

The Success of the Finnish Education in the Light of PISA

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JYVÄSKYLÄN YLIOPISTO
UNIVERSITY OF JYVÄSKYLÄ

Finnish Institute for Educational Research, FIER

- A national centre for educational research
- A multidisciplinary research institute based at the University of Jyväskylä
- Established in 1968
- Mission: *Developing education through scientific research*
- A staff of some 80 employees, of which some 50 are researchers and some 30 support staff

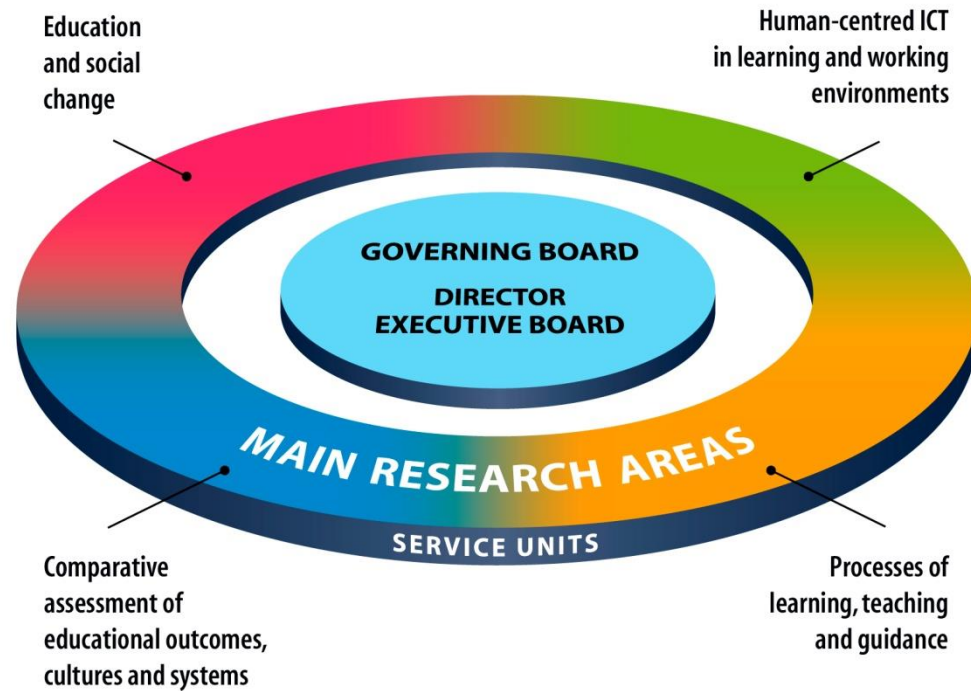


Main research areas

- Comparative assessment of educational outcomes, cultures and systems (COMPASS)
- Education and social change
- Human-centred ICT in learning and working environments
- Processes of learning, teaching and guidance
 - Learning and teaching in transformation
 - Learning, education and working life

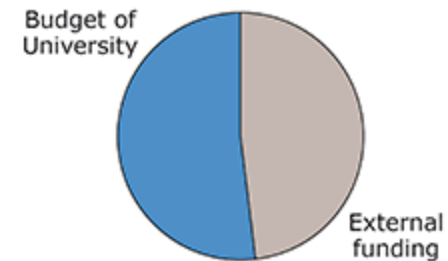
- Methodological research and development
- Research communication

Organization



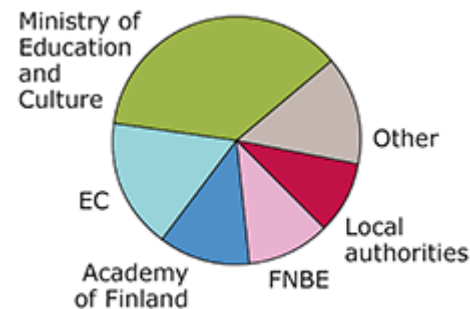
Funding 2013

- An annual budget of approx. €5.5 million
 - 52 % University of Jyväskylä
 - 48 % external funding



External funding 2013

- [Ministry of Education and Culture](#) € 956 800
- [European Commission](#) € 448 900
- [Academy of Finland](#) € 312 600
- [FNBE \(The Finnish National Board of Education\)](#) € 278 700
- Local authorities € 253 000
- Other € 373 700



Key figures

- has brought out over 1,000 books and serial publications during its existence
- annually, its staff
 - publish 100 scientific papers
 - hold over 200 presentations
 - receive 250 expert assignments



Publications

- Books series
- Research Reports series
- Occasional Papers series
- Working Papers series



Publications

- *Finnish Journal for Education Kasvatus*
- *Journal of University Pedagogy*
- The Finnish editor of the *Scandinavian Journal of Educational Research*



International collaboration

- EU
- OECD
- International Association for the Evaluation of Educational Achievement (IEA)
- European Educational Research Association (EERA)
- European Association for Research on Learning and Instruction (EARLI)

International collaboration

- American Educational Research Association (AERA)
- Consortium of Higher Education Researchers (CHER)
- International Association for Educational and Vocational Guidance (IAEVG)

In addition, the FIER has worldwide contacts and collaboration with the leading research groups, institutions and universities.



PISA 2012 in nutshell

- 65 countries participated
- 510 000 students completed the test
- Mathematics as a major domain
- Computer based assessment in problem solving

Sample in Finland

- 311 schools
- 10 157 students
- Response rate 90%
- Oversample of Swedish speaking schools and students with immigrant background

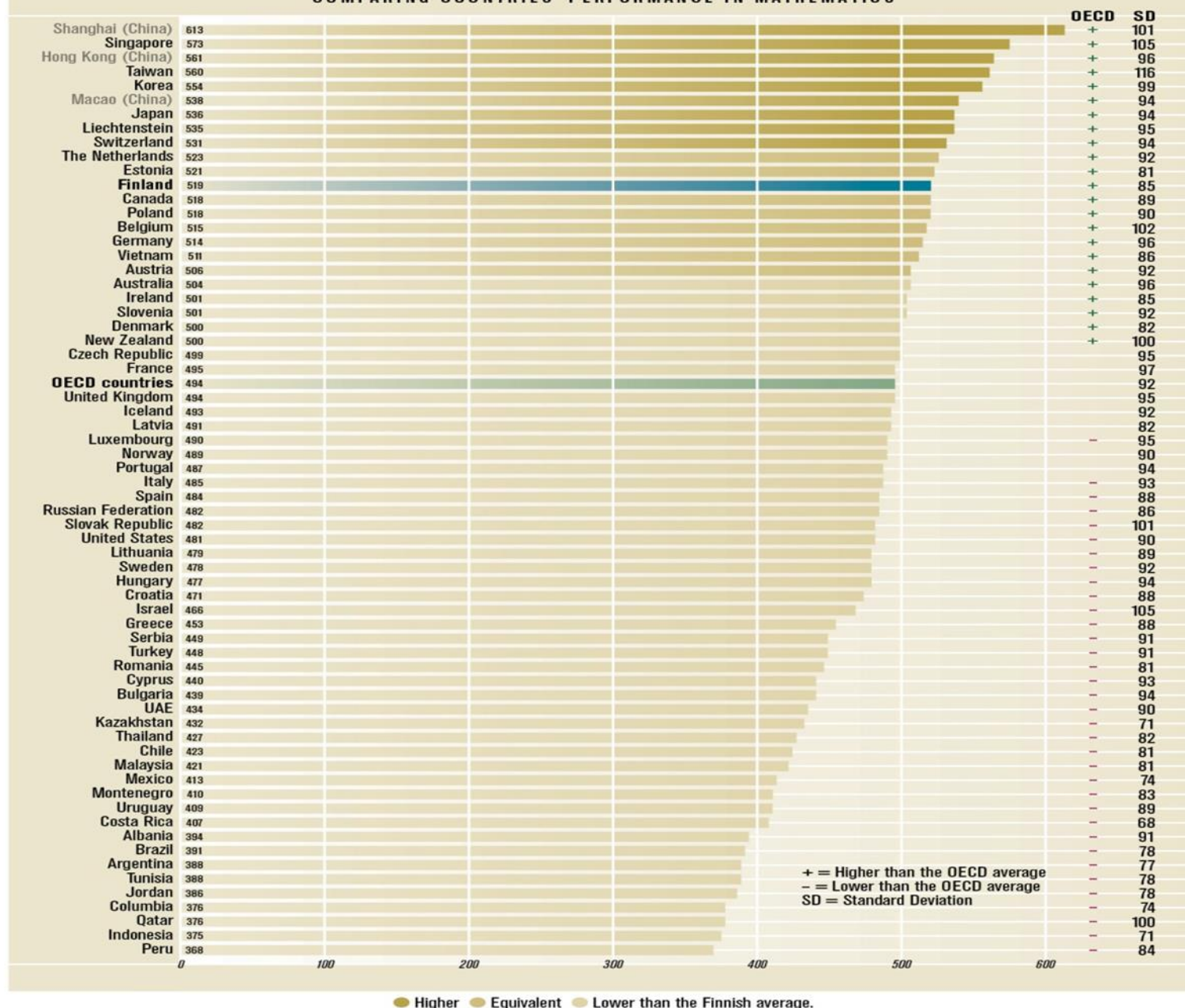


Mathematical literacy in PISA

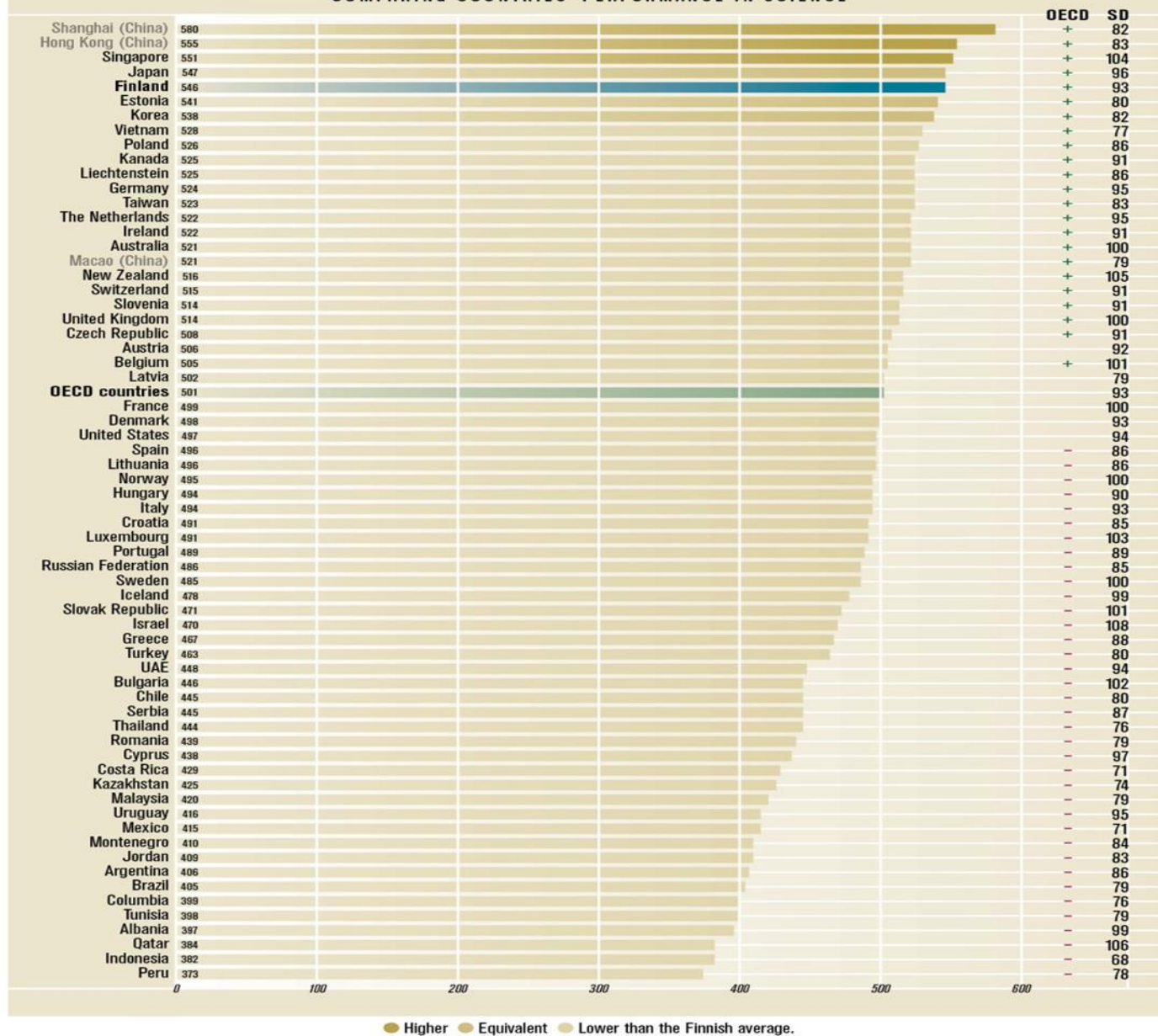
Mathematical literacy is an individual's capacity to formulate, employ, and interpret mathematics in a variety of contexts. It includes reasoning mathematically and using mathematical concepts, procedures, facts and tools to describe, explain and predict phenomena. It assists individuals to recognise the role that mathematics plays in the world and to make the well-founded judgments and decisions needed by constructive, engaged and reflective citizens.



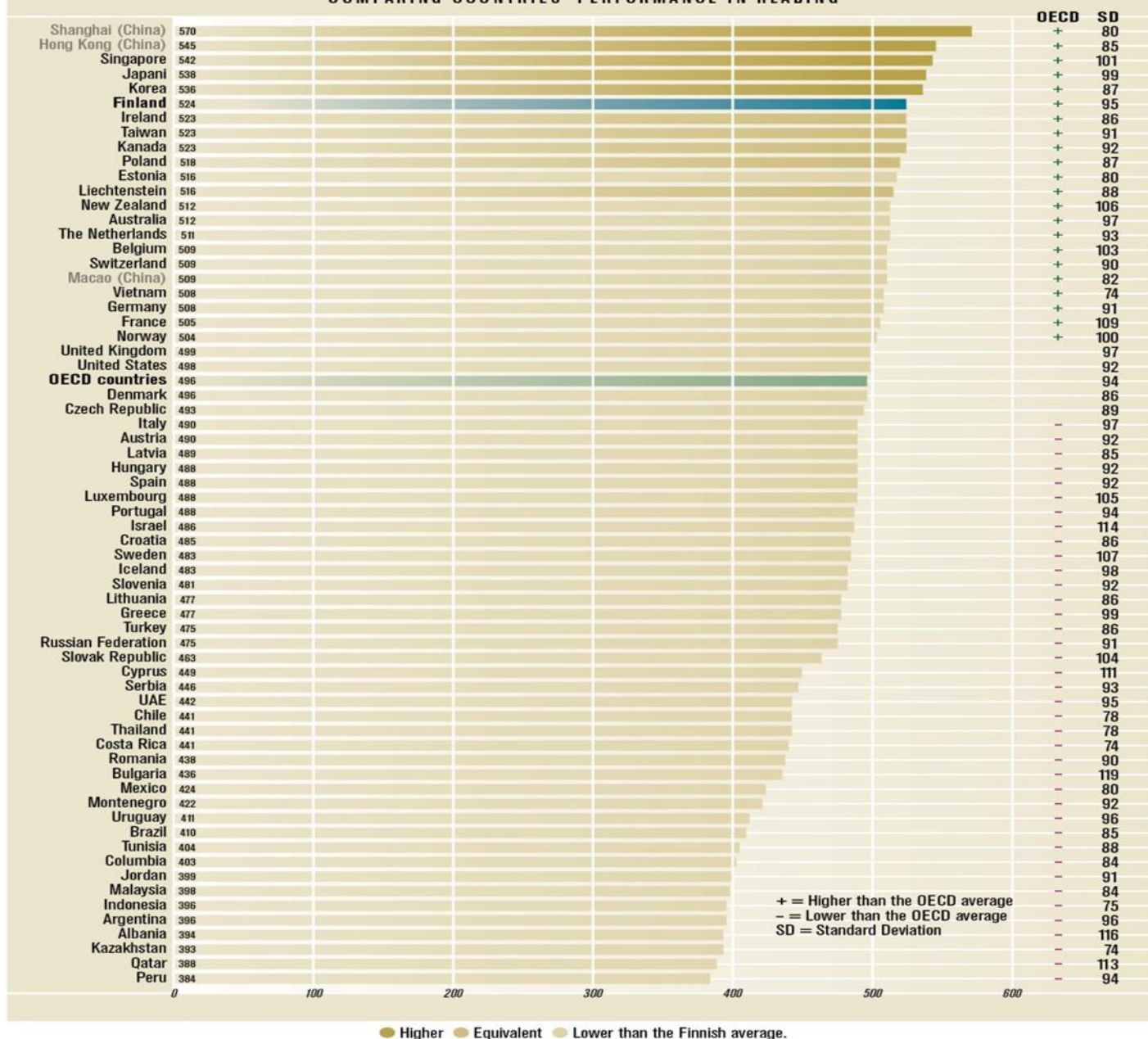
COMPARING COUNTRIES' PERFORMANCE IN MATHEMATICS

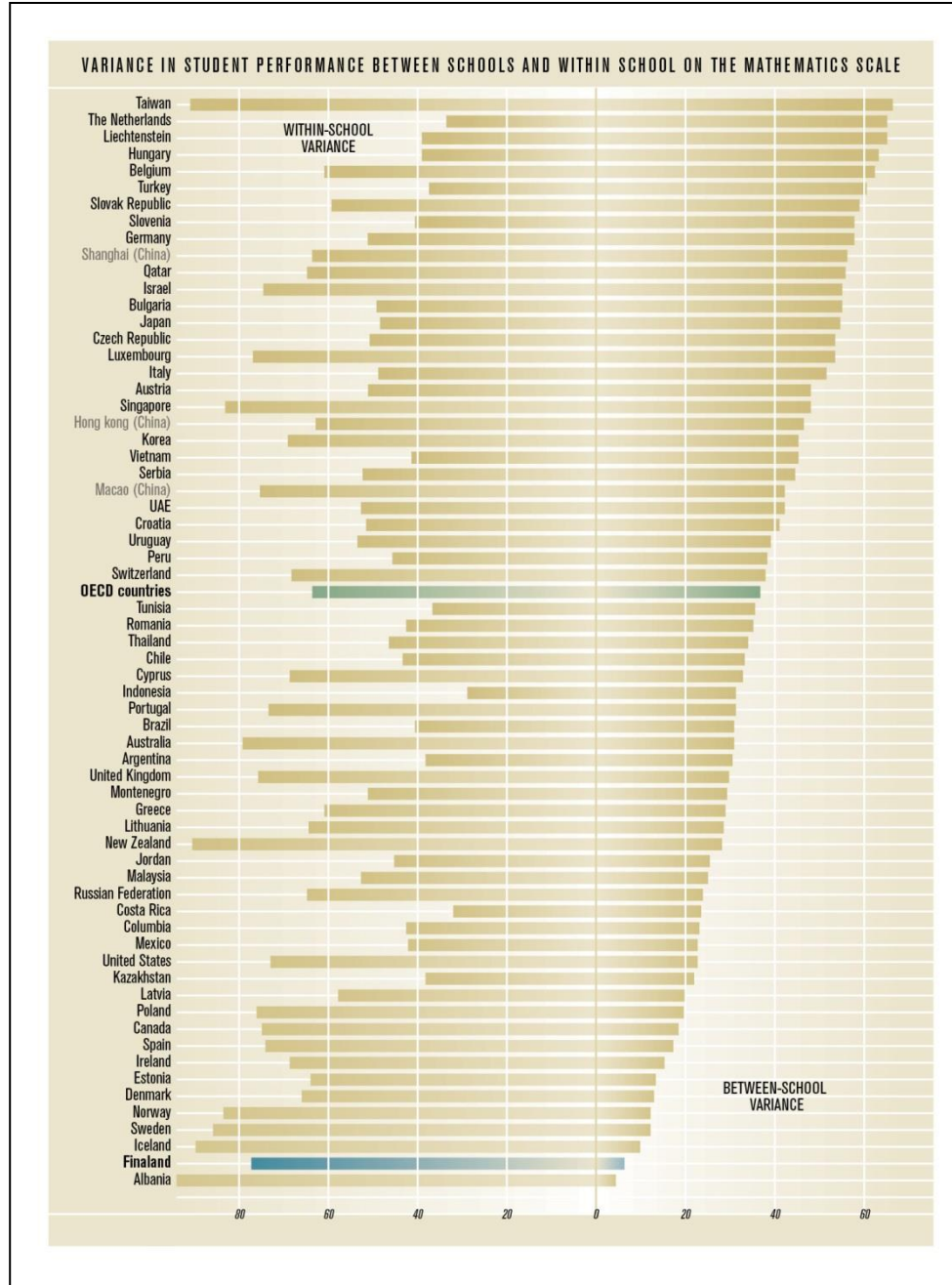


COMPARING COUNTRIES' PERFORMANCE IN SCIENCE

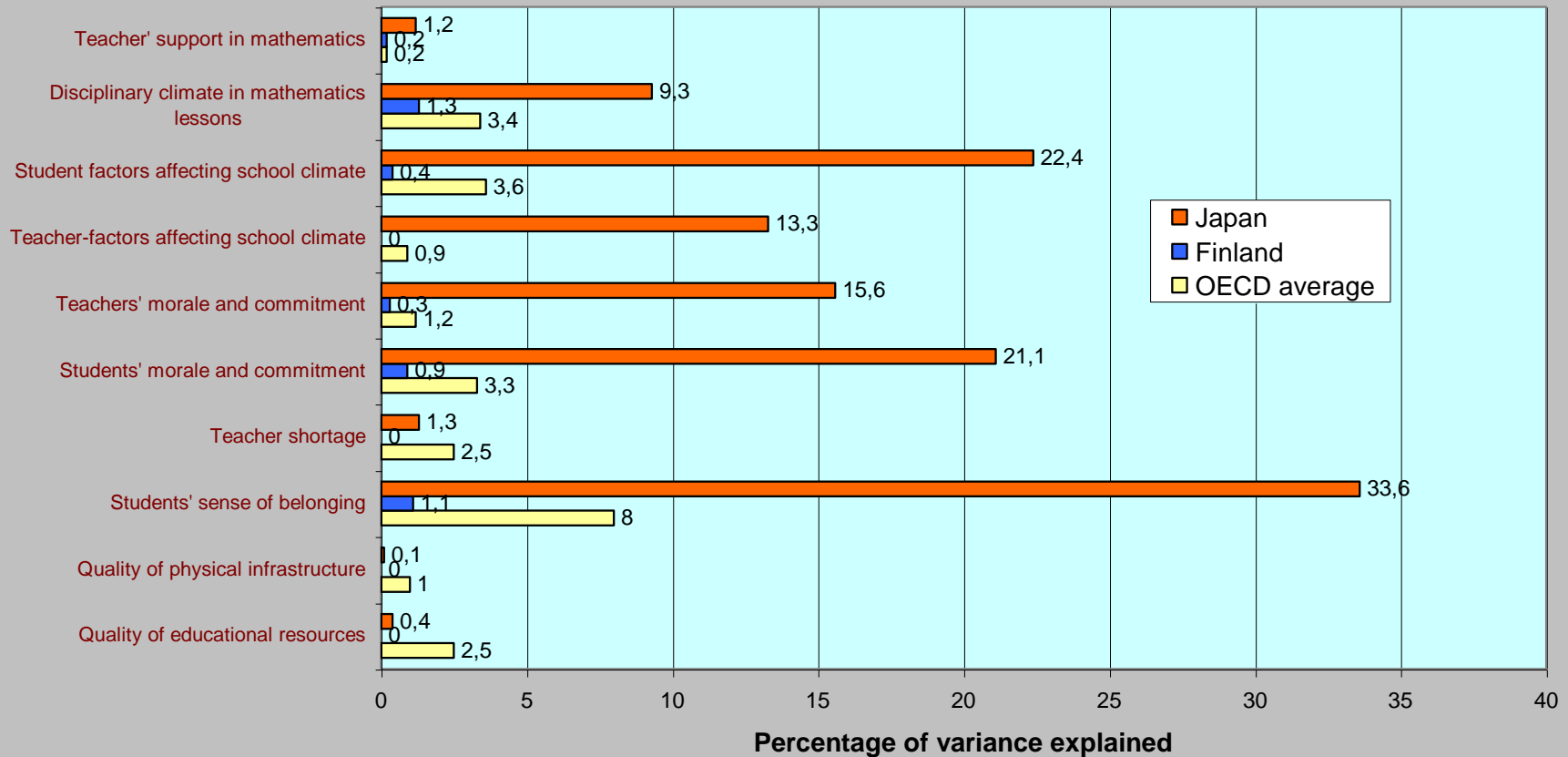


COMPARING COUNTRIES' PERFORMANCE IN READING

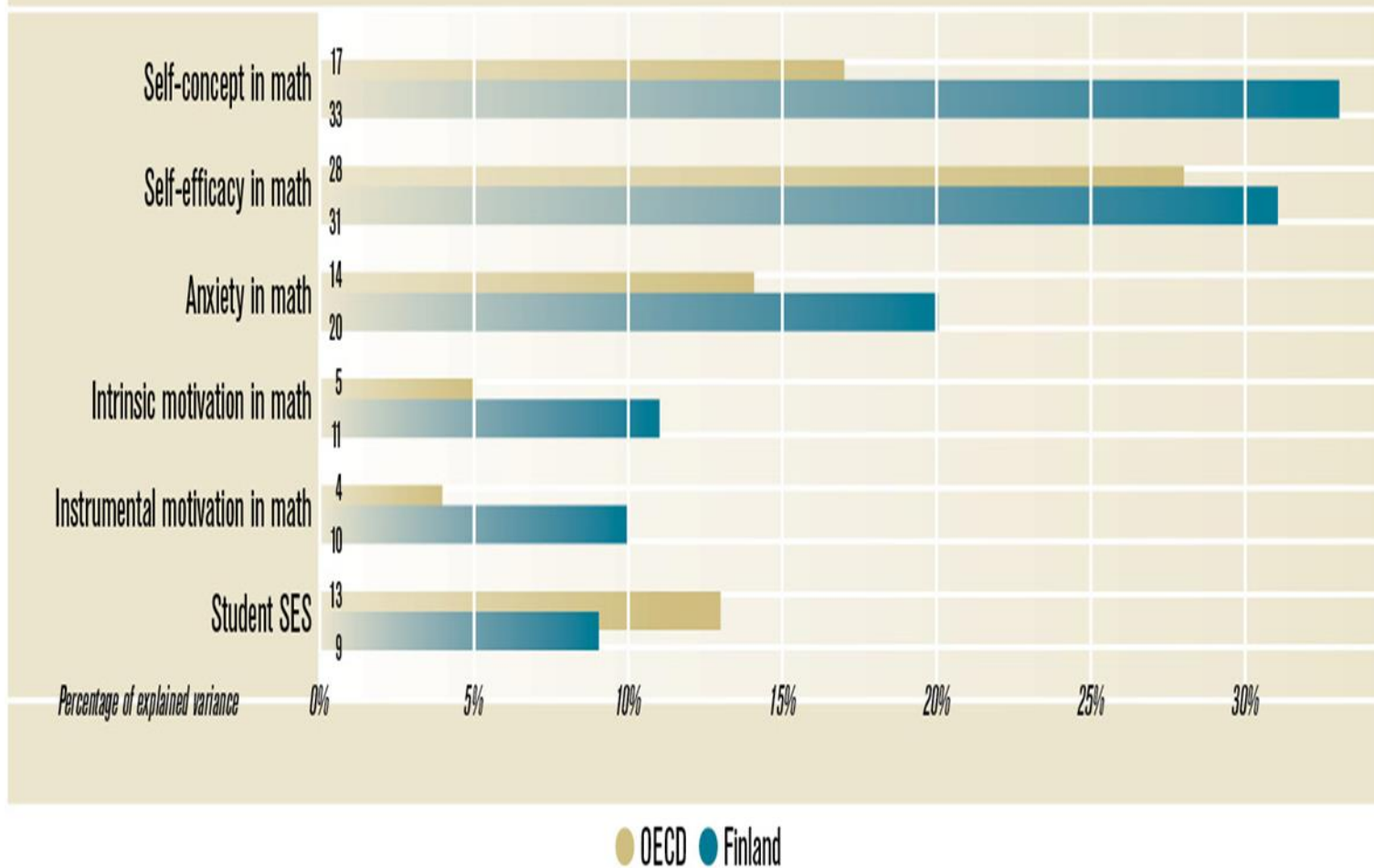




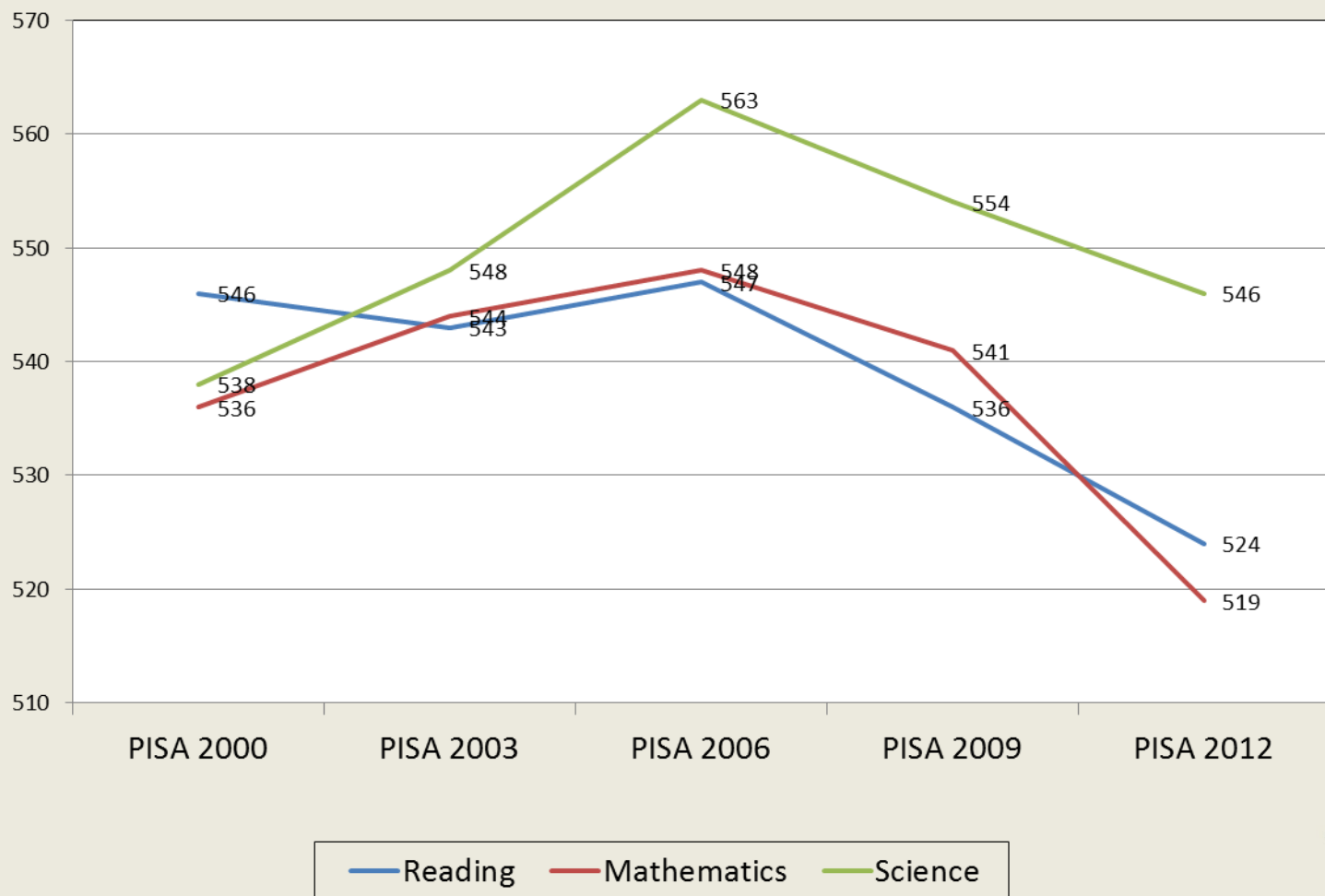
School level factors explaining achievement in mathematics



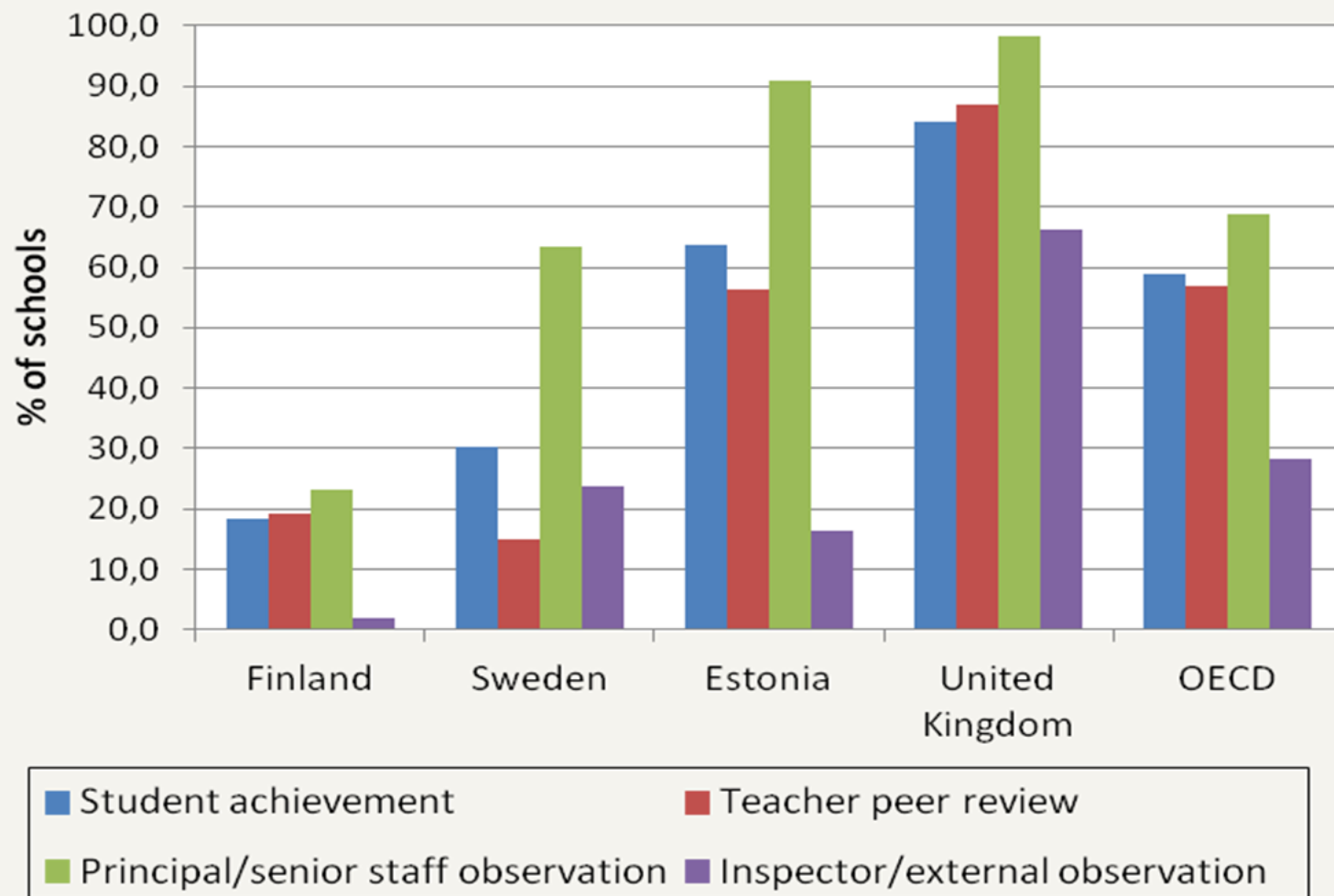
BACKGROUND FACTORS EXPLAINING VARIANCE IN STUDENTS' MATHEMATICS PERFORMANCE IN FINLAND AND OECD



AVERAGES OF THE THREE DOMAINS



Evaluating teachers' practices



Standards and evaluation

Uniform national evaluation criteria for each subject at the 9th grade (recommendation)

Sampling-based national assessment in the core subjects

No nation-wide tests/examinations in the comprehensive school

No school inspections after the early 1990s

Self evaluation of schools, teachers and students

Quality, trust and outcomes



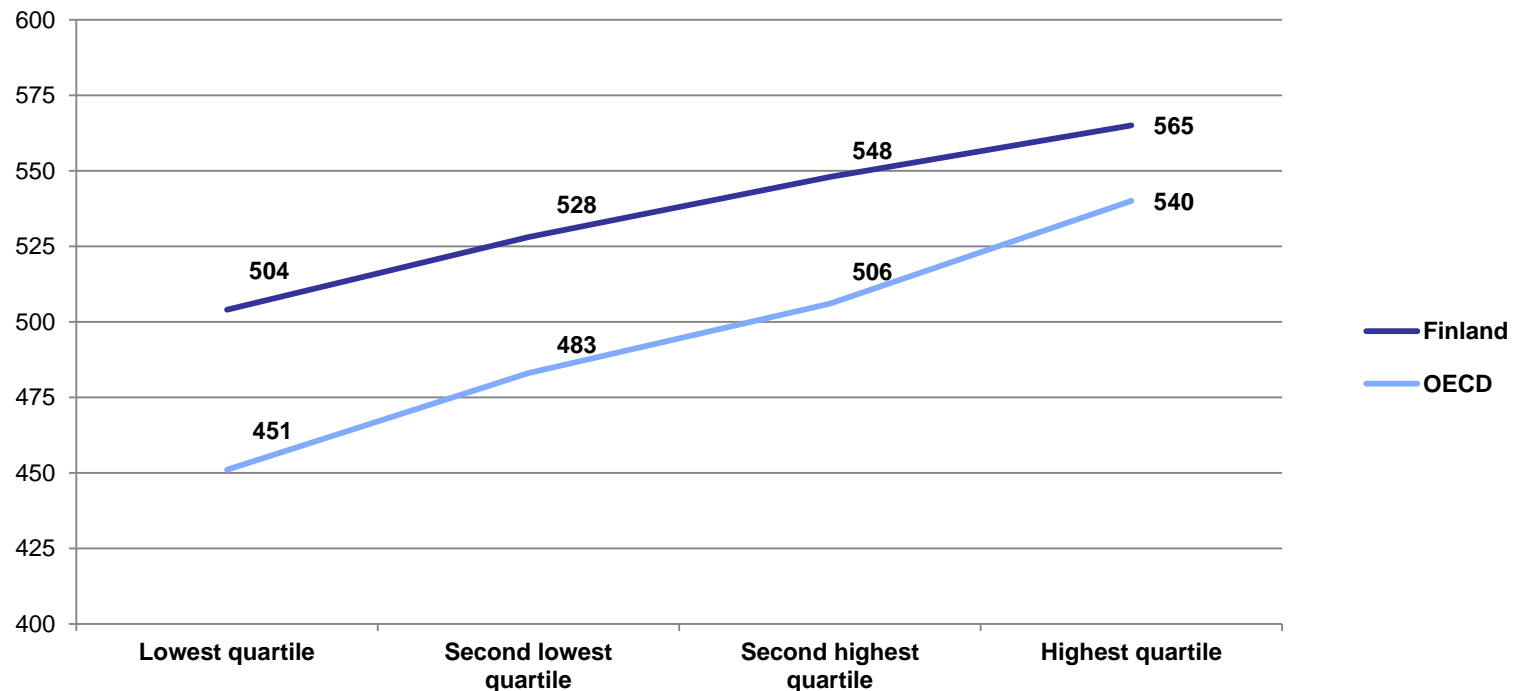
Pedagogical philosophy

- child-centeredness, equity and trust

- ✓ **Child-centeredness**
 - School is for every child; has to adjust to the needs of each child
- ✓ **Equal opportunities for all to education irrespective of place of residence, gender, socio-economic background, native language**
 - Special support to the weak; removing obstacles to learning especially among students from disadvantaged backgrounds
- ✓ **Culture of trust**



Socio-economic background and reading performance in Finland and OECD countries in PISA 2009



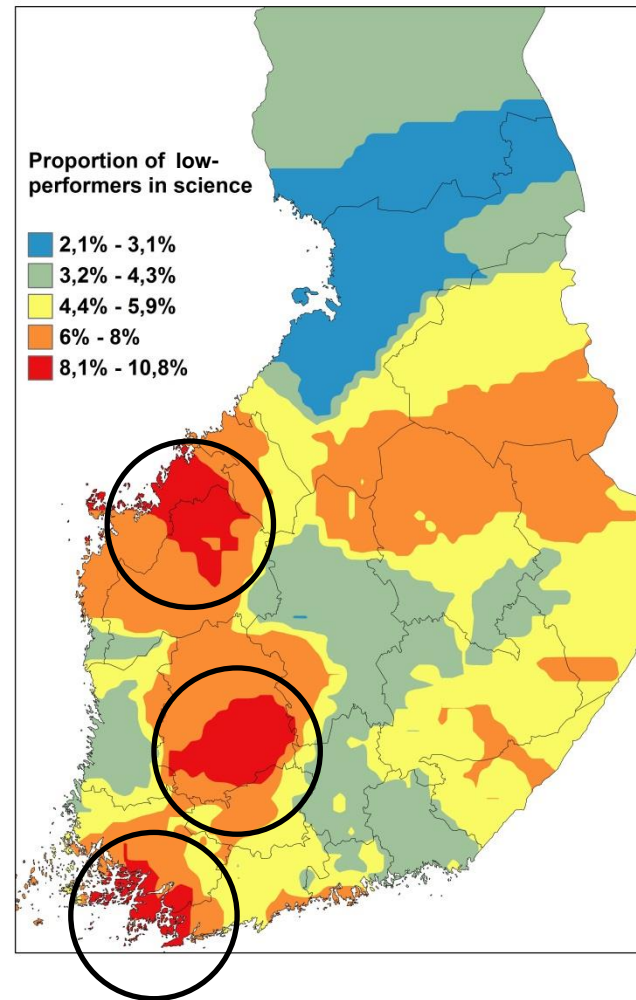
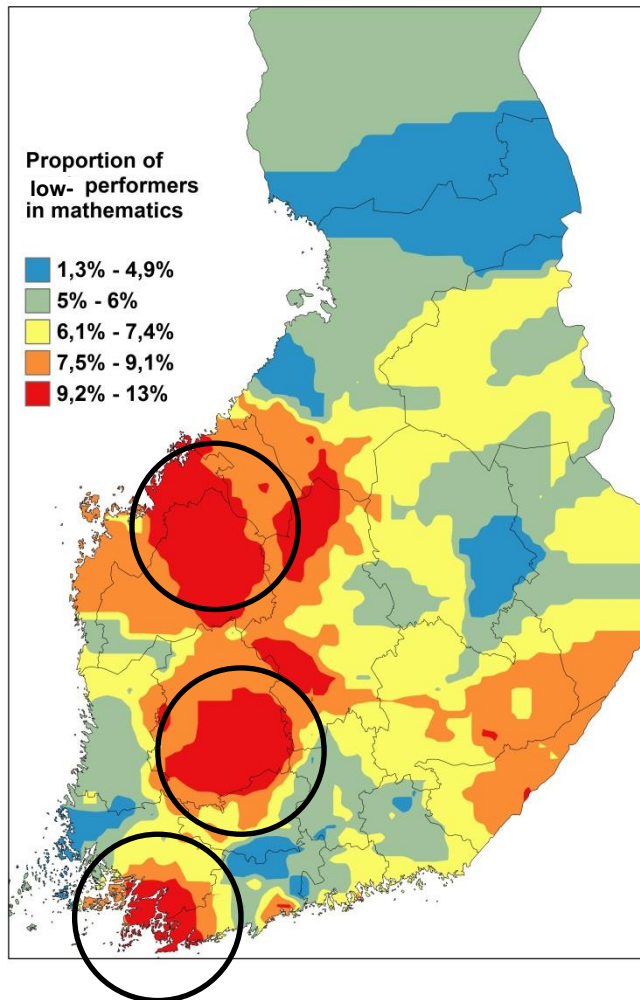
In Finland, much smaller difference between students with the lowest and highest socio-economic background than in OECD countries on average

Comprehensive school

- ✓ **Non-selective, uniform: no tracking, no streaming**
 - Core programme identical to all
 - Heterogeneous groups
 - Group size must be small (18-22 students)
- ✓ **Equal access to a good school**
 - School network: c. 2900 comprehensive schools
 - "The nearest school is the best school"
 - No elite schools; very few private schools
- ✓ **Publicly funded; free of charge**
 - E.g. free school lunch
- ✓ **Decentralization**
 - Flexible school-based, teacher-planned curriculum
 - No centralized examinations, standardized tests
 - Teacher-based assessment

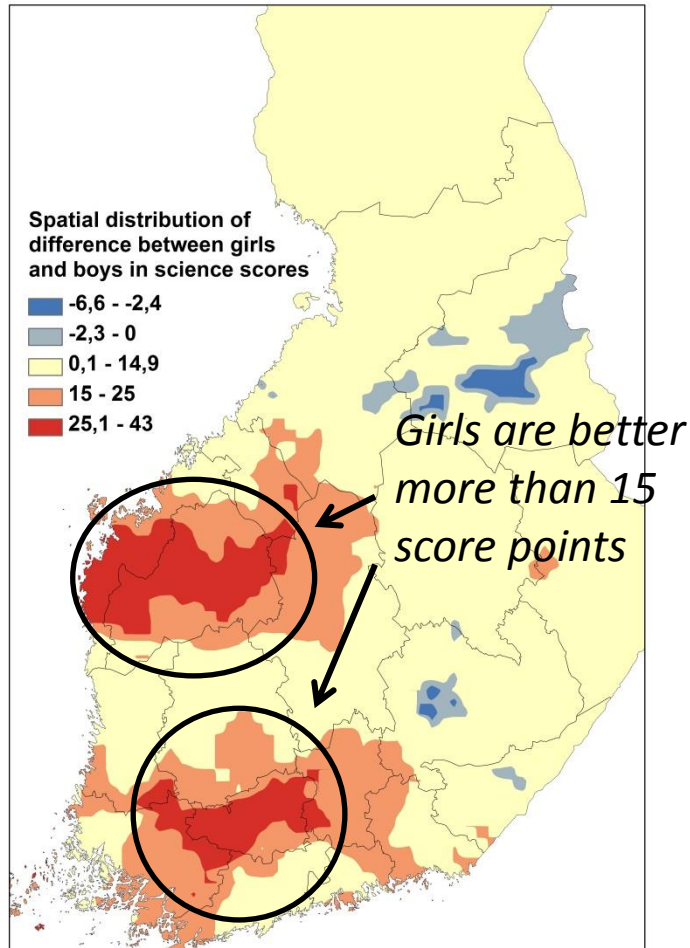


Low-performers in mathematics and science

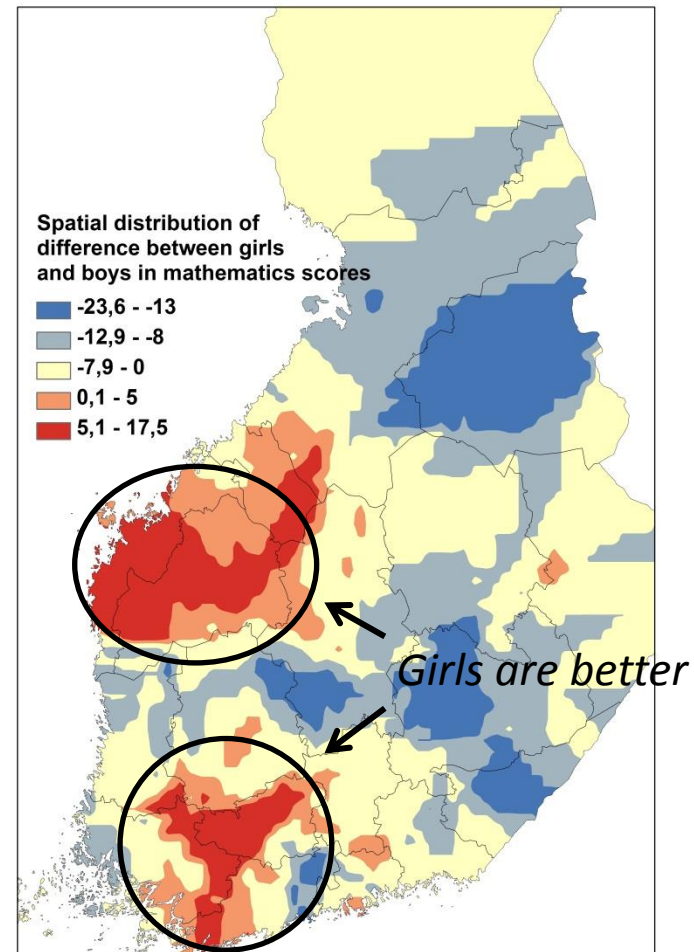


Gender and regional equality

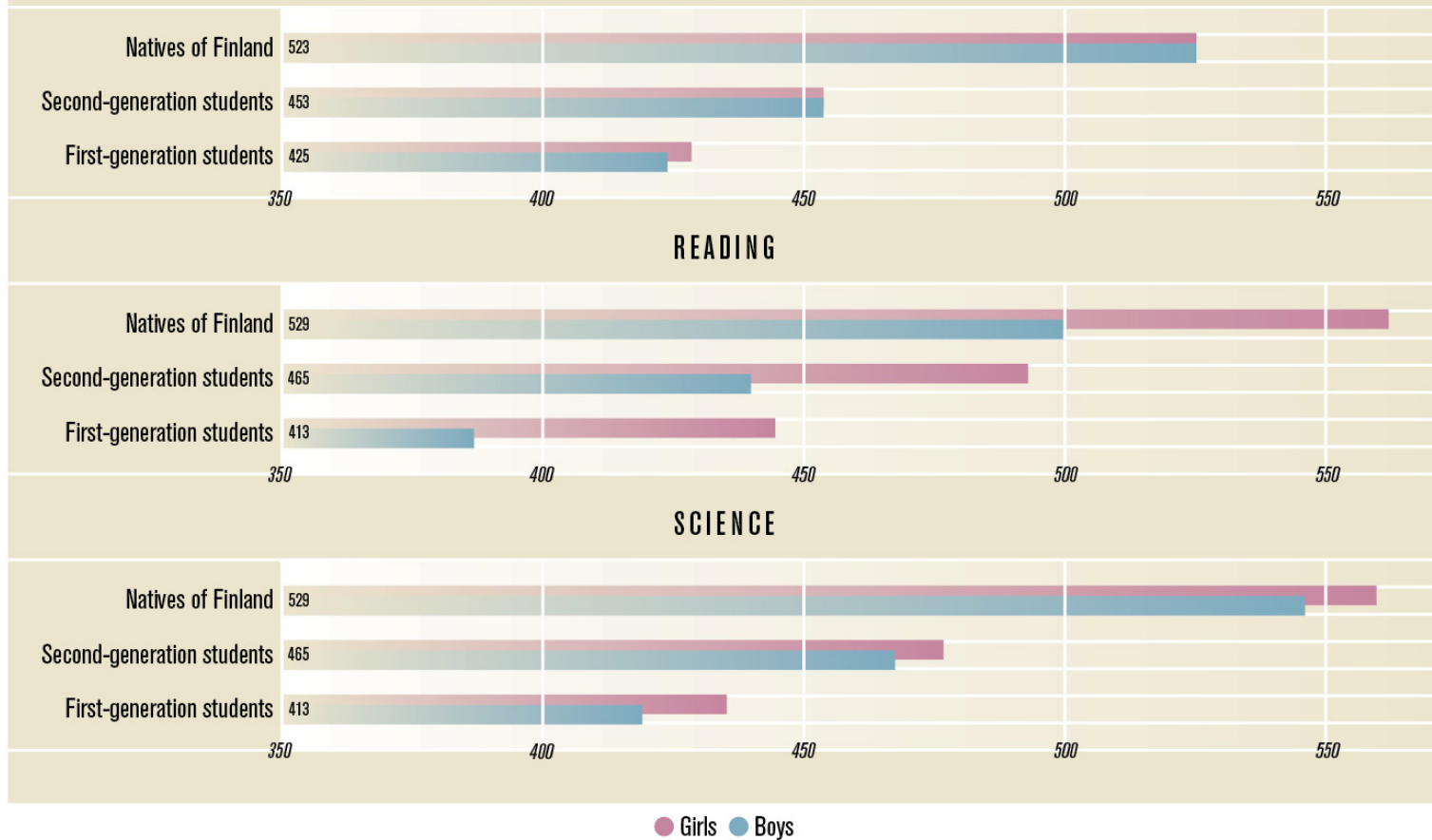
Science



Mathematics



IMMIGRANT STUDENTS' PERFORMANCE IN FINLAND - MATHEMATICS



"Theory of Finnish PISA success and decline"

- Nation was splitted during 1918 by civil war
- The second world war and the post-war reconstruction partly unified people
- The total solution of incomes policy (from 1968->), common view on salary, income distribution and social policy
- School reform (1972, 1983, 1998)
- Relatively high cultural and societal uniformity
- Low immigration rate

- Finnish school system has been taking the form so as to effectively educate culturally and socially quite homogeneous students - BUT
 - Rate of immigrants increases
 - Cultural diversity increases also among original population
 - Societal inequality and social problems increase - SO
- > School system can't offer meaningful learning environment for increasing group of "different students"