Everything starts with the curriculum:
Evidence from ILSA studies

SIDNEY researchED
March 27, 2021

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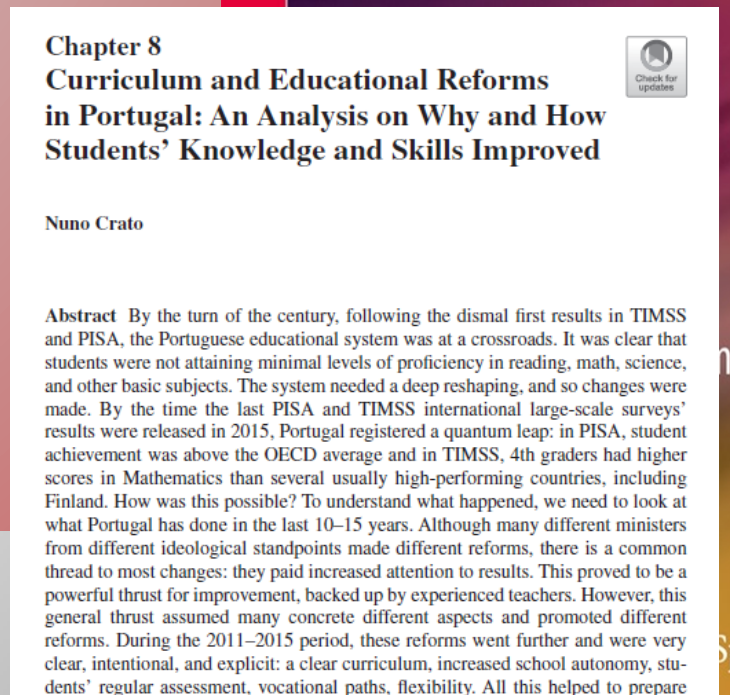


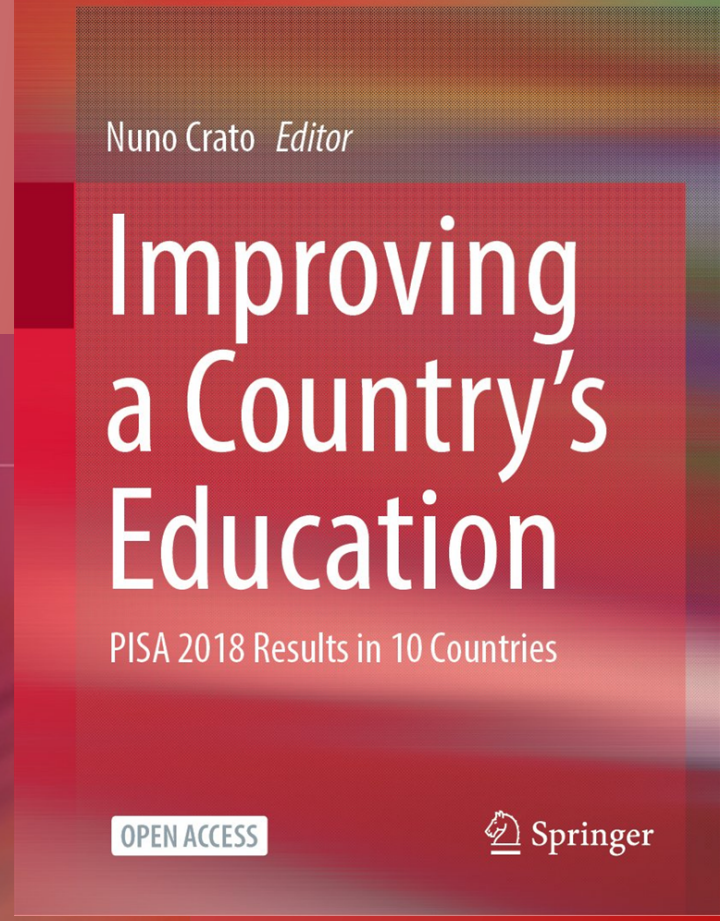
Chapter 8

Curriculum and Educational Reforms in Portugal: An Analysis on Why and How Students' Knowledge and Skills Improved

Nuno Crato

Abstract By the turn of the century, following the dismal first results in TIMSS and PISA, the Portuguese educational system was at a crossroads. It was clear that students were not attaining minimal levels of proficiency in reading, math, science, and other basic subjects. The system needed a deep reshaping, and so changes were made. By the time the last PISA and TIMSS international large-scale surveys' results were released in 2015, Portugal registered a quantum leap: in PISA, student achievement was above the OECD average and in TIMSS, 4th graders had higher scores in Mathematics than several usually high-performing countries, including Finland. How was this possible? To understand what happened, we need to look at what Portugal has done in the last 10–15 years. Although many different ministers from different ideological standpoints made different reforms, there is a common thread to most changes: they paid increased attention to results. This proved to be a powerful thrust for improvement, backed up by experienced teachers. However, this general thrust assumed many concrete different aspects and promoted different reforms. During the 2011–2015 period, these reforms went further and were very clear, intentional, and explicit: a clear curriculum, increased school autonomy, stu-

dents' regular assessment, vocational paths, flexibility. All this helped to prepare



PISA 2018 Results

WHAT STUDENTS KNOW AND CAN DO

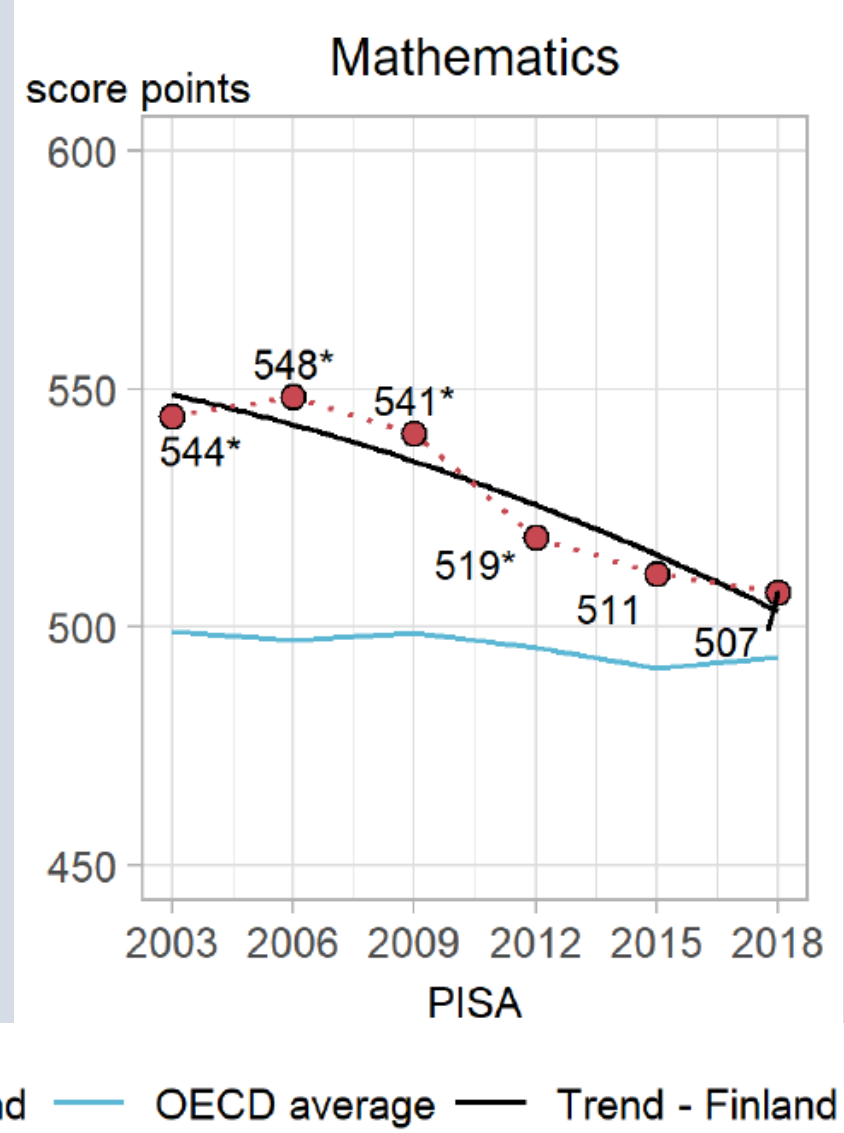
VOLUME I

Preface

Among its many findings, our PISA 2018 assessment shows that 15-year-old students in the four provinces/municipalities of China that participated in the study – Beijing, Shanghai, Jiangsu and Zhejiang – outperformed by a large margin their peers from all of the other 78 participating education systems, in mathematics and science. Moreover, the 10% most disadvantaged students in these four jurisdictions also showed better reading skills than those of the average student in OECD countries, as well as skills similar to the 10% most advantaged students in some of these countries. True, these four provinces/municipalities in eastern China are far from representing China as a whole, but the size of each of them compares to that of a typical OECD country, and their combined populations amount to over 180 million. What makes their achievement even more remarkable is that the level of income of these four Chinese regions is well below the OECD average. The quality of their schools today will feed into the strength of their economies tomorrow.

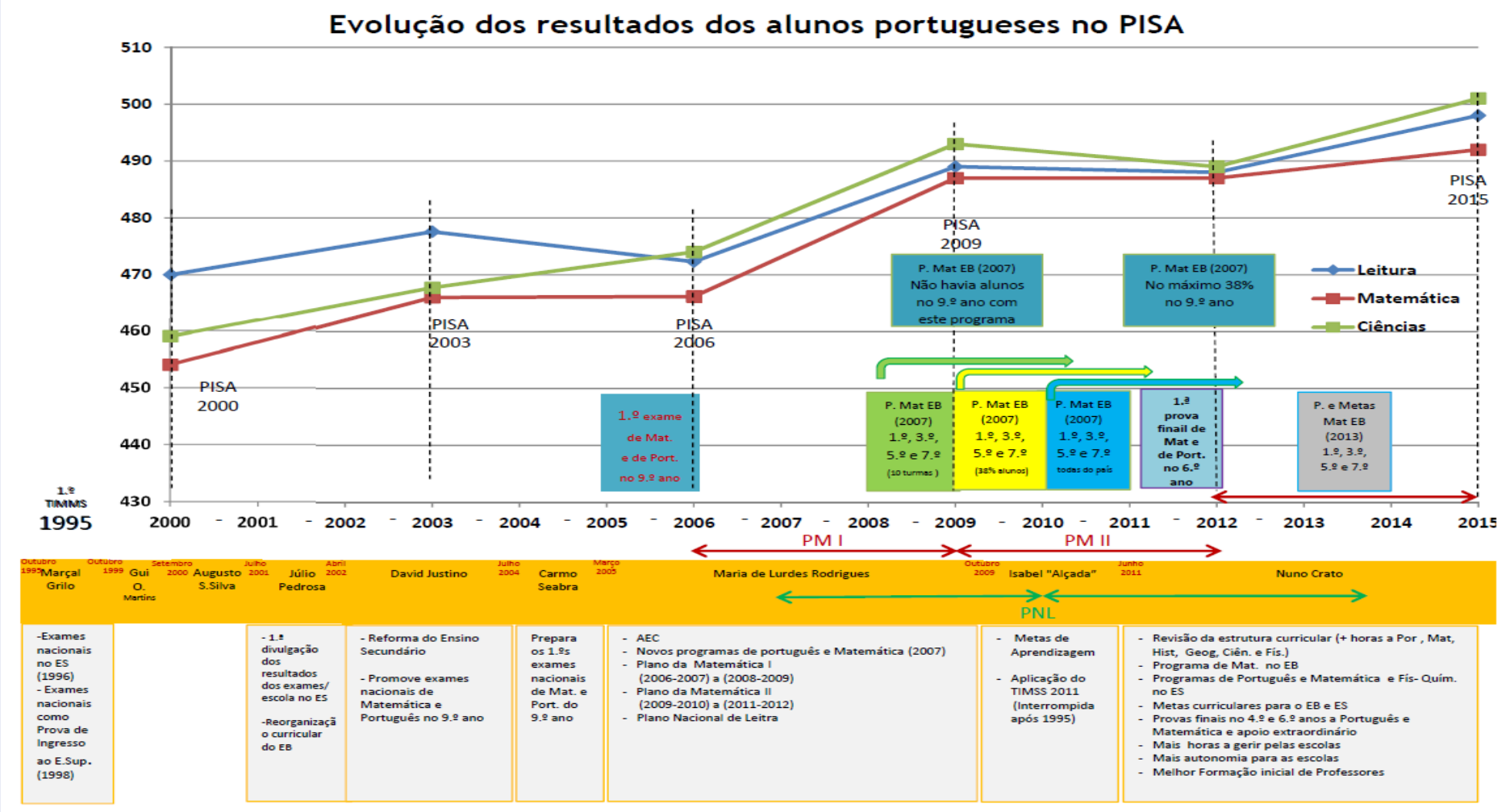
In this context, and given the fact that expenditure per primary and secondary student rose by more than 15% across OECD countries over the past decade, it is disappointing that most OECD countries saw virtually no improvement in the performance of their students since PISA was first conducted in 2000. In fact, only seven of the 79 education systems analysed saw significant improvements in the reading, mathematics and science performance of their students throughout their participation in PISA, and only one of these, Portugal, is a member of the OECD.

During the same period, the demands placed on the reading skills of 15-year-olds have fundamentally changed. The smartphone has transformed the ways in which people read and exchange information; and digitalisation has resulted in the emergence of new forms of text, ranging from the concise, to the lengthy and unwieldy. In the past, students could find clear and singular answers to their questions in carefully curated and government-approved textbooks, and they could trust those answers to be true. Today, they will find hundreds of thousands of answers to their questions on line, and it is up to them to figure out what is true and what is false, what is right and what is wrong. Reading is no longer mainly about extracting information; it is about constructing knowledg thinking critically and making well-founded judgements. Against this backdrop, the findings from this latest PISA round show th fewer than 1 in 10 students in OECD countries was able to distinguish between fact and opinion, based on implicit cues pertaining



Source: OECD, PISA 2018 Database, Tables I. B1.10, I. B1.11 and I. B1.12.

authoritarian times 1933 - 1974	"romantic" era 1974 - 1995/2000	pragmatic times 2000 - 2011	knowledge curriculum 2011 - 2015	??? 2016 - …



Two different countries:

1995 - 2000

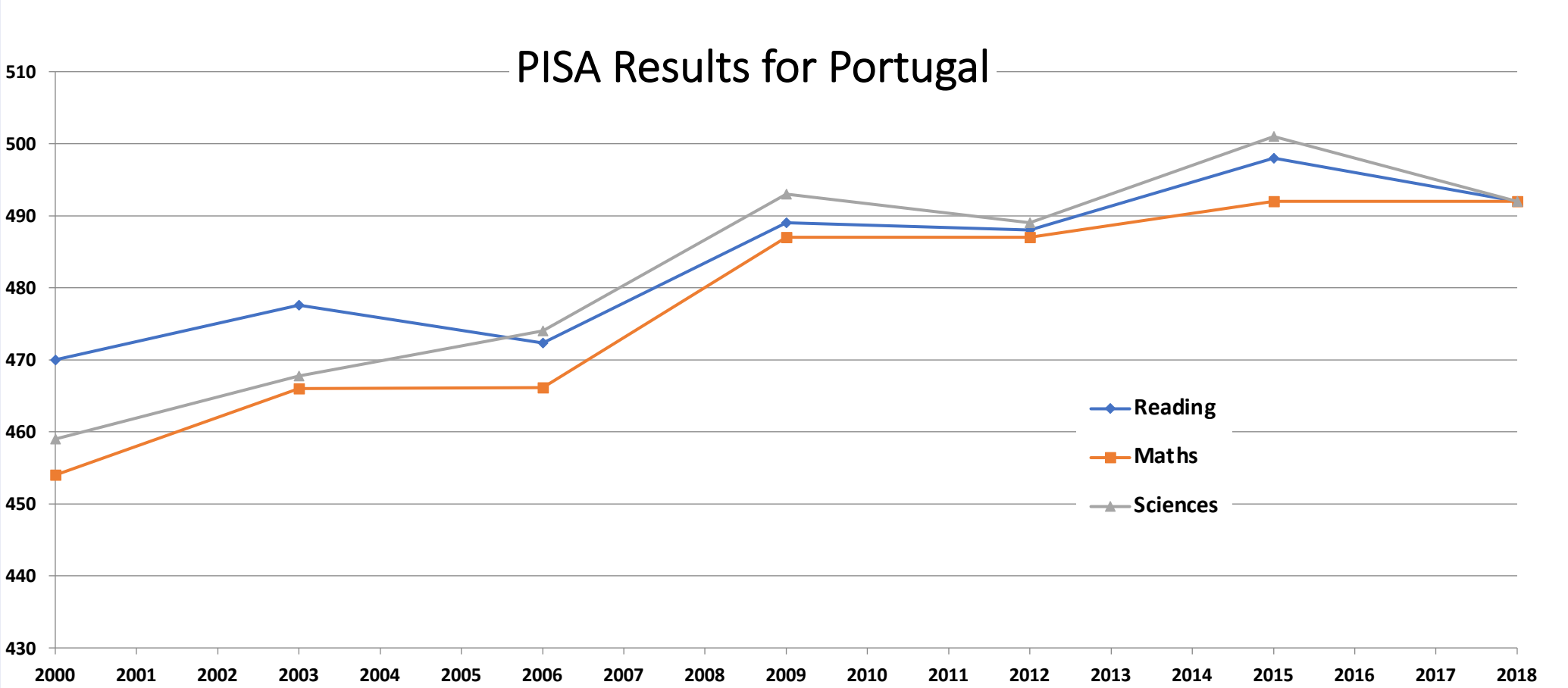
2001 - 2015

Specific factors

2001: School results
2004: Competences put aside
2005: Evaluation 9th grade
2006: Assessment 4th 6th, action programs, PAM
2007: Textbook evaluation
2011: Competences end, knowledge-based standards start
2012: Better standards
2012: Evaluation 4th 6th

But… what happened next ?

“romantic” era 1974 - 1995/2000	pragmatic times 2000/2003 - 2011	knowledge curriculum 2011 - 2015	vague competences again… 2016 - 2020



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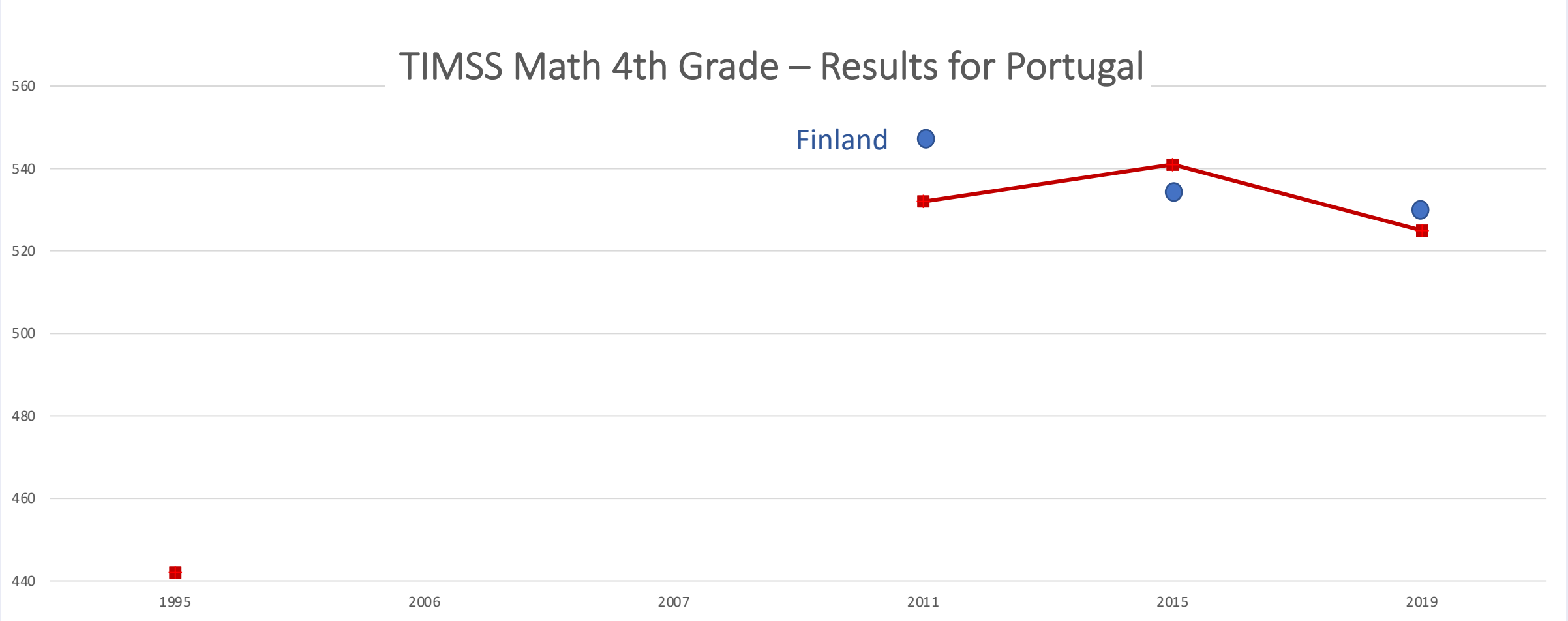
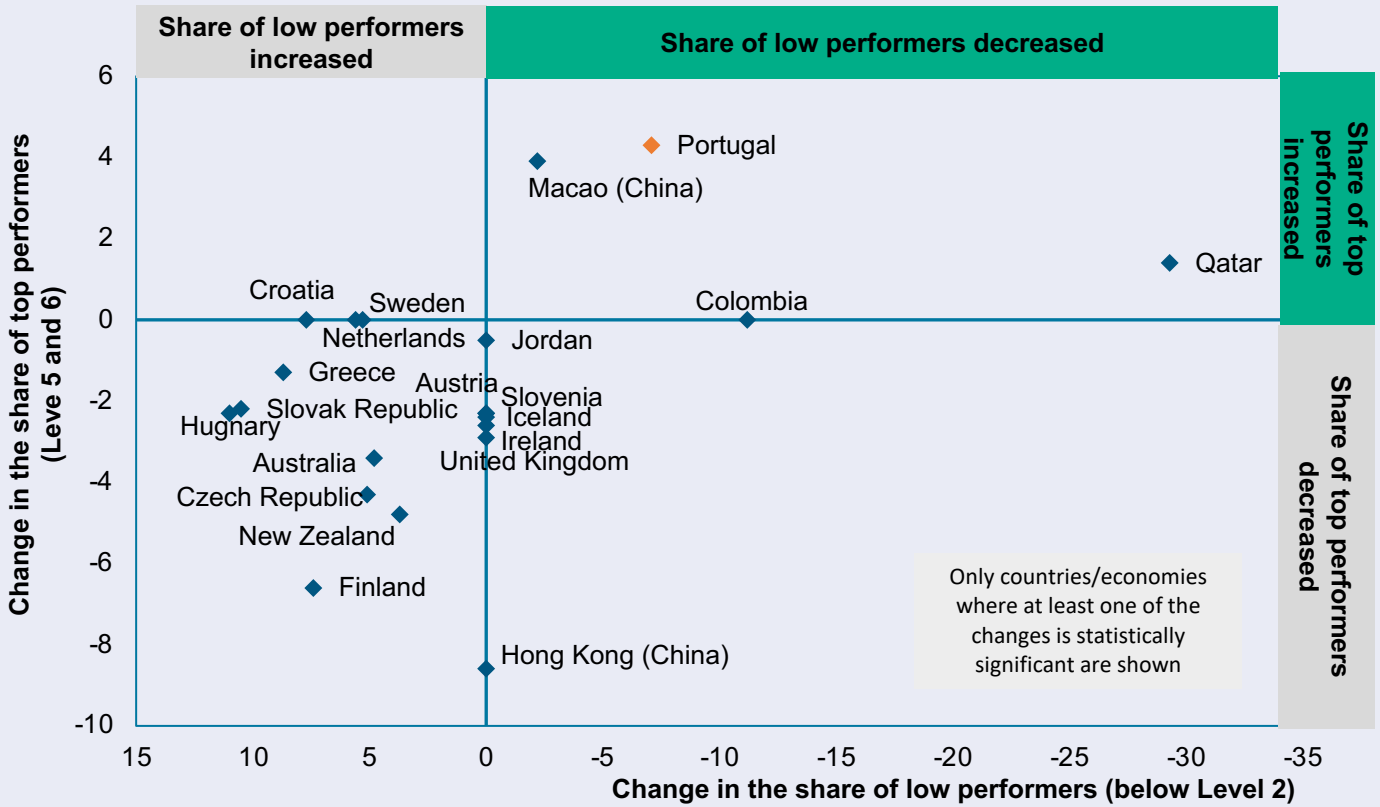


Sometimes, people think there is a dichotomy between quality and fairness.

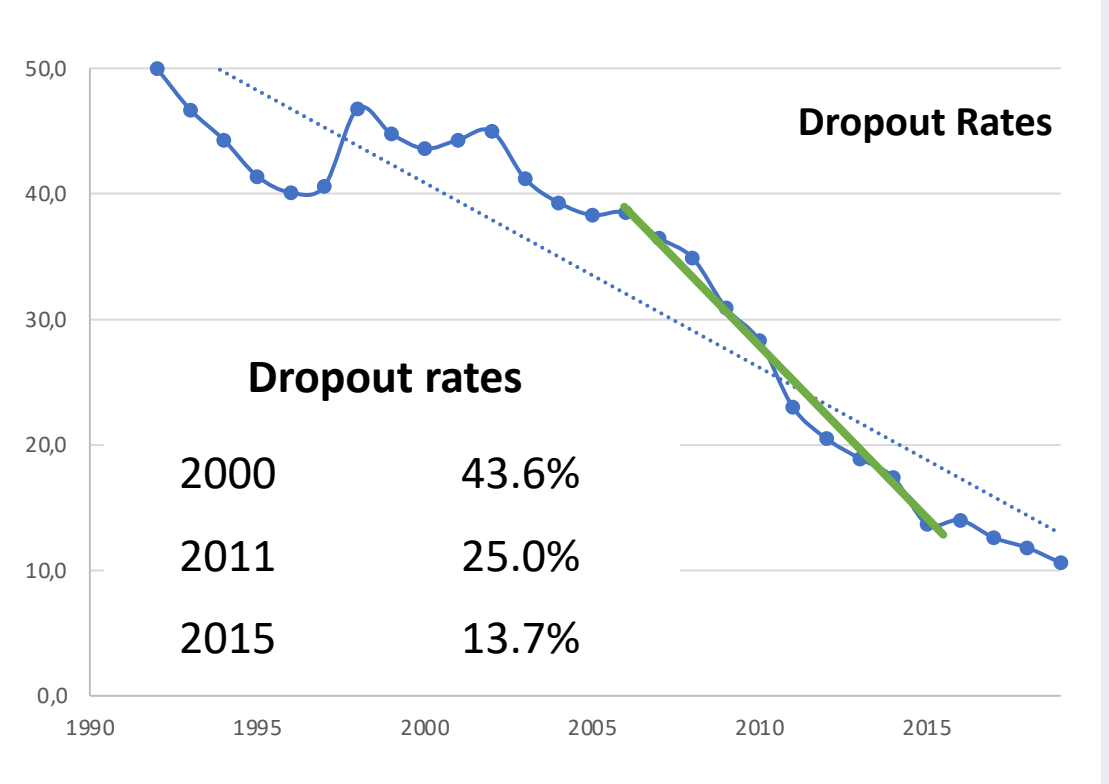
So, let’s have a closer look

Fraction of High- and Low-Performers TIMSS 4th Grade Math - Portugal			
	2011	2015	2019
High Performers = Level 4	8	12	9
Low Performers = Level 1 or below	20	18	26

Change in the share of top and low performers between 2006 and 2015



PISA 2015 Report: Fig. I.2.26



PISA 2006-2015

Portugal significantly increased the share of top-performers and decreased the share of low-performers

LOW PERFORMERS	2009	2012	2015	2018
OECD				
Science	18.8	18.7	22.1	22.0
Math (36)	23.5	24.4	24.6	24.1
Reading	19.4	18.9	20.9	22.6
All domains				13.4
PORTUGAL				
Science	16.5	19.0	17.4	20.2
Math	23.7	24.9	23.8	23.3
Reading	17.6	18.8	17.2	19.6
All domains				12.6
EU				
Science		16.6	20.6	21.6
Math		22.1	22.2	22.4
Reading		17.8	19.7	21.7
All domains				12.7*

So… let’s see what PISA studies reveal

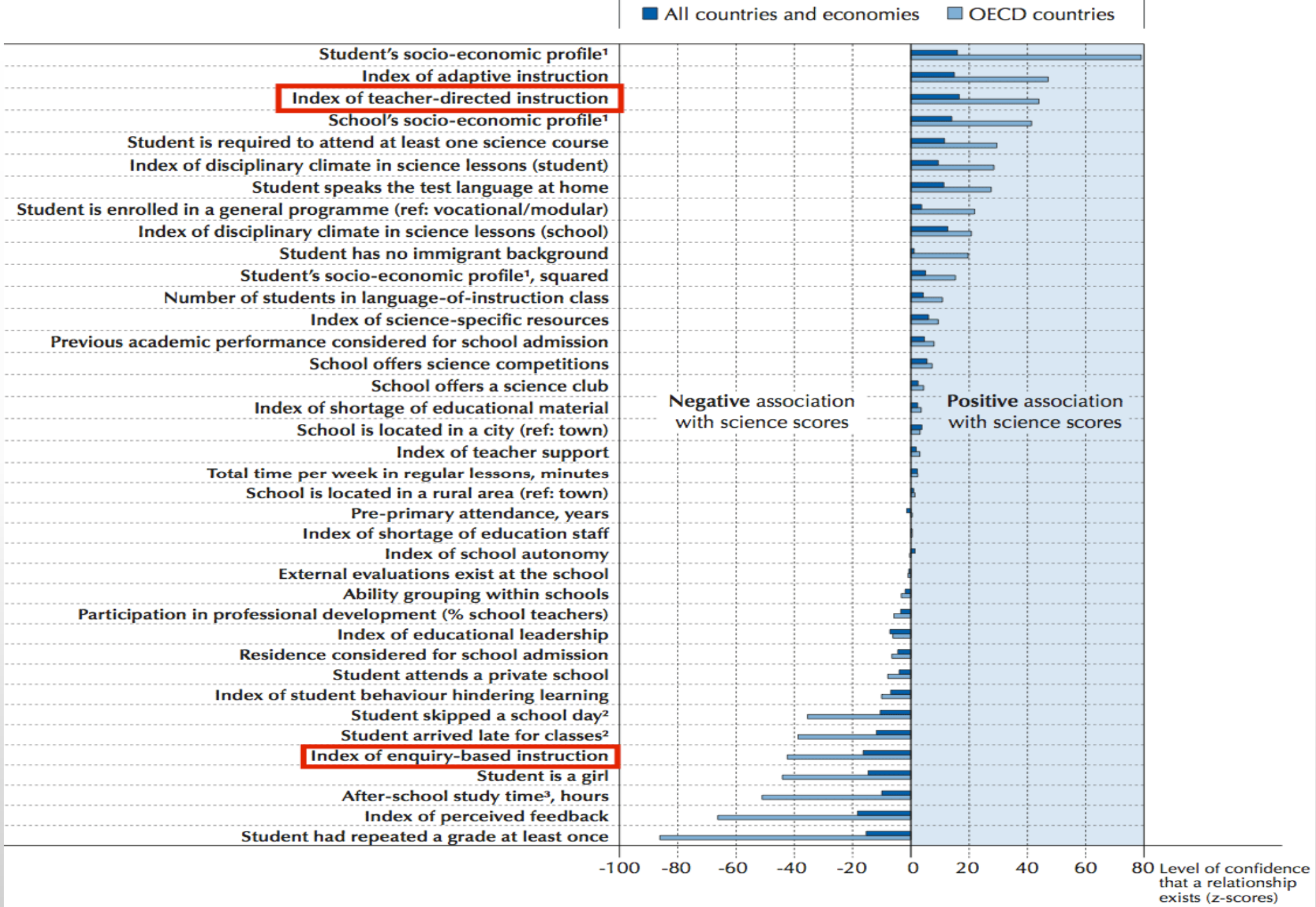
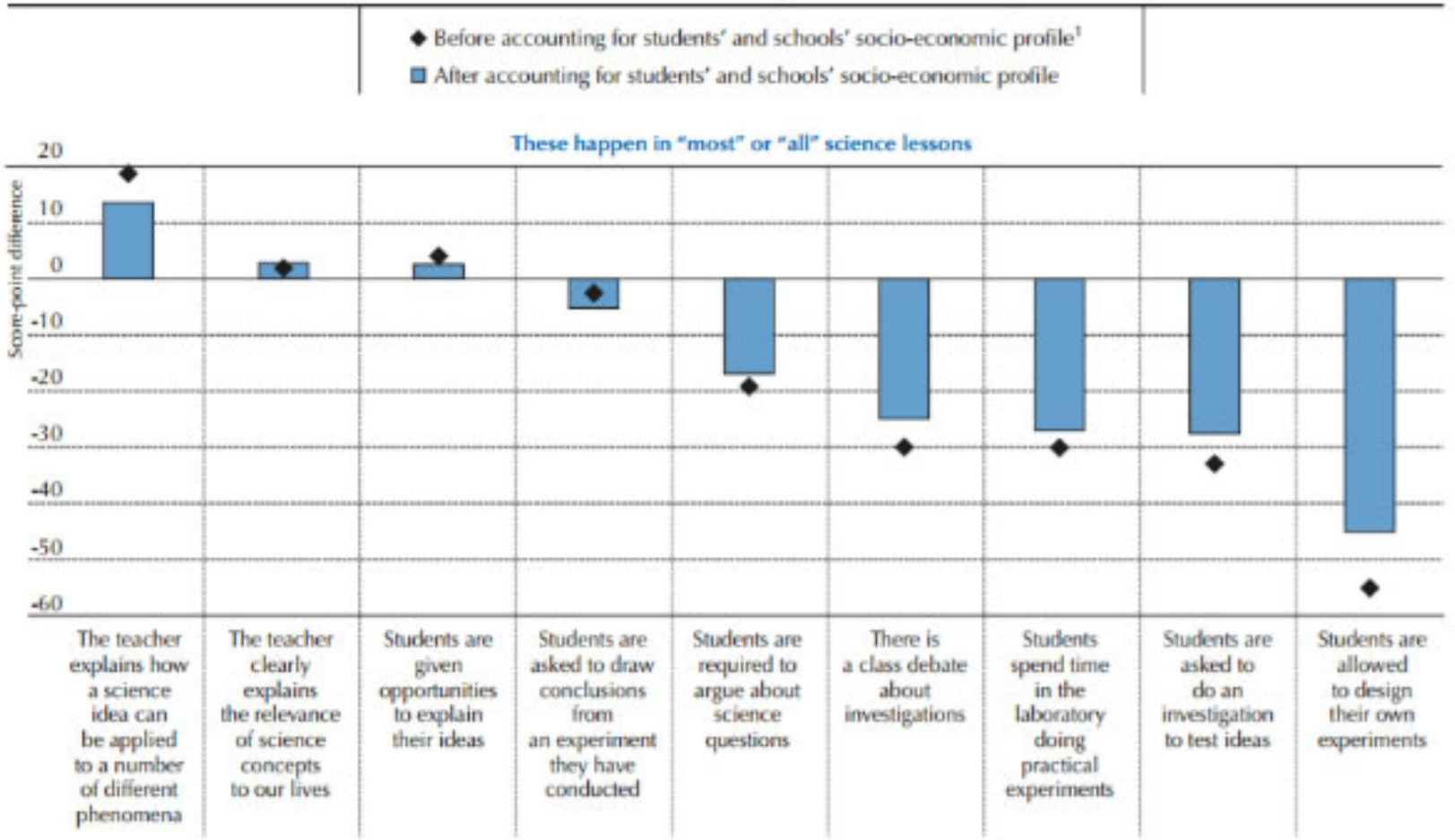

All countries and economies
OECD countries
Student's socio-economic profile¹
Index of adaptive instruction
Index of teacher-directed instruction
School's socio-economic profile¹
Student is required to attend at least one science course
Index of disciplinary climate in science lessons (student)
Student speaks the test language at home
Student is enrolled in a general programme (ref: vocational/modular)
Index of disciplinary climate in science lessons (school)
Student has no immigrant background
Student's socio-economic profile¹, squared
Number of students in language-of-instruction class
Index of science-specific resources
Previous academic performance considered for school admission
School offers science competitions
School offers a science club
Index of shortage of educational material
School is located in a city (ref: town)
Index of teacher support
Total time per week in regular lessons, minutes
School is located in a rural area (ref: town)
Pre-primary attendance, years
Index of shortage of education staff
Index of school autonomy
External evaluations exist at the school
Ability grouping within schools
Participation in professional development (% school teachers)
Index of educational leadership
Residence considered for school admission
Student attends a private school
Index of student behaviour hindering learning
Student skipped a school day²
Student arrived late for classes²
Index of enquiry-based instruction
Student is a girl
After-school study time³, hours
Index of perceived feedback
Student had repeated a grade at least once
Negative association with science scores
Positive association with science scores
-100
-80
-60
-40
-20
0
20
40
60
80
Level of confidence that a relationship exists (z-scores)

Figure II.2.20 ▪ **Enquiry-based teaching practices and science performance**

Results based on students' reports, OECD average



1. The socio-economic profile is measured by the PISA index of economic, social and cultural status.

Note: All differences are statistically significant (see Annex A3).

Source: OECD, PISA 2015 Database, Table II.2.28.

StatLink http://dx.doi.org/10.1787/888933435628

Ambitious curricula, aligned assessment, and focus on all students can improve education

Thank you!