



The Education in Korea: what does it look like?

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Korea in general





Sverige

대한민국

Ионгол Улс

中国

日本

What Koreans know about Sweden



Sweden sent medical troops during the Korean war: longest stay 1950-1957



<http://theme.archives.go.kr/next/625/medicalNation.do>

Thanks Sweden to help us during the Korean war

Swedish pop ABBA



Safety match from Jönköping

City of the matches

Swedish match



JONAS JONASSON

요나스 요나손 장편소설 임호경 옮김



차문 넘어 도마치
강 건너 노인
100세 노인



Popular Swedish novel



HUNDRAÅRINGEN

SOM KLEV UT GENOM FÖNSTRET OCH FÖRSVANN

Korea Geography

as of 2012

Republic of Korea

Area	99,720 km ²
Population	50M
GDP	1,449B\$ (26 th in the world) 1,675B\$ (8 th in trading)
GDP per capita	23,679\$
Major industries	Semi conductors automobiles Mobile phone Oil chemistry Steel Shipbuilding





posco



LG

About Korean Culture: sports

Korean Supporters World Cup 2004



!!!

Dae han min guk

Korean stream



<https://www.youtube.com/watch?v=9bZkp7q19f0>

PSY
Gangnam Style

Korean pop

Figure Queen
Kim Yun-A



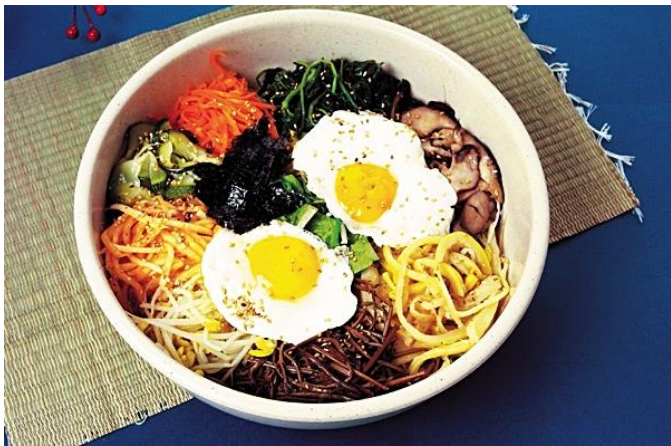
About Korean Food



Kimchi



Pork BBQ



Bibimbop



Course menu

Hangul (Korean Alphabets) Phonetic

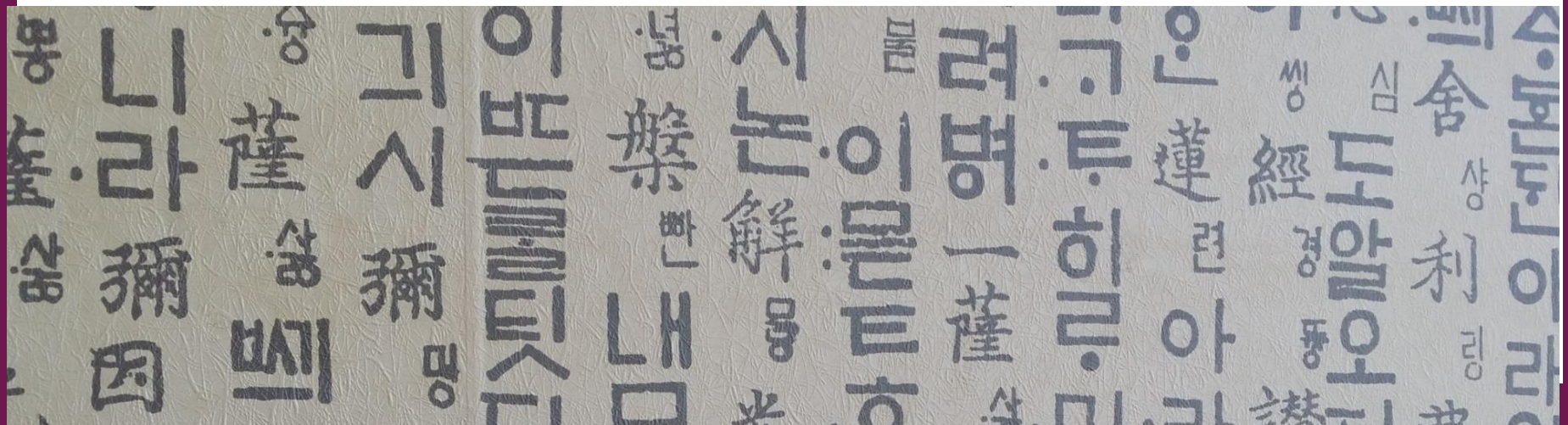
- 10 vowels

ㅏ ㅑ ㅓ ㅕ ㅗ ㅛ ㅜ ㅠ ㅡ ㅣ

- 14 consonants

ㄱ ㄴ ㄷ ㄹ ㅁ ㅂ ㅅ ㅇ ㅈ ㅊ ㅋ ㆁ ㆅ ㆆ

내 이름은 이옥화입니다



Hangul requires less cognitive load for number processing

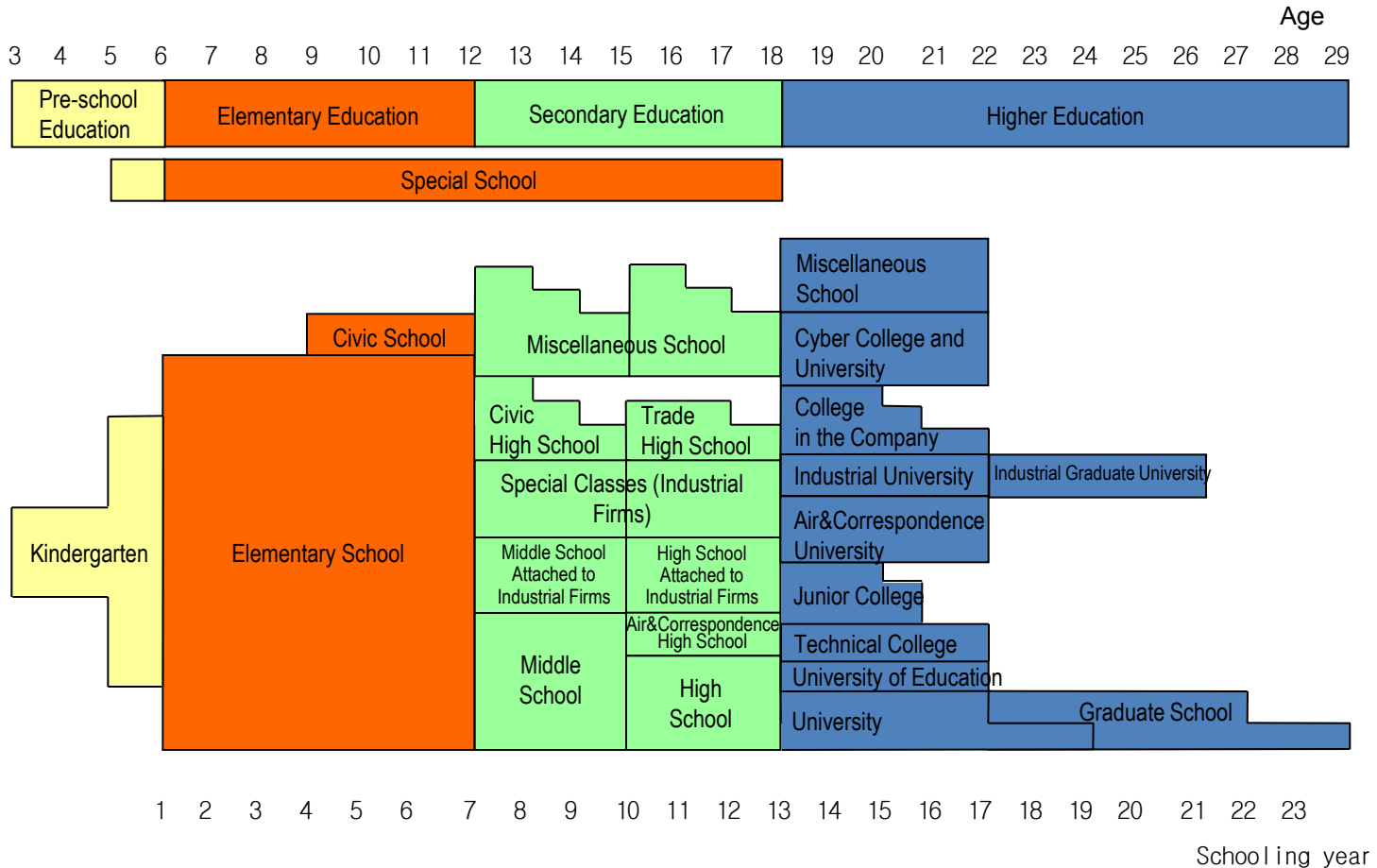
- Il ee sam sa oh yuk chil pal ku sip
1, 2, 3, 4, 5, 6, 7, 8, 9, 10
- Sip il sip ee sip sam sip sa
11, 12, 13, 14
- One two three four five six
- Eleven twelve thirteen fourteen fifteen sixteen

Korean Education



- School system
- Curriculum
- Educational organization
- Educational finance
- Educational climate

School System



National curriculum

- Curriculum with flexibility of implementation at school levels
- 10 core(required) subjects (1-10 grades)
 - Long common core learning
- Flexible selective subjects (11-12 grades)
 - Late selection for types of schools (or tracks) at 10th or 11th grade
 - Even then, students can change the track when they select higher edu. or career path later

Textbooks

- **Textbooks**

- Type I: Government copy righted (subjects in few demands which publishers can not make profit from)
- Type II: Local government copy righted (mostly)
- Type III: Qualified books by local government (local demands implemented)

- **Digital textbook**

- As a part of Smart Education policy
- Cost included when purchasing printed textbooks

- **Teachers' guide book along with textbooks**

Educational organizations

- **National level:** Ministry of education
 - Headed by vice prime minister
 - Appointed by the President
 - Covers policies related to all educations (higher ed, life long learning, informal edu, etc)
- **Local level:** Local Office of Education
 - Headed by superintendent elected by local citizens
 - Service duty: four year
 - Primary & secondary education

Achievements in international tests

- TIMSS (Trends in International Mathematics and Science Study) by IEA
 - Every four years
 - 2 cohort groups: 9, 13 years
 - 2011('conducted in '10.12): 9,000 students(primary 4th graders 150schools, 8th graders 150 middle schools)

year	countries	math	science
1995	40	3	4
1999	38	2	5
2003	46	2	3
2007	50	2	4
2011	64	-	-

Achievements in international tests

- PISA (Programme for International Student Assessment) by OECD
 - Every three years
 - 15 years old (9th and 10th graders)
 - '09.5: 5,123 students (high school 137, middle school 20)

year	countries	reading	math	science
2000	31	6	2	1
2003	40	2	3	4
2006	57	1	1-4	7-13
	OECD	1	1-2	5-9
2009	65	2-4	3-6	4-7
	OECD	1-2	1-2	2-4

Programme for International Student Assessment (2012)^[14]

(OECD members as of the time of the study in boldface)

Maths			Sciences			Reading		
1	 Shanghai, China	613	1	 Shanghai, China	580	1	 Shanghai, China	570
2	 Singapore	573	2	 Hong Kong, China	555	2	 Hong Kong, China	545
3	 Hong Kong, China	561	3	 Singapore	551	3	 Singapore	542
4	 Taiwan	560	4	 Japan	547	4	 Japan	538
5	 Korea	554	5	 Finland	545	5	 Korea	536
6	 Macau, China	538	6	 Estonia	541	6	 Finland	524
7	 Japan	536	7	 Korea	538	7	 Taiwan	523
8	 Liechtenstein	535	8	 Vietnam	528	8	 Canada	523
9	 Switzerland	531	9	 Poland	526	9	 Ireland	523
10	 Netherlands	523	10	 Liechtenstein	525	10	 Poland	518
11	 Estonia	521	11	 Canada	525	11	 Liechtenstein	516
12	 Finland	519	12	 Germany	524	12	 Estonia	516
13	 Canada	518	13	 Taiwan	523	13	 Australia	512
14	 Poland	518	14	 Netherlands	522	14	 New Zealand	512
15	 Belgium	515	15	 Ireland	522	15	 Netherlands	511
16	 Germany	514	16	 Macau, China	521	16	 Macau, China	509
17	 Vietnam	511	17	 Australia	521	17	 Switzerland	509
18	 Austria	506	18	 New Zealand	516	18	 Belgium	509
19	 Australia	504	19	 Switzerland	515	19	 Germany	508
20	 Ireland	501	20	 Slovenia	514	20	 Vietnam	508
21	 Slovenia	501	21	 United Kingdom	514	21	 France	505
22	 Denmark	500	22	 Czech Republic	508	22	 Norway	504
23	 New Zealand	500	23	 Austria	506	23	 United Kingdom	499

PISA Digital Reading Assessment DRA (2009)

- 157 schools (1,488 students)
- Hyper media based evaluation
- 19 countries participated:
- Korea 1 (568), NZ 2 (537): big gap

II. Characteristics of high performers



- What makes Korean education strong?
- Implications to be strong performers: PISA 2012

What makes Korean education strong?

- High educational participation
- Educational welfare
- Educational equity
- Student attitude
- Homogeneous st's background
- More time to learn High expectation
- Diverse learning opportunities
- Competent teachers

Educational participation

Successful completion rate for high school

(unit: %)

level	High school			General program			Vocational program		
	total	M	F	total	M	F	total	M	F
Korea	95	94	96	97	96	97	90	89	90
OECD average	72	68	76	76	73	80	64	61	67

Successful completion rate means (high school graduates / high school entrants 3 years ago)*100

Higher education entry rate

- 78% entry rate for higher education school age
- 66% completion rate for 25-34 years
- Upper secondary education, general or vocational, is becoming the norm

levels	2yr colleges			Four year and masters' program			Graduate (Ph.D.)		
	total	M	F	total	M	F	total	M	F
Korea	36	33	39	69	68	69	3.1	3.6	2.5
OECD Ave.	18	17	20	58	52	65	2.6	2.7	2.6

Educational welfare

- Schools turned into whole care center from educational institutes
 - Free warm meals
 - All day child care service
- Safe schools
 - Preventing school violence and crime
 - Safety facilities and school patrol
- Class teacher for every classes
 - Primarily responsible for students in the class
 - Students' behavior, punctuality, truants
 - Provide necessities

Educational equity



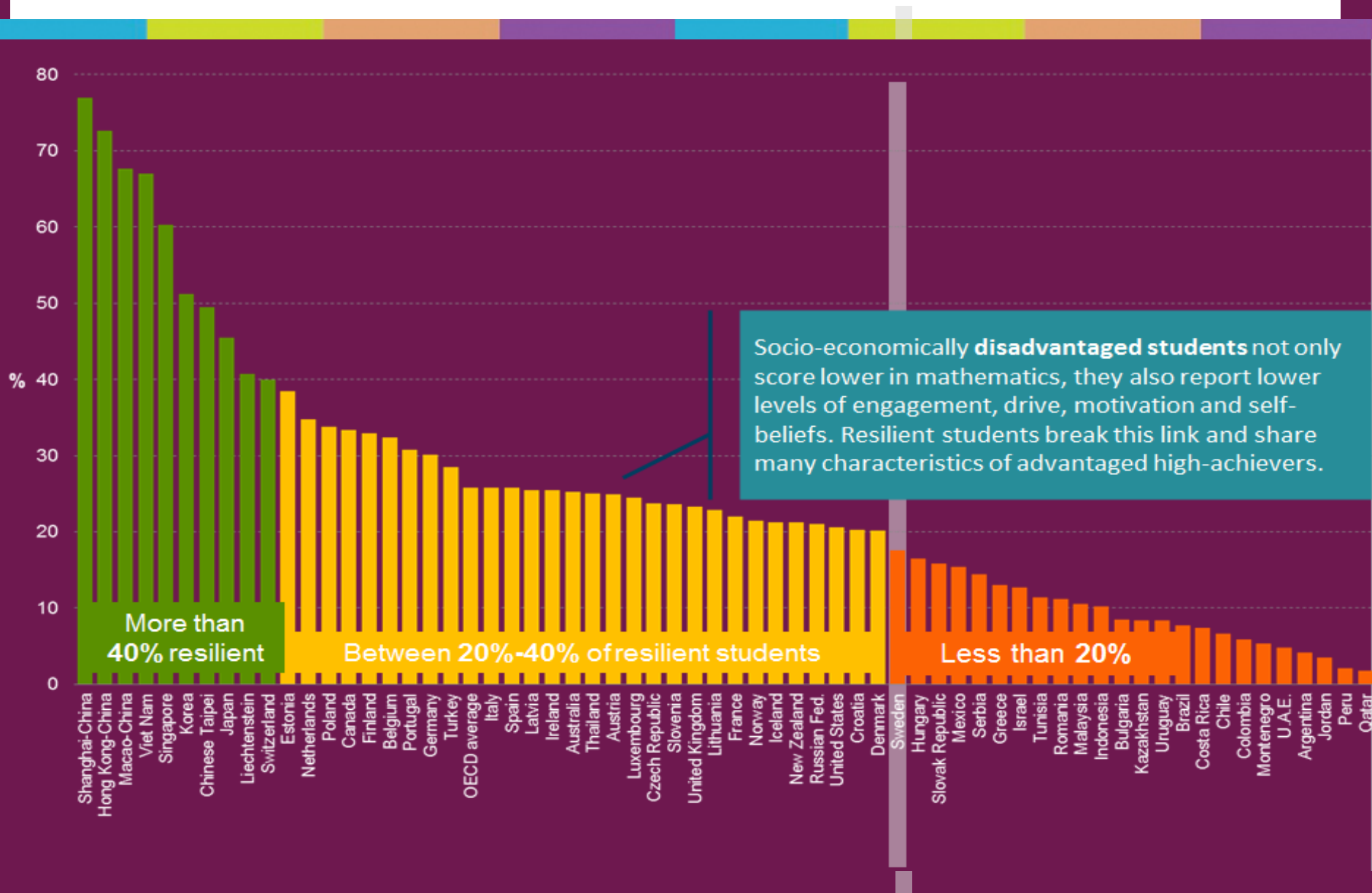
- To minimize the educational gap
- Support for
 - Special education
 - After school education
 - More budget and incentives to rural areas
- Quality education for all
 - EBS free video
 - Policies to support disadvantaged schools

Students attitude

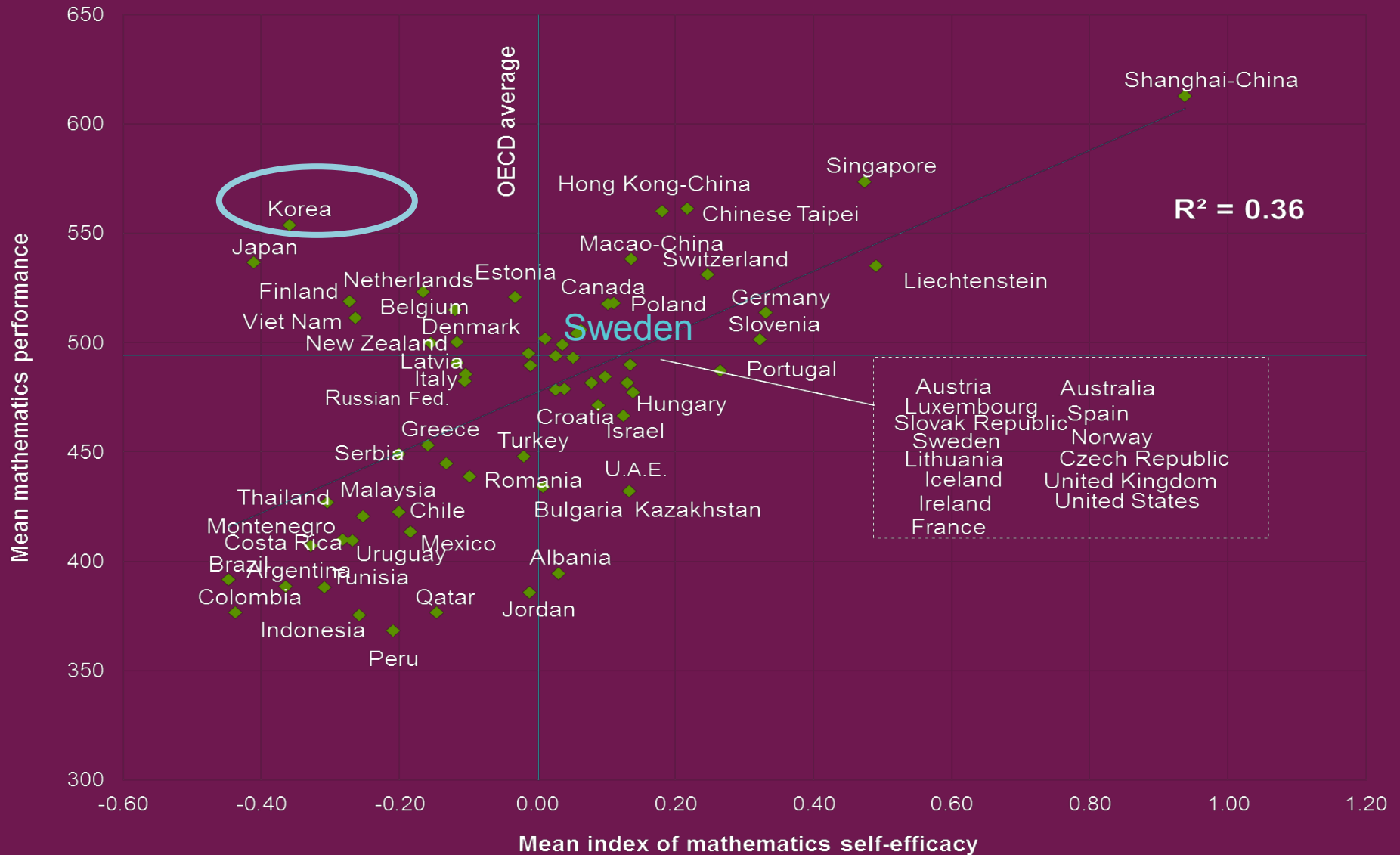


- Attitude toward academic results: self responsible
 - Educational failure is due to my lack of hard work
 - Not due to my external elements
 - Perceived self-responsibility for the results
- High percentage of resilient students
 - Relatively high percentage

Resilient students



Self efficacy: students have stronger beliefs in their abilities perform better in mathematics



Homogeneous st's background



- Few students with different background
 - Students with immigration background are growing
 - But still less than 10%
- One standardized language: Korean
- Not high cost to create common ground of understanding culture

Approach to heterogeneity



- Parents' and teachers' expect all children can achieve
- A commitment to education and the belief that competencies can be learned
 - Universal educational standards and personalization as the approach to heterogeneity in the students
 - ...as opposed to a belief that students have different destinations to be met with different expectations, and selection/stratification as the approach to heterogeneity

Grouping by ability



- In countries where grouping students by ability or behavior is more widespread, students are less likely to feel that learning mathematics is **useful** (PISA 2012 result, OECD, 2014)
- Korea has relatively big class size
- Ironically due to the less resources of instructional materials and instructors, individualized learning by ability groups is not practiced widely

More time to learn (formal & informal)

- More input in learning time leads to high output
- Long school days provide more opportunity for learning more
 - First class from 8:30
 - Upper high school students can continue to stay school until 10:00PM on voluntary basis
 - 2/3 students participate in after school programs
- After school, students attend private tutoring (cram schools)

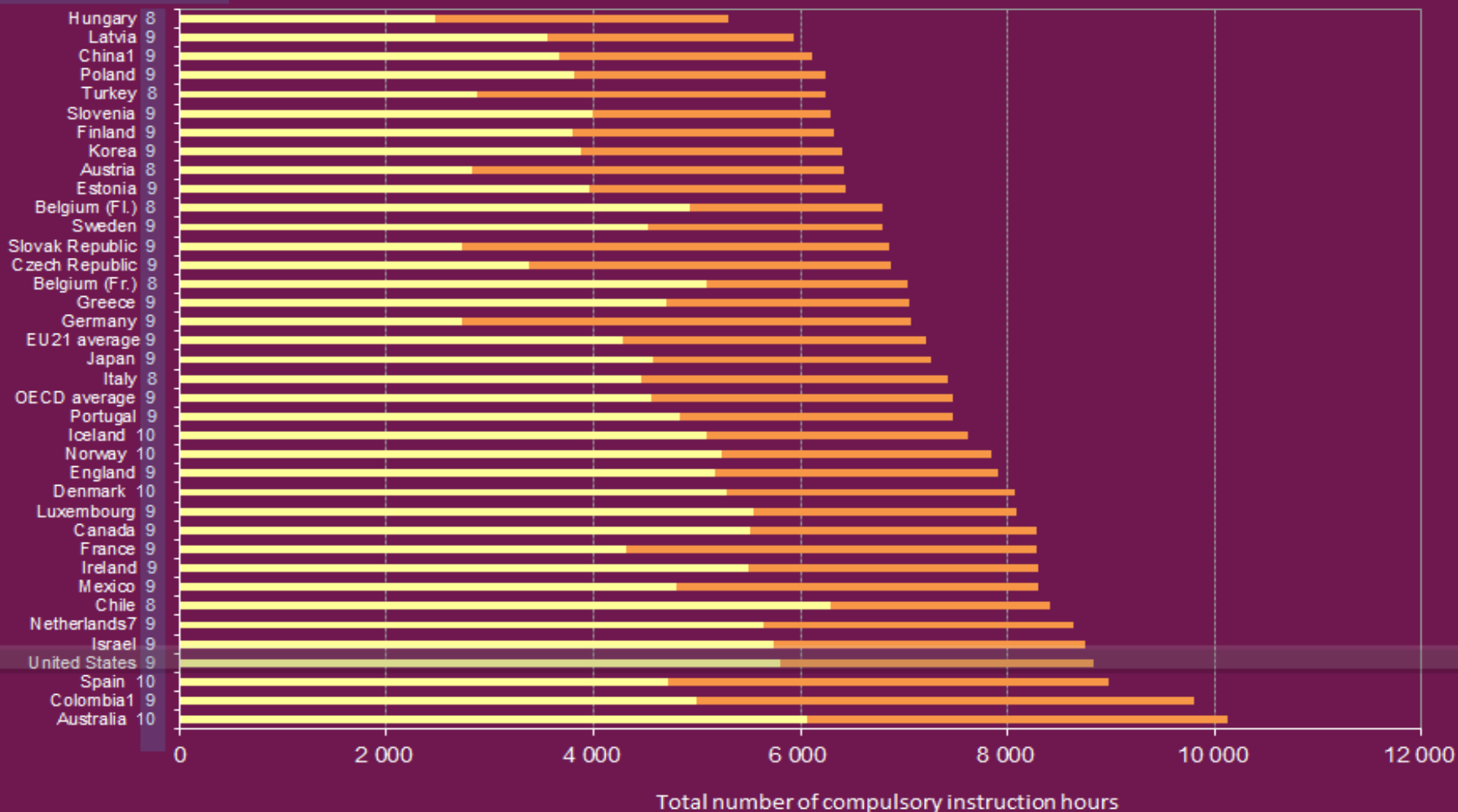
Students in OECD countries receive an average of 7 475 compulsory hours of instruction during their primary and lower secondary education

Compulsory instruction time in general education (2014)

Duration of primary and lower secondary education, in years

■ Primary education

■ Lower secondary education



High expectation



- Educating all students in all subjects in all grades
 - Working hard is respected and valued
 - Most students are expected to finish academic work successfully
- Standardized test introduced
 - Basic academic skills diagnosed, monitored
- Rigorous college preparatory academics
 - Highest university entry rate in the world
 - Strong private educational institute

National Assessment of Achievement

- Annual test for secondary schools
- Upper secondary school
 - 11th graders
 - Math, Korean, English
- Lower secondary school
 - 9th graders
 - Math, Korean, English, science, social science
- To diagnose students achievement level
 - Under achieving schools: supplementary knowledge by lectures, teaching materials
 - High achieving schools: use resources for their own project

National Assessment of Achievement

<http://www.kice.re.kr/board.do?page=1&boardConfigNo=112&menuNo=372>



f t rss -100%+ ENGLISH

주요 사업

연구보고서

간행물/기출문제

정보공개

열린 마당

알림 마당

KICE 소개

전체메뉴보기

Mobile KICE

간행물/기출문제

정기간행물

- 교육광장
- 교육과정평가연구
- 연차보고서
- 연구리포트
- Position Paper
- 우수보고서 시리즈
- 국제교육동향
- KICE E-소식

기출문제

- 대학수학능력시험·수능 모의평가
- 국가수준 학업성취도 평가
- 초등학교 3학년 진단평가
- 고입선발시험
- 중입·고입·고졸 검정고시
- 중등교사임용시험
- 초등교사임용시험

Home > 간행물/기출문제 > 기출문제 > 국가수준 학업성취도 평가

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제목순 ▾ 등록순 ▾ 조회순 ▾ 10개씩 보기 ▾

번호	년도	학년	교과	제목	등록일	파일	조회
415	2014	고등학교 2학년	영어	문제지,정답,문항정보,듣기대본,듣기파일	2014-06-25		4056
414	2014	고등학교 2학년	수학	문제지,정답,문항정보	2014-06-25		3306
413	2014	고등학교 2학년	국어	문제지,정답,문항정보,듣기대본,듣기파일	2014-06-25		3219

Diverse learning opportunities



- ICT enriched environment
 - Technology embedded classrooms
 - Technology to students
- Diverse opportunities for educational participation
 - After school programs
 - Supports disadvantaged students
- Character education
 - Emotion, ethics, affective domain education emphasized
- Diverse practical skill building
 - Linking the real world to the classroom

Classroom enhanced with technology



Teachers' competence

- Highly talented students can get in college of education
- Highly competitive exam to have a teaching position
- Teaching is possible with bachelor's degree
 - But more than 50% teachers have Master
 - A few have ph.D.
- Frequent PD to promote their competencies

Competencies for skillful teachers



- Safe and stimulating learning climate
- Efficient classroom management
- Clarity of instruction
- Activating learning
- Teaching and learning strategies
- Adaptive teaching

National teacher evaluation

- National teacher evaluation since 2010
 - With the students & parents participation
 - Need to open one class video to the public
 - Correlated with the satisfaction of sts & parents
- Teachers with poor results: supplementary training
- Teachers with high performance:
 - personal research or education at universities or related institutions
 - Mater teacher
 - Leading position for the open principal recruitment

Implications to be strong performers: PISA 2012 (OECD, 2014)

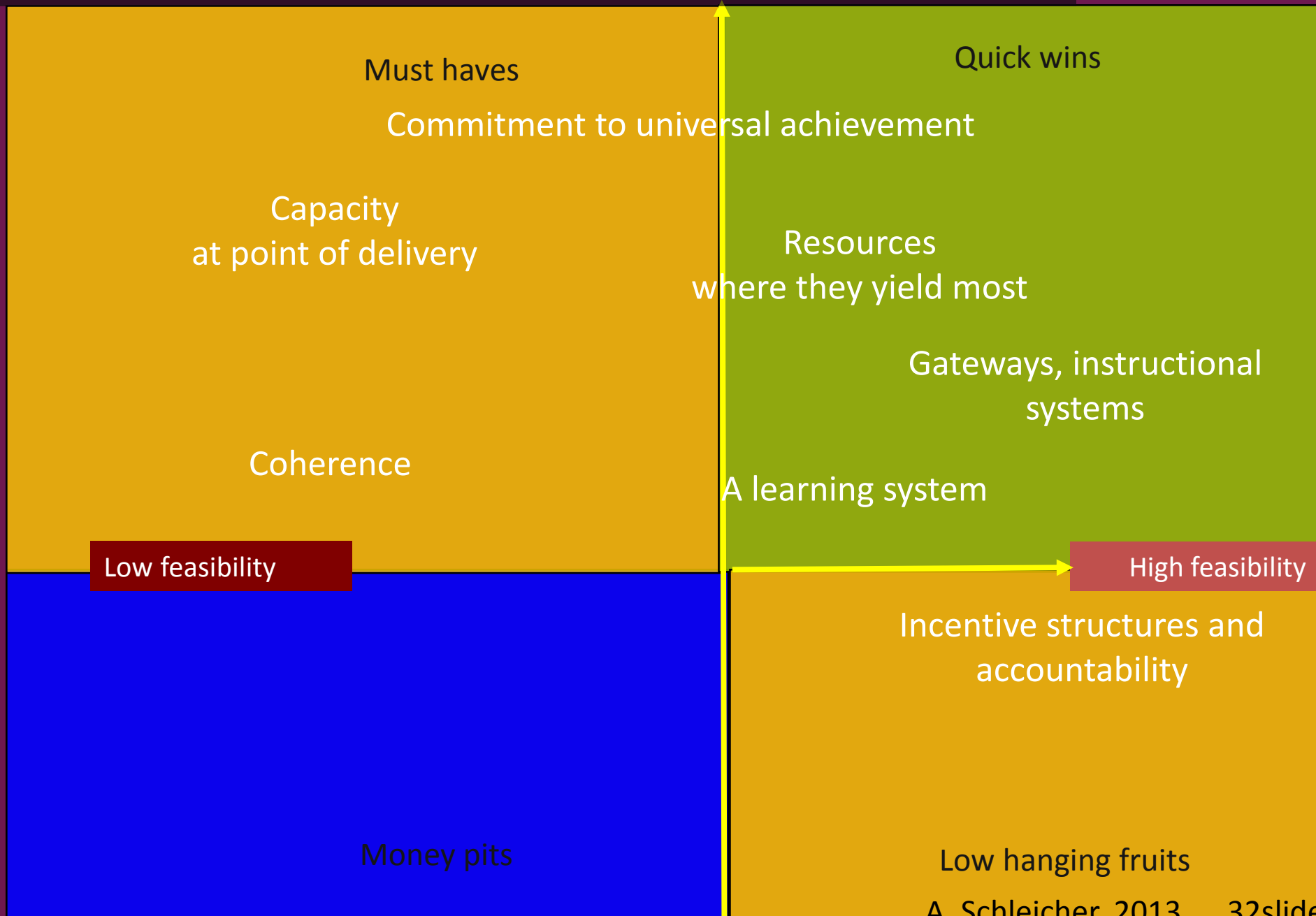


- Feasibility vs impact on outcome
- Schools make difference for equity
- Money makes difference
- Quality assurance and school improvement'
- Governance matters
- PISA implications

Feasibility vs impact on outcome

: PISA 2012 (OECD, 2014)

- Commitment to universal achievement
- Resources where they yield most
- Gateways, instructional systems
- Learning system
- Incentive structures and accountability
- Capacity at point of delivery
- Coherence



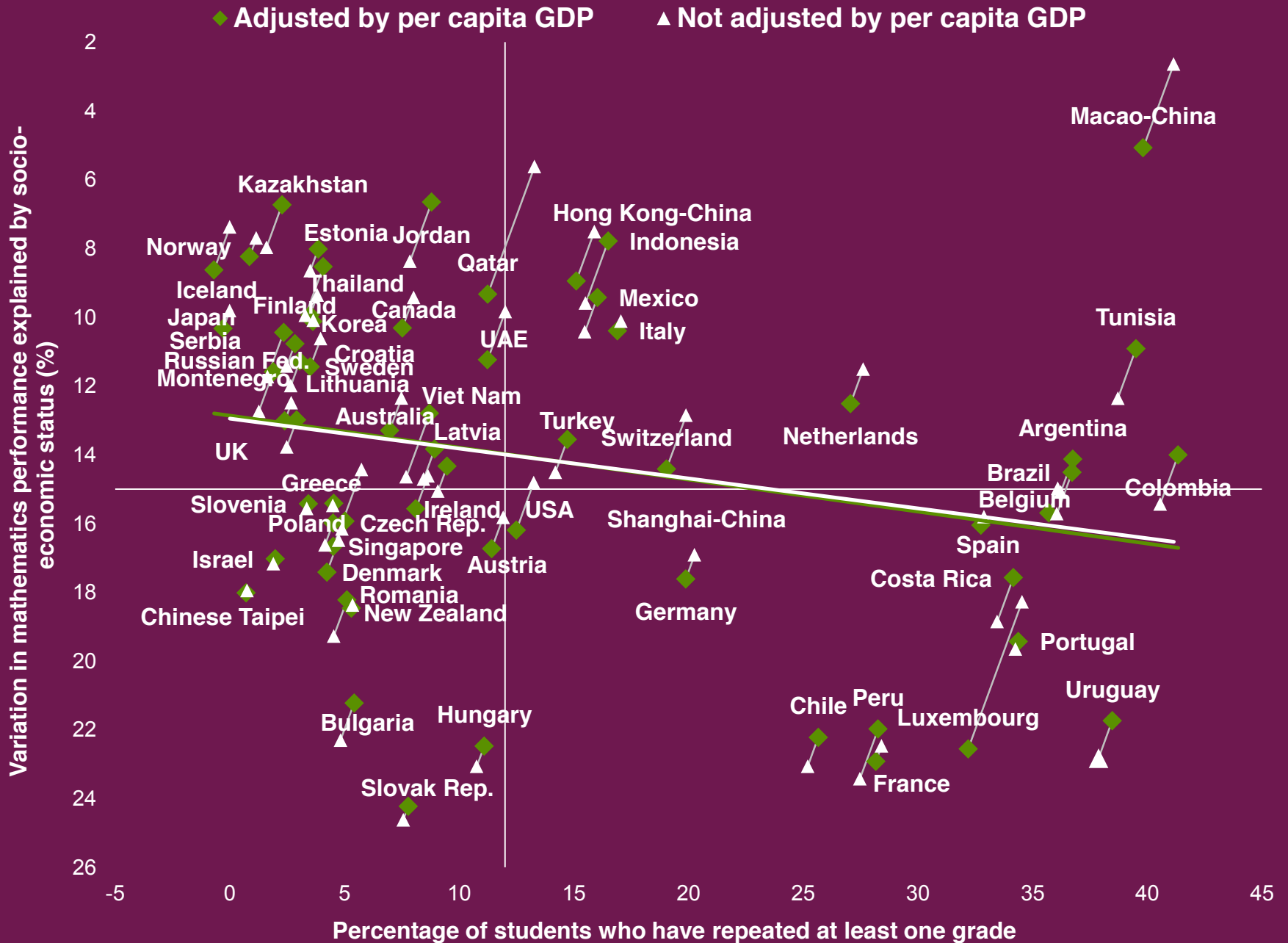
Schools make a difference for equity

- **Grade repetition** is negatively related to equity
- Grade repetition is an expensive policy

- **Stratification** in school systems (e.g. grade repetition and selecting students at a young age for different “tracks” or types of schools) is negatively related to equity
- Students in highly stratified systems tend to be less motivated than those in less-stratified systems

Grade repetition is negatively related to equity

Fig IV.1.4



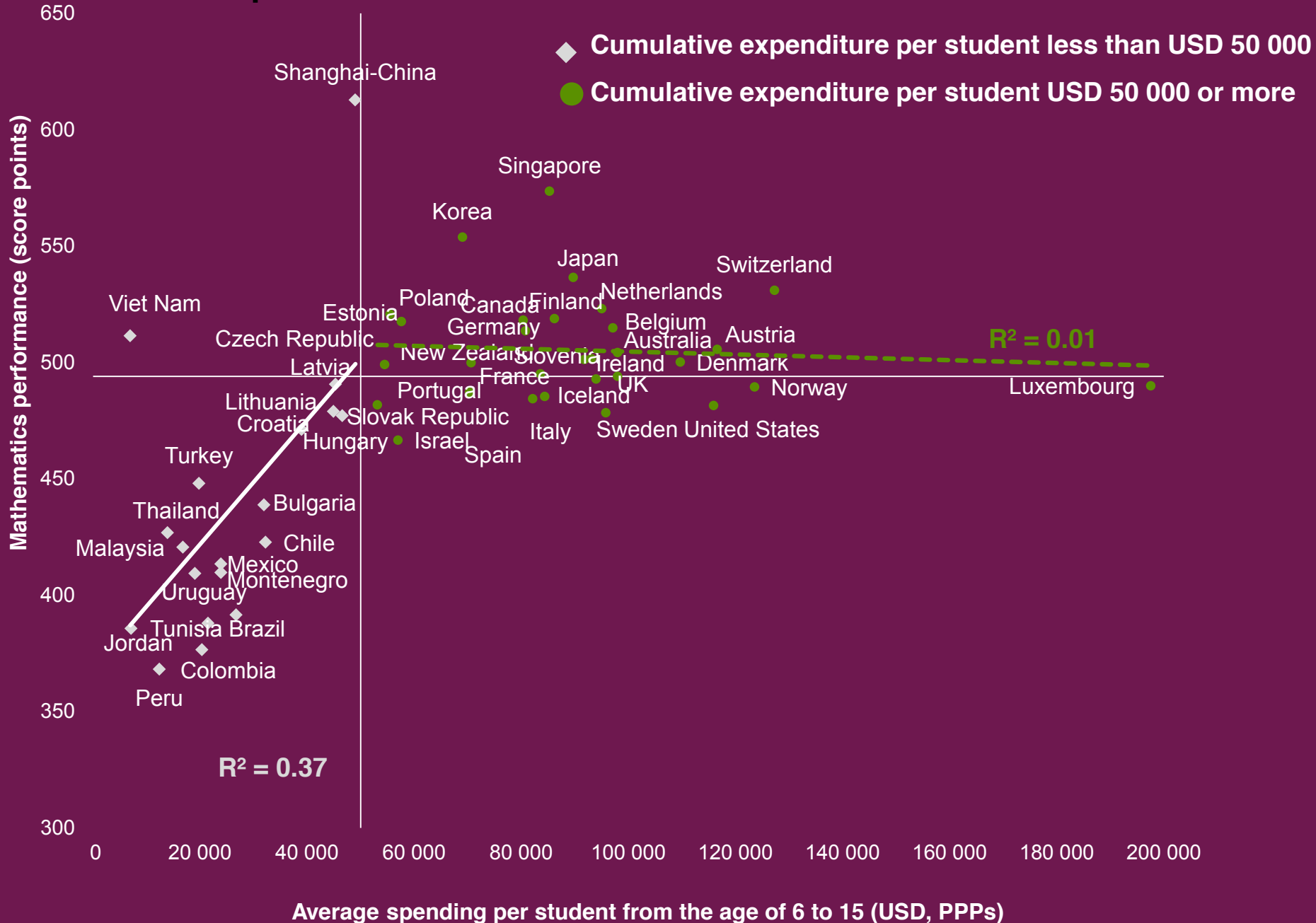
Money makes a difference



- Money can effect on limited outcome
- Among high-income countries, high-performers pay teachers more
- In many countries, more advantaged than disadvantaged students attend after-school lessons

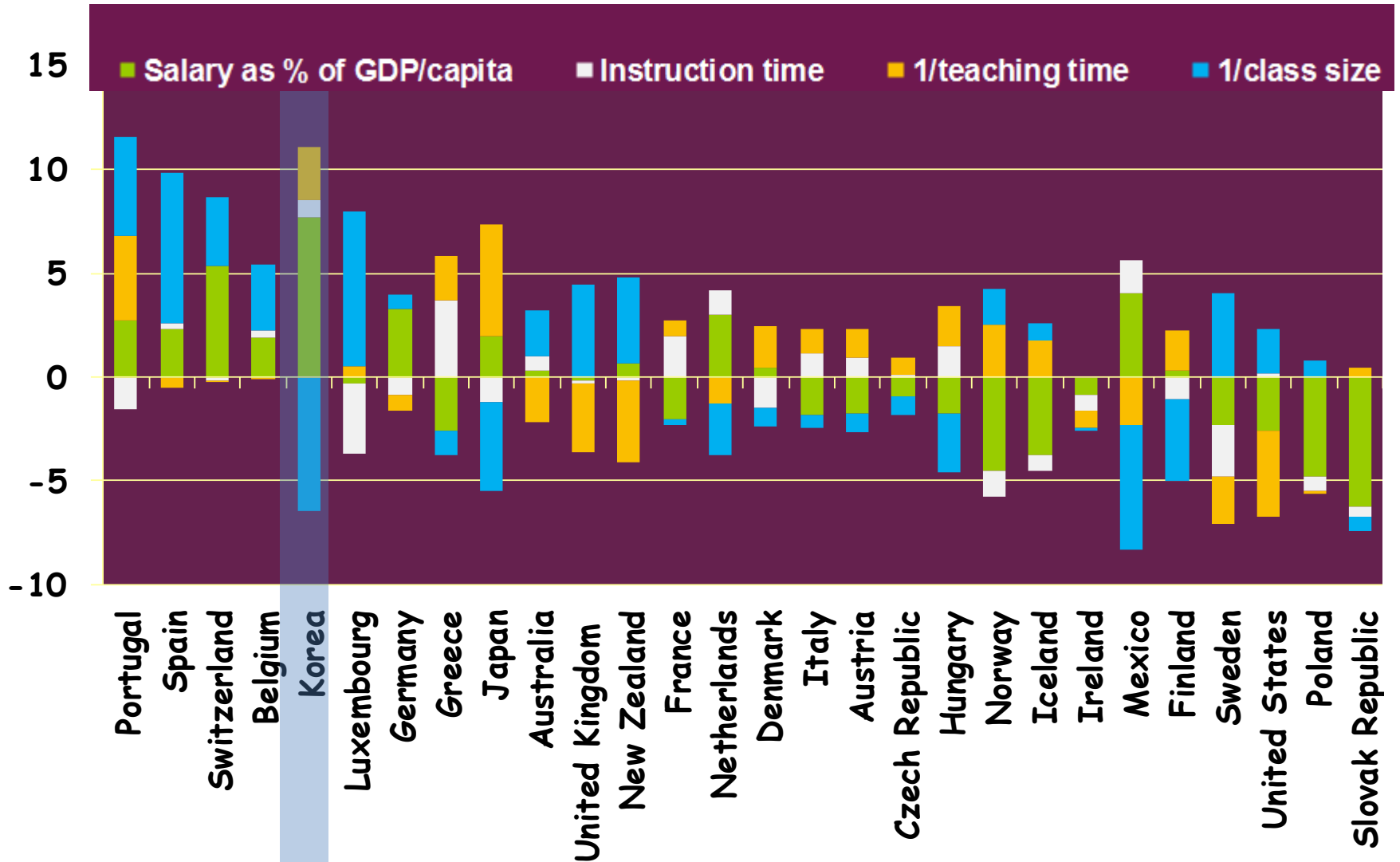
Spending per student from the age of 6 to 15 and mathematics performance in PISA 2012

Fig IV.1.8



Contribution of various factors to upper secondary teacher compensation costs, per student as a percentage of GDP per capita (2004)

Percentage points



Quality assurance and school improvement

Percentage of students in schools whose principal reported that their schools have the following for quality assurance and improvement:



Governance matters



- Schools with more **autonomy over curricula and assessments** tend to perform better than schools with less autonomy where they are part of school systems with more accountability arrangements and greater teacher-principal collaboration in school management

PISA implications: What it all means

Average education systems

Student inclusion

High performers

Some students learn at high levels

All students need to learn at high levels

Curriculum, instruction and assessment

Routine cognitive skills, rote learning

Learning to learn, complex ways of thinking, ways of working

Teacher quality

Few years more than secondary

High-level professional knowledge workers

Work organisation

'Tayloristic', hierarchical

Flat, collegial

Accountability

Primarily to authorities

Primarily to peers and stakeholders

III. Pedagogic ideas from Korea

- Pre-school teacher preparation system
- Professional development
- Teachers' salary
- Teaching and learning in the classroom
 - State control over curricula, grades
 - Smart Education
 - Free Semester

Why teaching is an attractive job in Korea?

Talented young people, stay long in profession

- Freedom in work
 - Decision power over instructions in classroom
- Flexible time
 - Long vacation, shorter working hours
- Relatively well paid
- Excellent fringe benefit: good pension
- Social respect
- Stable government job: guaranteed to work till retirement age (62yrs)

Pre-school teacher preparation system

Selecting student for education major

- Two types of teacher preparation
 - For primary school teachers: univ. of education
 - For secondary school teachers: university, college of education
- Student selection for education major
 - quality in – quality out model
 - Top students can get admission
 - Highly competitive in most of universities
- Top 15% students from other colleges can get in

Education for four years: theory and practice

- Theory
 - Knowledge of subject domain
 - Pedagogy of domain: curriculum, instruction, evaluation, class management, etc.
- Practice
 - Two weeks school visit in junior year
 - One month practicum in senior year
- Teaching license of 2nd degree upon graduation
- High entry to get a teaching position

Professional development

- PD is required for all teachers
- Teachers need to prove PD attainment periodically
- Government supports teachers PD financially and administratively
- Promotion requires PD
 - Head teachers
 - Vice principals
 - Principals
 - Administrative position at governments
 - From 2nd degree license to 1 degree license promotion

Types of PD

Required vs selective

- Required PD
 - Induction to new teachers
 - Promotion
 - New policy orientation
 - New license
- Selective PD
 - To enhance teaching quality
 - Subject domain, specific topics
 - By same subject teachers, voluntary group of teachers

Organizations for PD

- National level: for principals, newly pointed officers, administrators
- Local level: majority PD
- University level: new license, degree promotion
- Special organizations: arts, special areas

- On line vs off line PD

http://ttis.edunet4u.net/edutts/view.board?data_grp=1&data_div=13&data_cd=7d9df684d266645b5fe195f4e66ba43f

Teachers' salaries

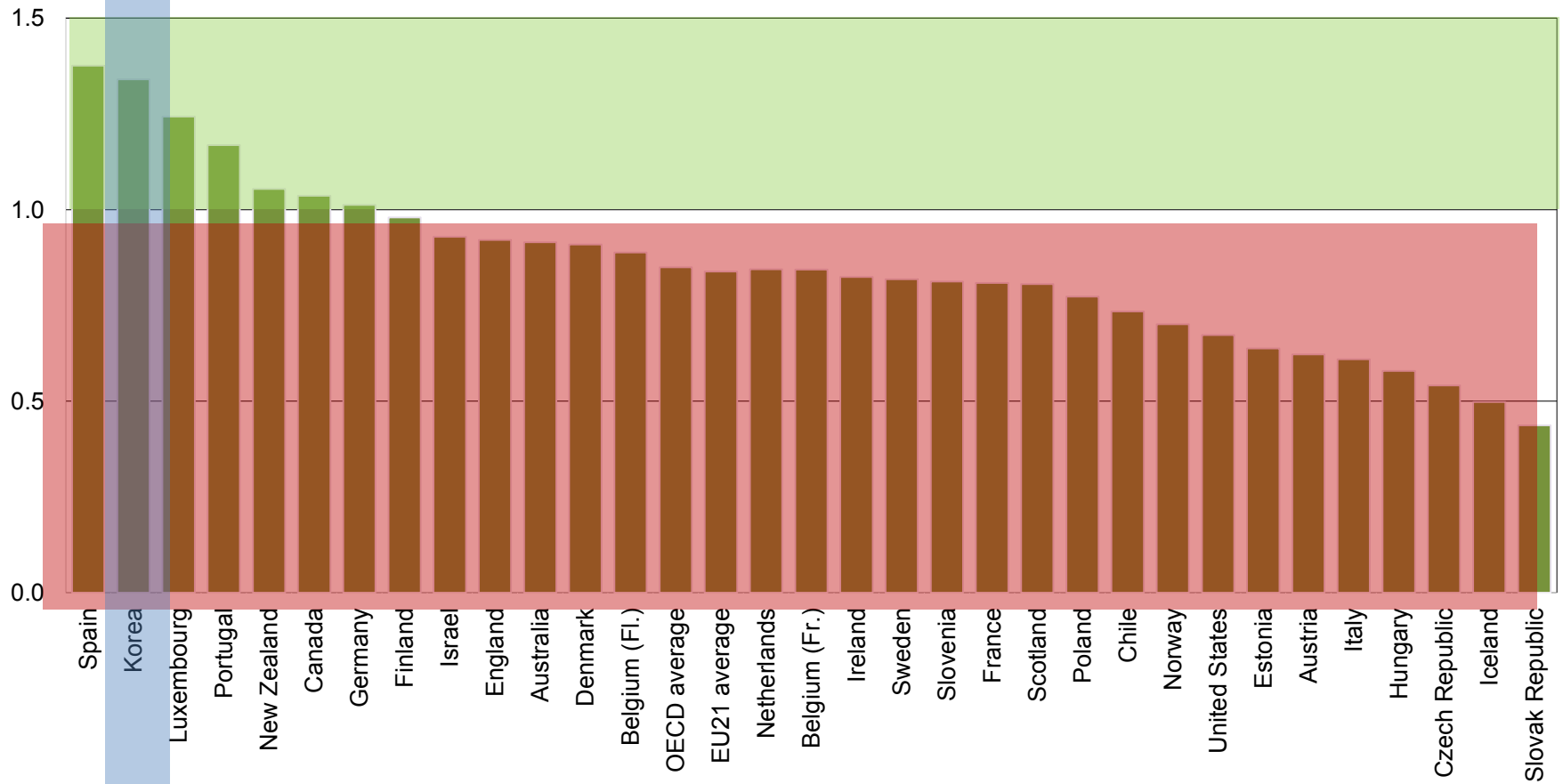
【at Public schools(2012)】

levels		Beginner Annual salary	15 yrs Annual salary	Maximum Annual Salary
Primary	Korea	28,591	50,145	79,631(37yrs)
	OECD ave.	29,411	39,024	46,909 (24yrs)
Lower secondary	Korea	28,485	50,040	79,526
	OECD ave.	30,735	40,570	48,938
Upper secondary	Korea	28,485	50,040	79,526
	OECD ave.	32,255	42,861	51,658

2012 PPP currency rate 1\$ = 913.35 won

Maximum salary: Korea 37 years, OECD 24 years

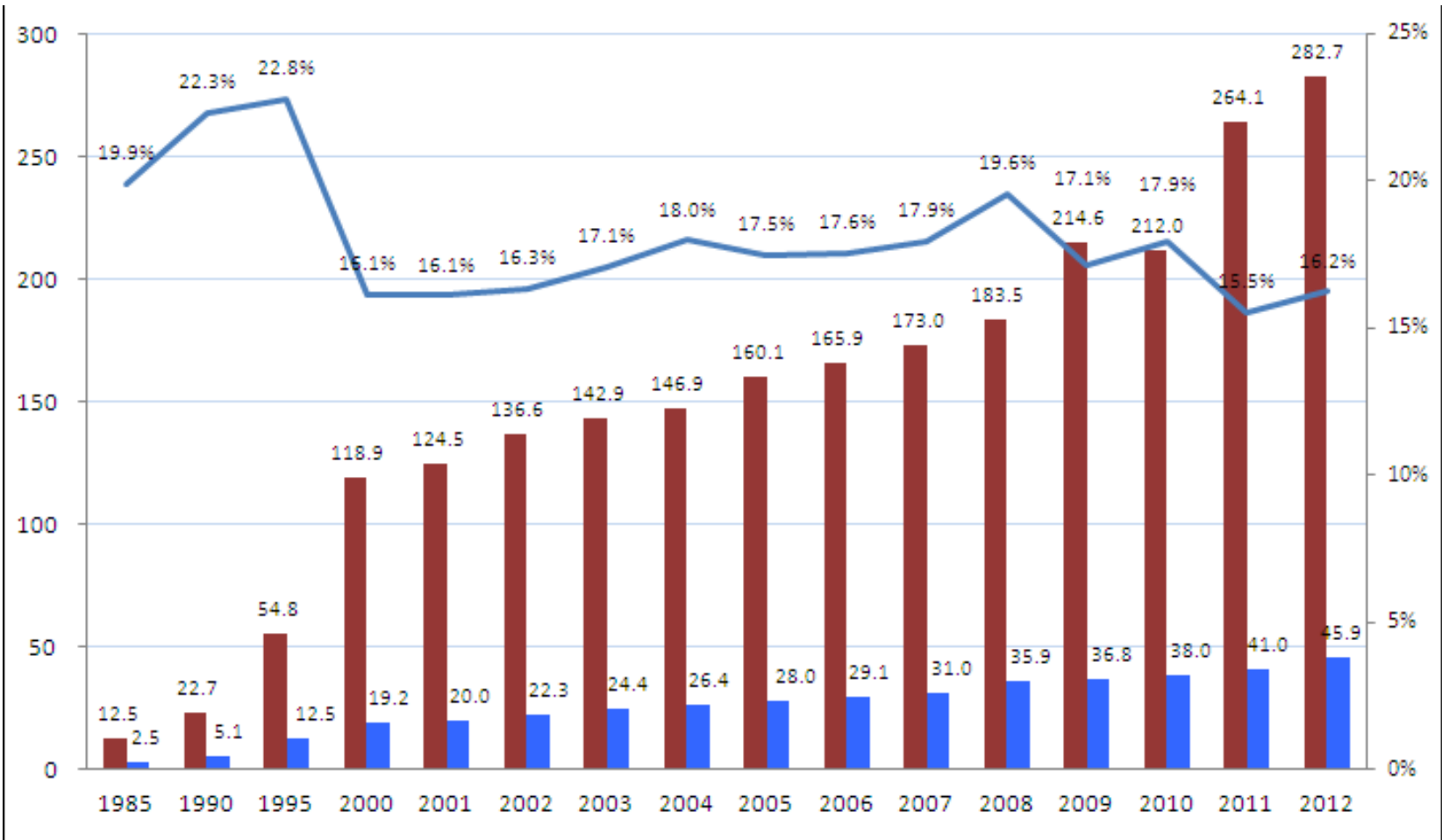
Ratio of teachers' salary to earnings for full-time, full-year workers with tertiary education aged 25-64 (2011 or latest available year)



Budget for Education

(1 trillion won)

(Percent)



The Government's budget
 Ministry of Education's budget
 Ministry of Education's budget rate compared to the Government's budget

※ Source : KHEI(2013), KHEI Statistics, No.5(2013.5.31)

<http://khei-kheistory.com/600>

Educational Finance

as of 2012

- **One year budget**

- 4.90 % of the GDP

- 7.6% of the GDP including informal education
growing yearly

	2000	2005	2011
Korea	6.1	6.7	7.6
OECD	5.4	5.7	6.1

- 16.2 % of total Government budget

- **Expenditure**

- Elementary and secondary education: 72.03%

- Higher education: 19.1%

Teaching and learning in the classroom



- State control over curricula, grades
- Smart Education
- Free Semester

Governance over curricula, grades

- National educational informational system NEIS
 - Due to the high competition to enter the elite university
 - Students' academic performance records are sensitive
 - Performance based portfolio
- For more flexibility to schools, major projects undertaken
 - Smart Education
 - Free Semester

Teaching hours (primary & lower secondary) less than 7000 hours

OECD average 7751 hours

Number of intended instruction hours in public institutions (2011)

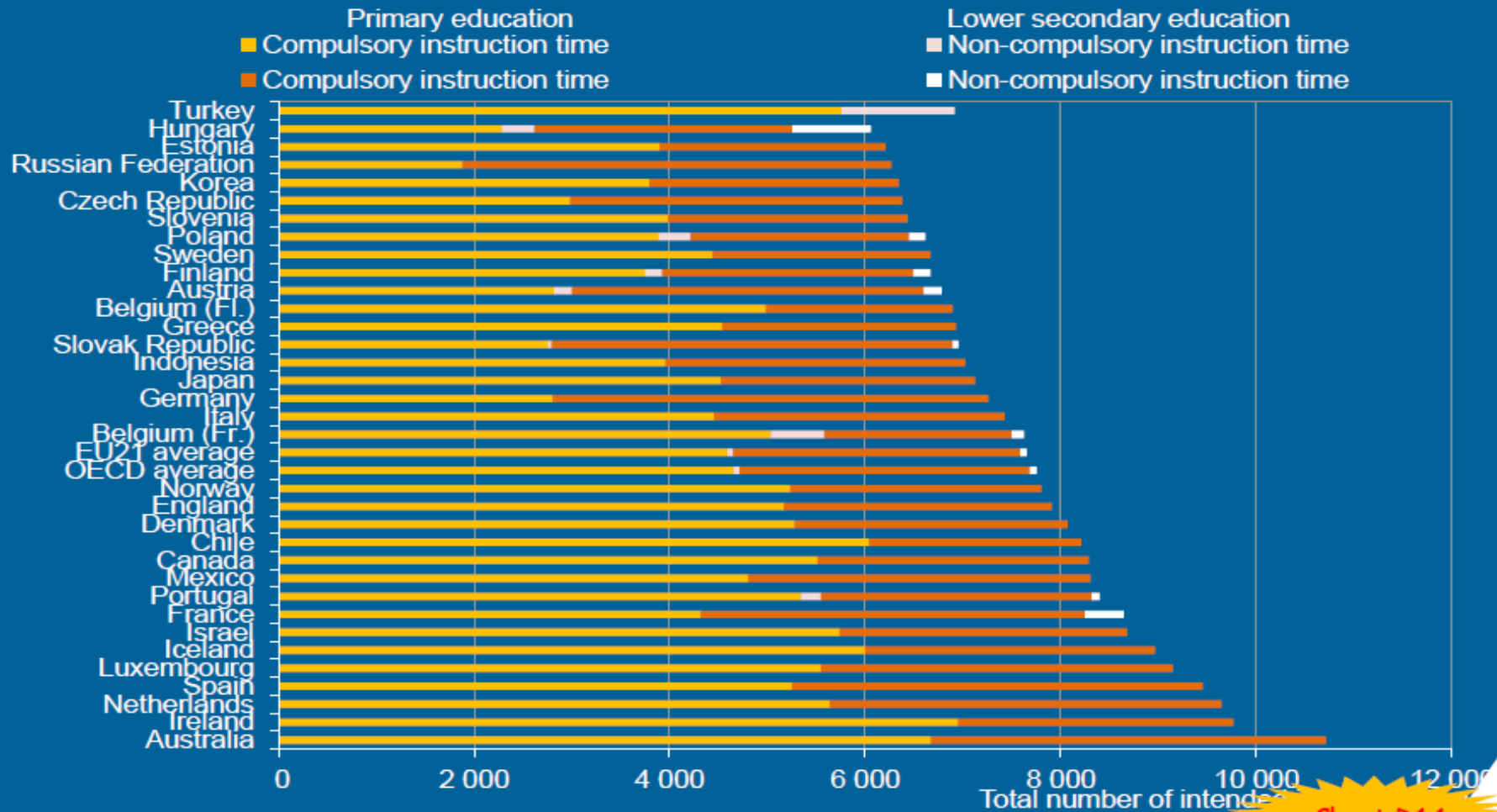


Chart D1.1

Quiz

- This technology is the worst tool that men have invented
- This tool makes you not to use your memory



Plato

Smart education (2011)

SMART education is the smart learning environment to promote education 3.0 SMART education is to innovate

- Learning contents
- Pedagogy
- Evaluation
- Learning community
- Educational culture



SMART Education : 5 Projects

Educational Contents Development & Application of Digital Textbook

- Phased Development of DT
- Development & Application Smart Learning
- Modification of law & regulations for DT

Instructional Method & Evaluation Activating online class & evaluation

- Activating & promoting online class
- Building online system for learning diagnosis & prescription

Educational Environment Copyright of edu-contents & building safe environment

- Activating the use of contents for public purpose
- Strengthening IT ethical education to solve dysfunction

Strengthening Teachers' SMART Education Competency

- Developing & Implementing SMART education training
- Advancing SMART education training environment
- Developing & arranging manpower for SMART education

SMART
Education

Building the foundation of Cloud Education Service

- Building infrastructure of SMART Education School
- Creating Open market of educational contents
- Developing the standard platform for SMART education

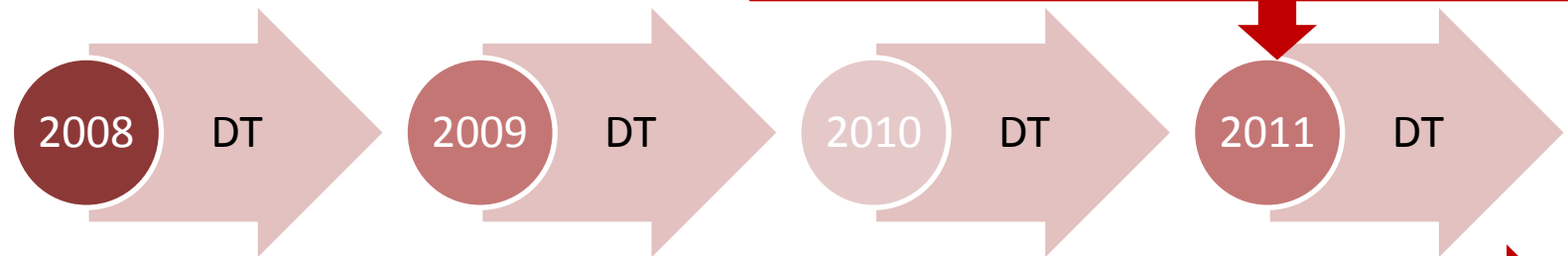
Digital textbook development

Purpose

To explore the effects of digital textbooks on achievement, problem solving skills, and self-directed learning, to measure students' and teachers' satisfaction with digital textbooks

To analyze how to use digital textbooks in teaching and learning activities and how to facilitate various interactions

Quantitative R : October 24, 2011 ~ February 24, 2012
Qualitative Research : December 2011



Conducting previous studies regarding the effectiveness of digital textbooks from 2008

Digital Textbook(DT)

DT changes not only textbooks, classrooms, teachers and students but also schools and other educational environments



Free semester (2013)

- Purpose: opportunities for students to explore their dream and talent to develop 21st century competencies
 - creativity, character building, social skills and self-directive learning skills
- Method
 - exempted from regular mid-term and end of the term examination
 - flexible curriculum & career exploration
 - student-centered activities

Curriculum redesign for free semester

- **Improvement of teaching method**
 - To encourage student participation through various activities
- **Common curriculum (1-4 morning classes)**
 - Subject: Core achievement
 - criteria-based redesign
 - Korean·English·Math: problem solving, communication, debate etc
 - Social studies·Science: experiment, project-based learning etc
- **Selective curriculum (5-7 afternoon classes)**
 - Focusing on students' interest and strength
 - Career-exploration model
 - Club activity model
 - Art & sports model
 - Optional

IV. Challenges

- Equity can not be sacrificed for excellence
 - Equity provides the growth of quantity
 - Quantity provides the room for quality
- Prioritize budget spending
 - Political decision
 - Social consensus over priority
- Best of the past vs the best of the future

Prioritize budget



- Countries spend their money differently on schools...
 - ...and many high-performing school systems prioritise the quality of teachers over the size of classes.

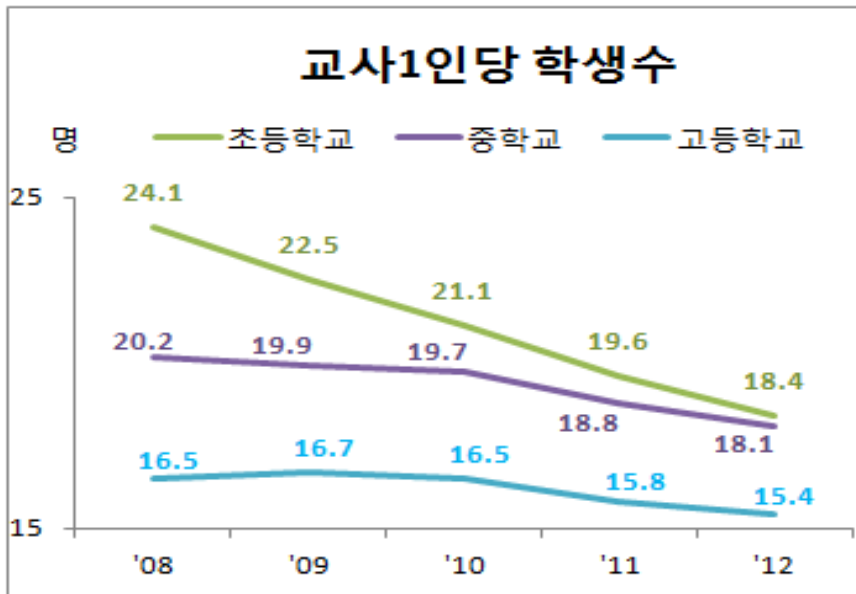
Teacher support vs educational climate

Students per staff

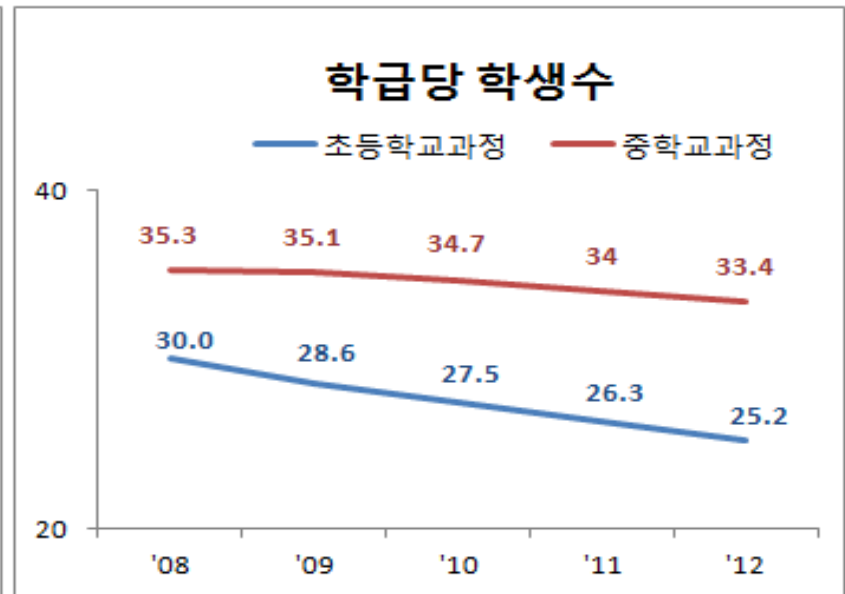
Primary 18.4(15.3), Lower secondary 15.4(13.5), Upper secondary 15.4(13.8)

Over OECD average

Students per staff



Class size



Best of the past , best of the future



- The recipe for the success in the past
 - Competition, Standardization, Frequent Testing, and Privatization
 - In other words, motivation, high goal setting, mastery learning, and diversity
- The recipe for the success in the future
 - Educational reform that can truly cultivate creative, entrepreneurial and globally competent citizens needed in the 21st century

Without data, you are just another person with an opinion

- Schleicher, A. (2013) “PISA 2012: Evaluating school systems to improve education”, OECD
- OECD (2013) “ Education at a glance 2013: OECD indicators, Key findings”
- Education at a Glance 2014, OECD www.oecd.org/eag/eag2014
- Ridwan Maulana, Michelle Helms-Lorenz and Wim van de Grift (2014), “Development and evaluation of a questionnaire measuring pre-service teachers’ teaching behaviour: A Rasch modelling approach”
Paper under review