical schools (red), Average in Italian Vocational schools (light green)

# Grade 10: MATHEMATICS (tracks)

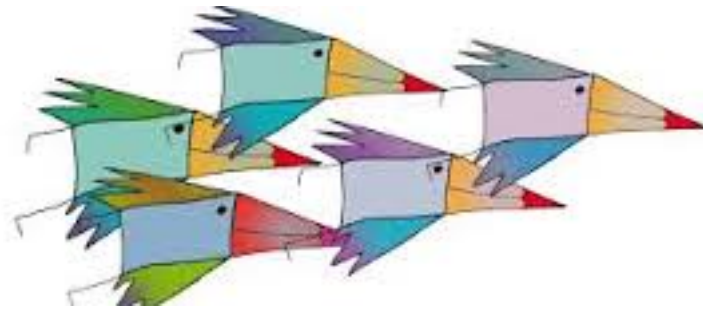
■ Media Matematica Licei  
 ■ Media Matematica Tecnici  
 ■ Media Matematica Professionali



**Graph legend (top):** Average in Italian Academic schools (purple), Average in Italian Technical schools (red), Average in Italian Vocational schools (light green)

## Grade 10 results in brief

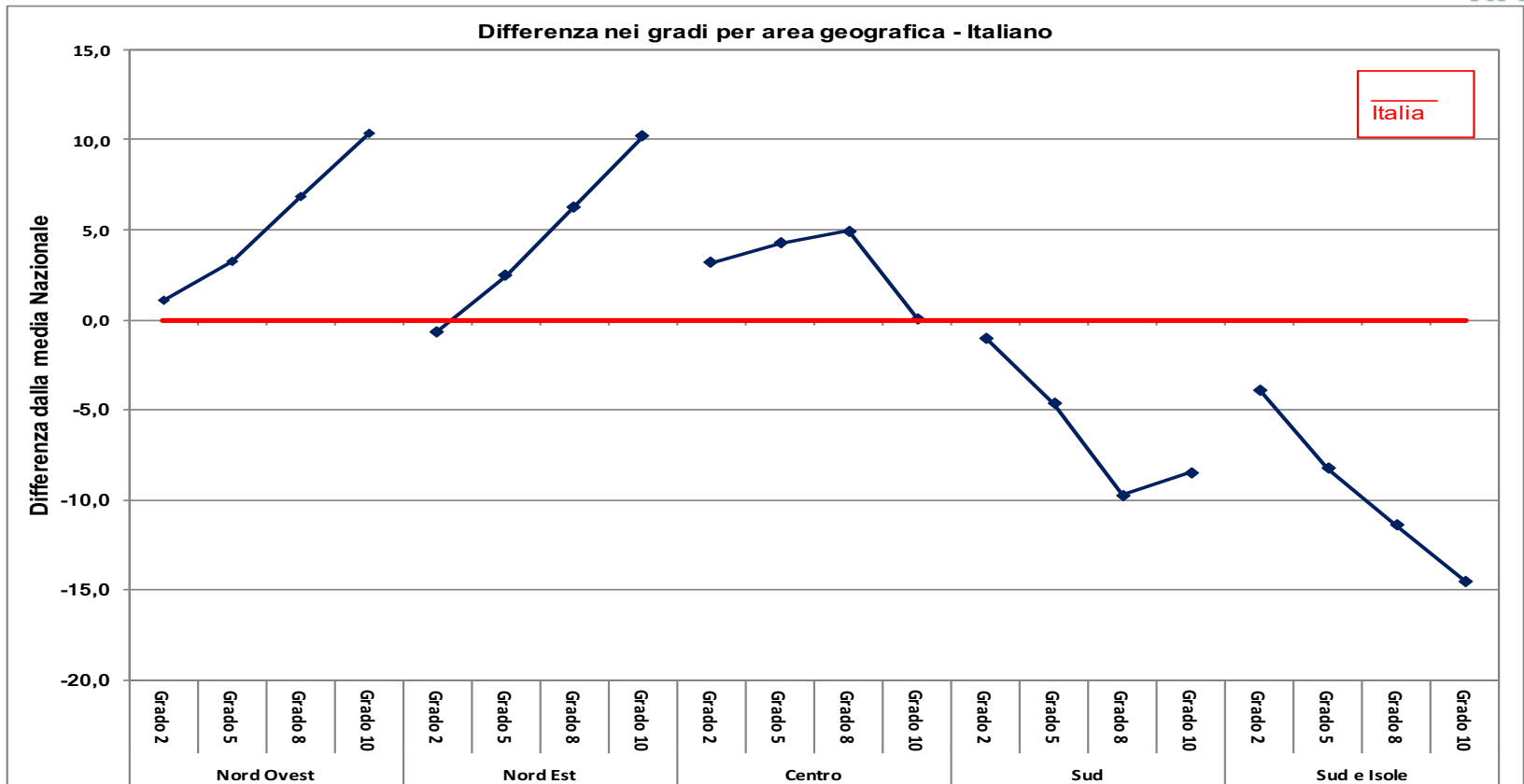
- The CBT administration determined a **strong increase in test participation**, in all the regions, especially in the technical-professional tracks
- The **differences between regions are worsening** and in the regions of the South the differences increase compared to the North
- In the North the Mathematics results of **technical schools** are very good, comparable to those of academic schools
- The greatest difficulties are in **Mathematics**, especially in southern Italy



## Overall results

- *Geographical differences* -

# Results by grades and geographical areas: ITALIAN



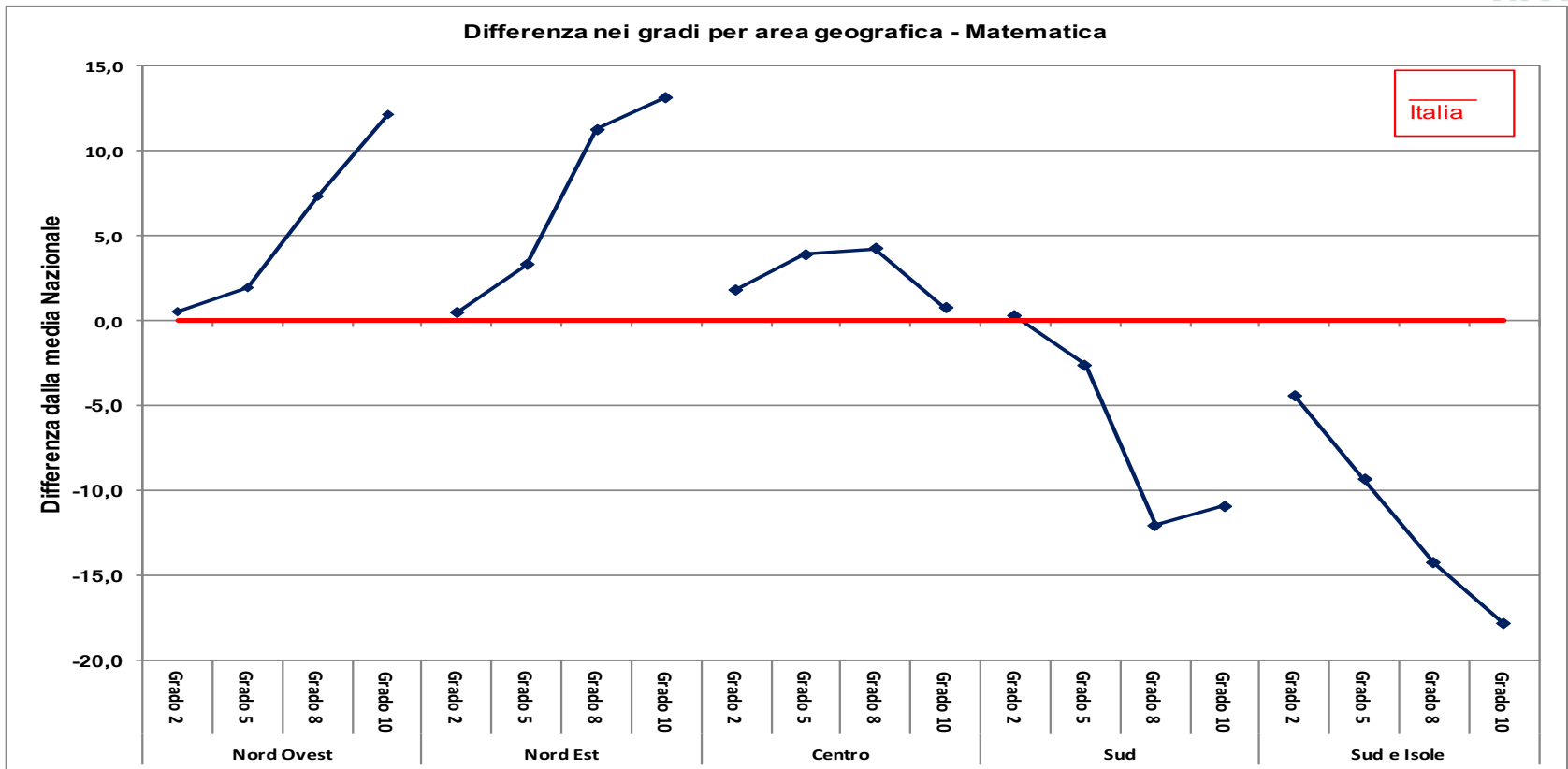
**Title:** Differences by grades and geographical areas - Italian

**Vertical axis:** Difference from the national average

**Horizontal axis:** Grades by macro-regions (North West, North East, Middle, South, South and Islands)

**Red line:** Italy

# Results by grades and geographical areas: MATHEMATICS



**Title:** Differences by grades and geographical areas - Italian

**Vertical axis:** Difference from the national average

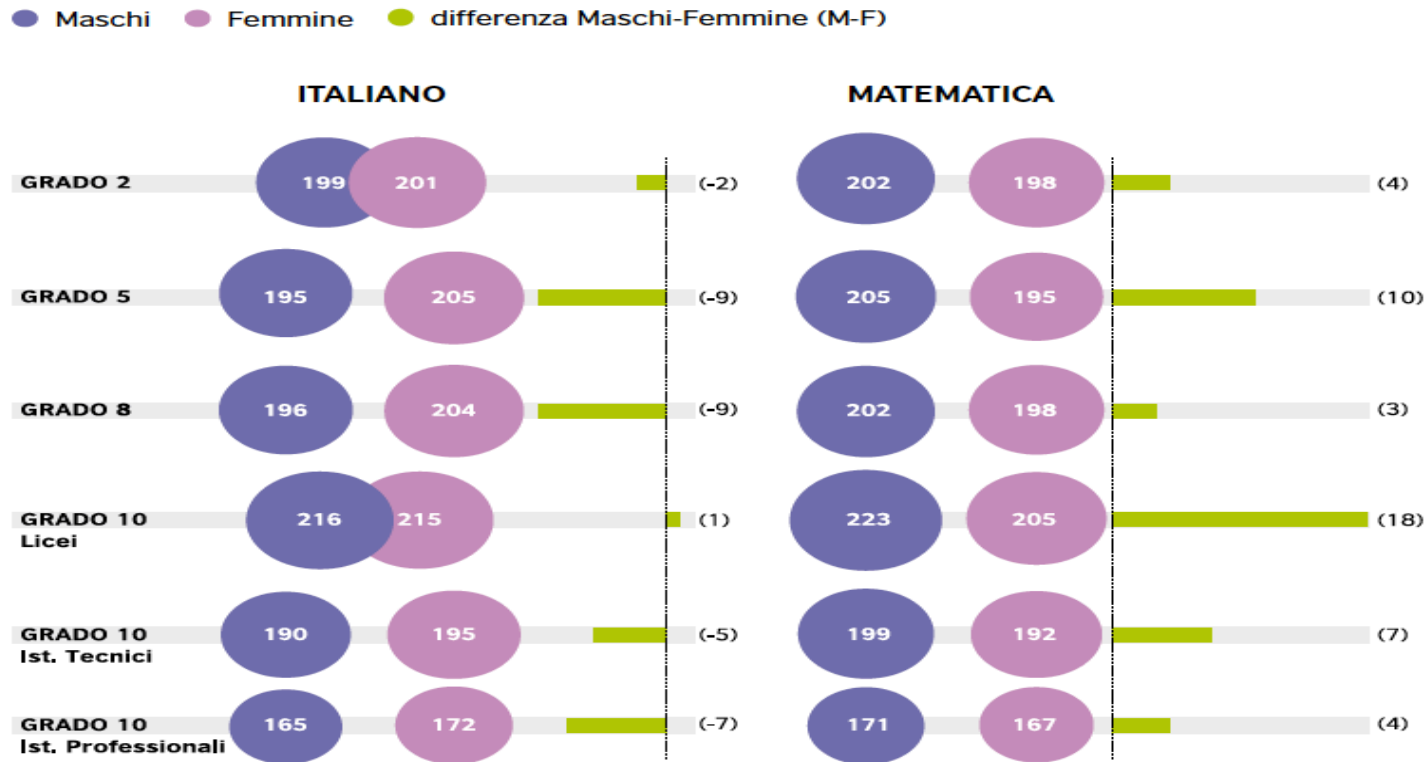
**Horizontal axis:** Grades by macro-regions (North West, North East, Middle, South, South and Islands)

**Red line:** Italy

# Overall results

- *Gender gap* -

# Gender gaps in Italian and Mathematics



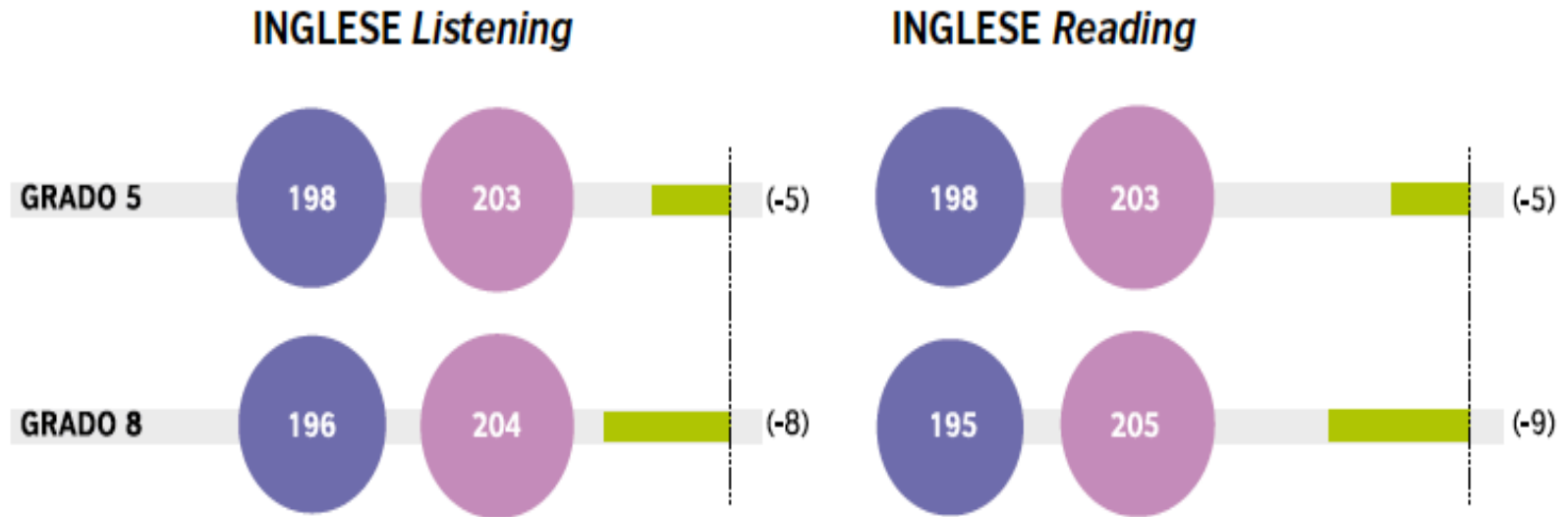
**Graph legend (top):** Male (purple), Female (pink), difference between Male and Female (green)

**Graph legend (left – bottom-down):** Grade 2, Grade 5, Grade 8, Grade 10 academic, Grade 10 technical, Grade 10 vocational

**Circle position:** if circles are not overlapped the difference is statistically significant, otherwise the difference is not statistically significant

# Gender gaps in English

● Maschi ● Femmine ● differenza Maschi-Femmine (M-F)



**Graph legend (top):** Male (purple), Female (pink), difference between Male and Female (green)

**Graph legend (left – bottom-down):** Grade 2, Grade 5, Grade 8, Grade 10 academic, Grade 10 technical, Grade 10 vocational

**Circle position:** if circles are not overlapped the difference is statistically significant, otherwise the difference is not statistically significant

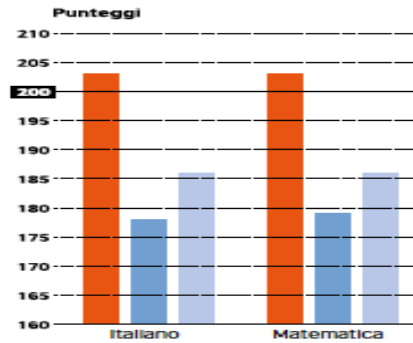
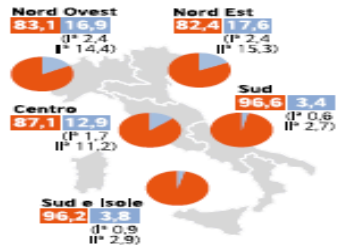
# Overall results

*- Immigrants -*

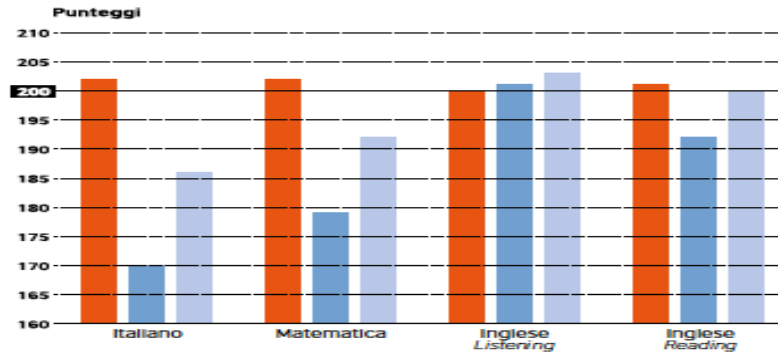
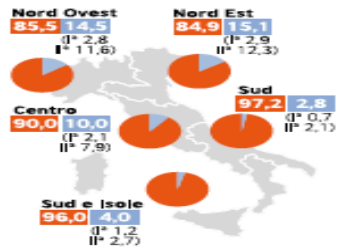
# Differences based on Italian or foreign origin (grade 2 and grade 5)

■ Italiani   
 ■ Immigrati I<sup>a</sup> generazione   
 ■ Immigrati II<sup>a</sup> generazione

## GRADO 2



## GRADO 5



**Graph legend (top):** Italian (orange), Immigrant – first generation (blue), Immigrant – second generation (light blue)

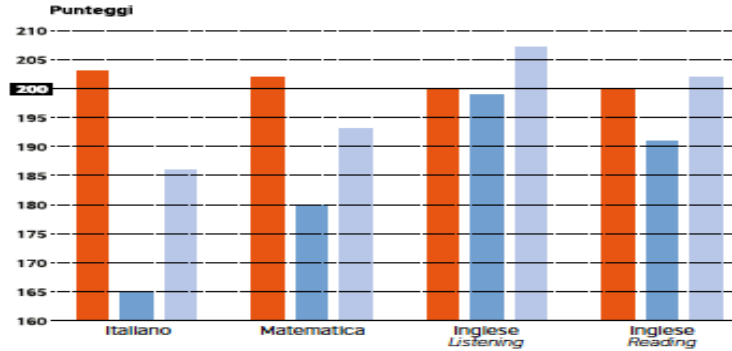
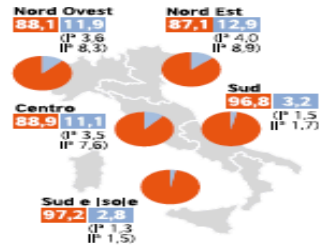
**Graph grade 2 (top):** Italian (left), Mathematics (right)

**Graph grade 5 (bottom):** from left to right, Italian, Mathematics, English-listening, English-reading

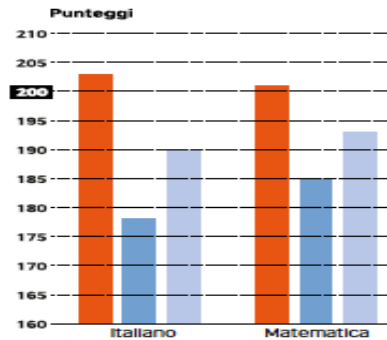
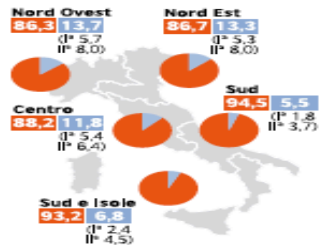
# Differences based on Italian or foreign origin (grade 8 and grade 10)

■ Italiani 
 ■ Immigrati I° generazione 
 ■ Immigrati II° generazione

## GRADO 8



## GRADO 10



**Graph legend (top):** Italian (orange), Immigrant – first generation (blue), Immigrant – second generation (light blue)

**Graph grade 8 (top):** from left to right, Italian, Mathematics, English-listening, English-reading

**Graph grade 10 (bottom):** Italian (left), Mathematics (right)

- The CBT administration in grade 10 has **considerably increased the participation** in the tests, in all the regions, especially in the technical-professional addresses
- Results by *descriptive levels* allows much deeper and more useful analyzes for schools and for the whole educational system
- The **English results have been satisfactory**, even if there are concerns, especially for lower secondary school
- Strong *cheating reduction*
- Strong **geographical differences** in terms of the result, efficiency and equity of the national education system
- Further **development** of the tests both from the technical point of view and as a tool for school improvement