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Programme for
International Student
Assessment (PISA)

Organisation for
Economic
Co-operation and
Development (OECD)

No one left behind



What is PISA?

- Programme for International Student Assessment
 - What? Assessment of competencies in key domains of mathematics, reading and science. To what extent do students demonstrate the knowledge and skills needed for their future lives?
 - Who? 15-year-old students (regardless of school grade or type)
 - When? 2000 (Reading) and 2003 (Mathematics). 2006 (Science), 2009 (Reading)....
 - Participating countries? 41 in 2003, 56 in 2006.
- A measure of educational outcomes nearing the end of compulsory education
 - Not only achievement, but also how well prepared students are for life-long learning (attitudes, engagement, learning strategies, use of computers)
 - How these outcomes are influenced by students' backgrounds



How familiar are 15-year-olds with computers?

- Information on students' familiarity with computers in PISA 2003
 - All OECD countries except France, Luxembourg, the Netherlands, Norway and Spain administered a 5 minute ICT questionnaire
 - All school principals provided information on computing resources in their schools
- Results published in *Are students ready for a technology-rich world?*
 - *What PISA studies tell us (OECD, 2005):*
 - The opportunities 15-year-old students have for using computers at home, at school and elsewhere;
 - How they use computers and their attitudes towards them;
 - The relationship between computer use and performance in key school subjects.



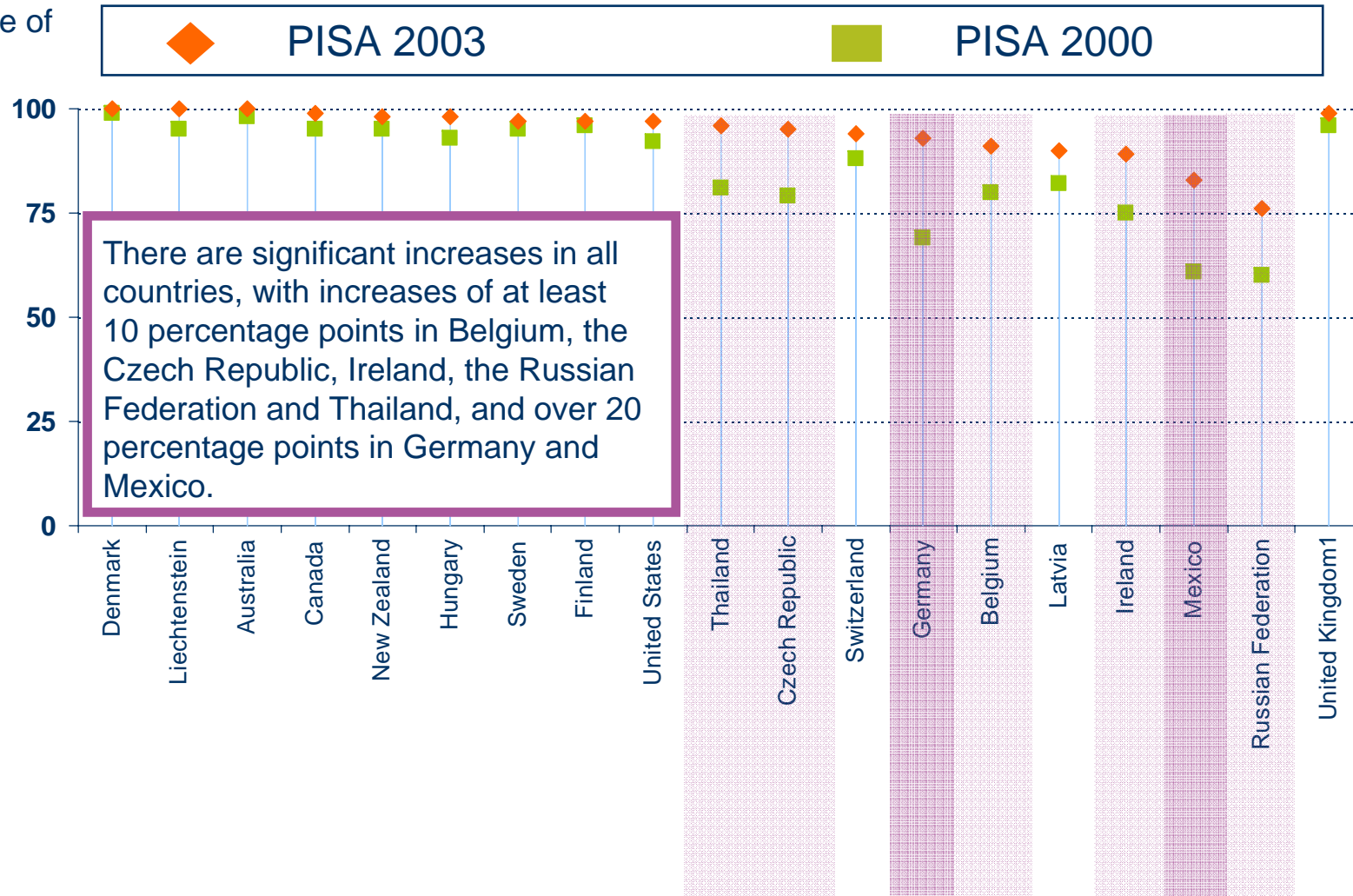
How universal is computer access?

- Out of 25 participating OECD countries, over 90% of students:
 - have used computers in all but 2 OECD countries
 - have access to computers at school in 18 OECD countries
 - Have access to computers at home in 13 OECD countries
- School computers: at least 80% of students in all OECD countries except Turkey (54%)
- Only in Mexico (13%) and Turkey (14%) has a significant proportion of students never used a computer among participating OECD countries.



Access to computers at school

Percentage of students





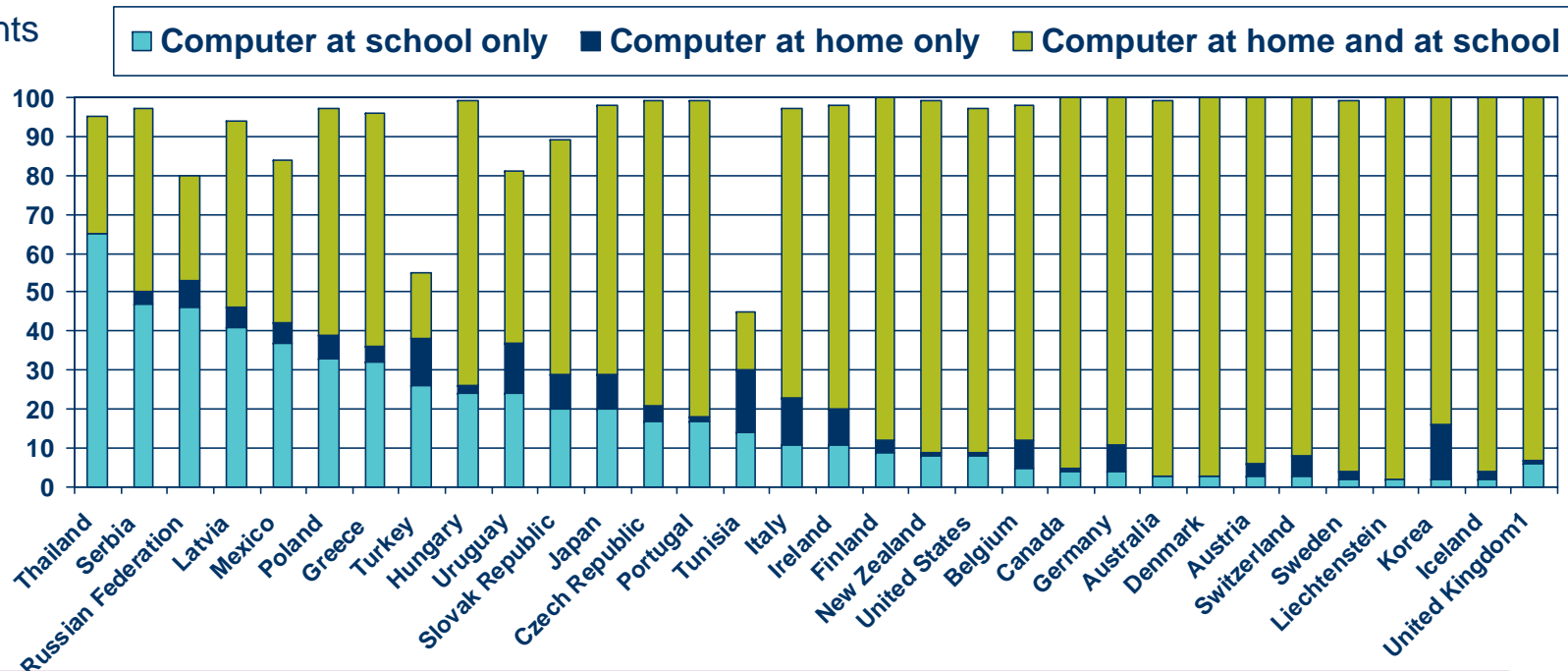
The importance of computers at school

- Not all students have access to computers elsewhere
 - Percentage of students who only have access to computers at school
- Students without computers at home are likely to be from comparatively less advantaged socio-economic background
 - Percentage of students with computers at home, by socio-economic and cultural background



Percentage of students with access to computers at school, but not at home

% of students

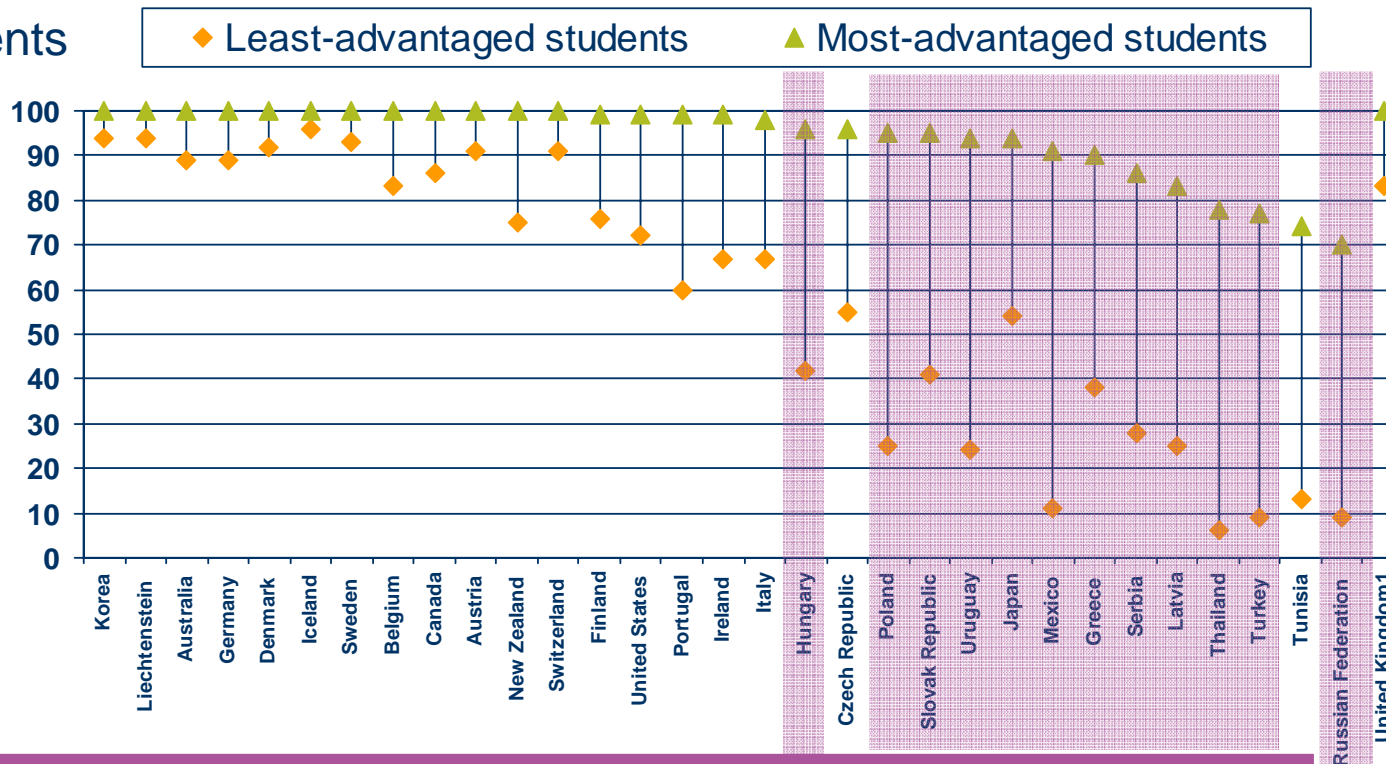


School compensates for a lack of access to computers at home. At least 20% of students without a computer at home do have access to computers at school in Greece, Hungary, Japan, Mexico, Poland, the Slovak Republic, Turkey, Latvia, the Russian Federation, Serbia, Thailand and Uruguay.



Computers at home, by socio-economic and cultural background

% of students



Students without computers at home are likely to be from less advantaged backgrounds. In the highlighted countries at least 20% of students without computers at home do have computers at school.

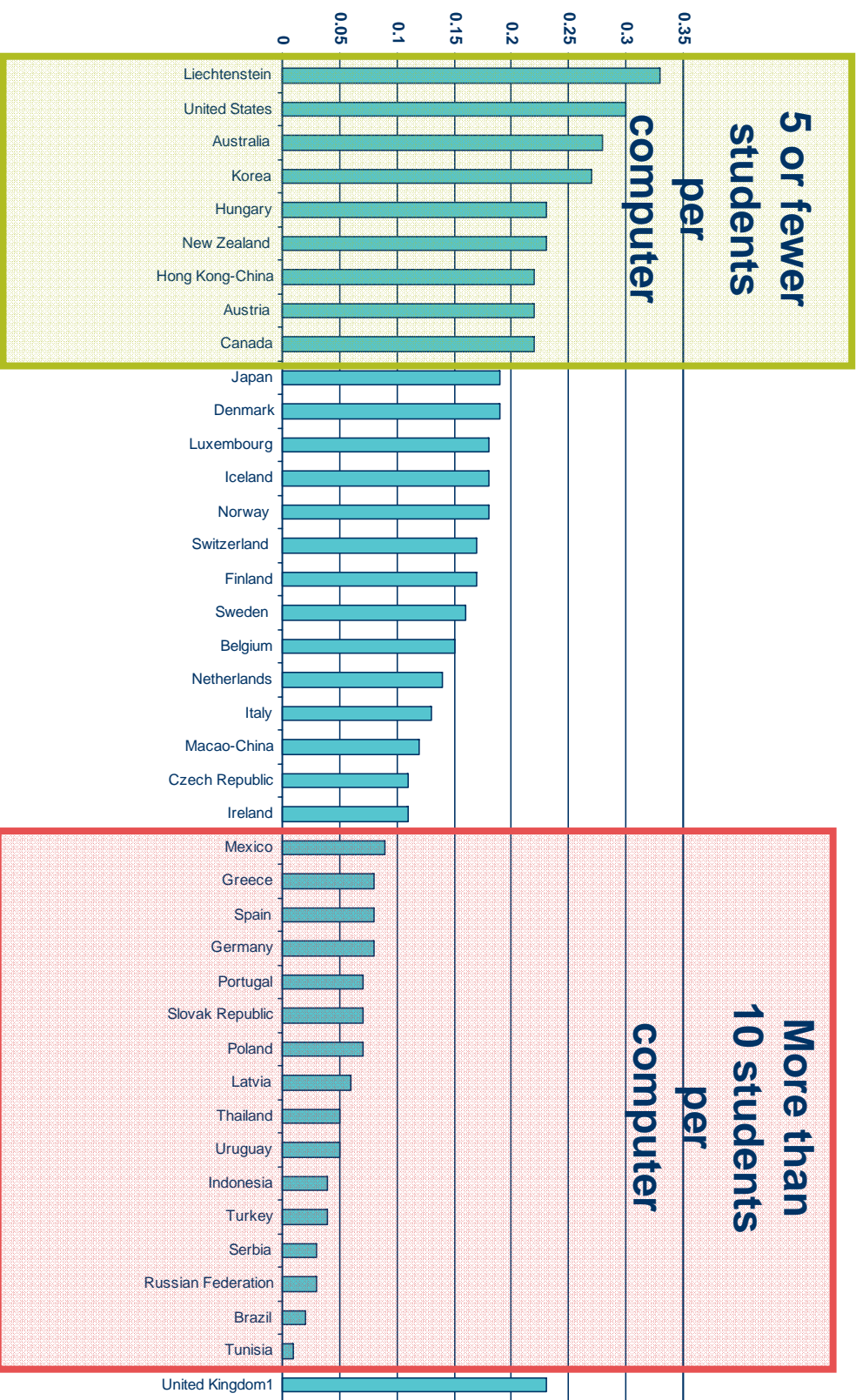


Quality of access to computers at school

- Do many students need to share a computer?
 - Number of computers per student
- Do computer shortages hinder effective instruction?
 - School principals' perceptions
- How frequently do students use computers at school?
- Are students able to use the Internet to research information for projects?



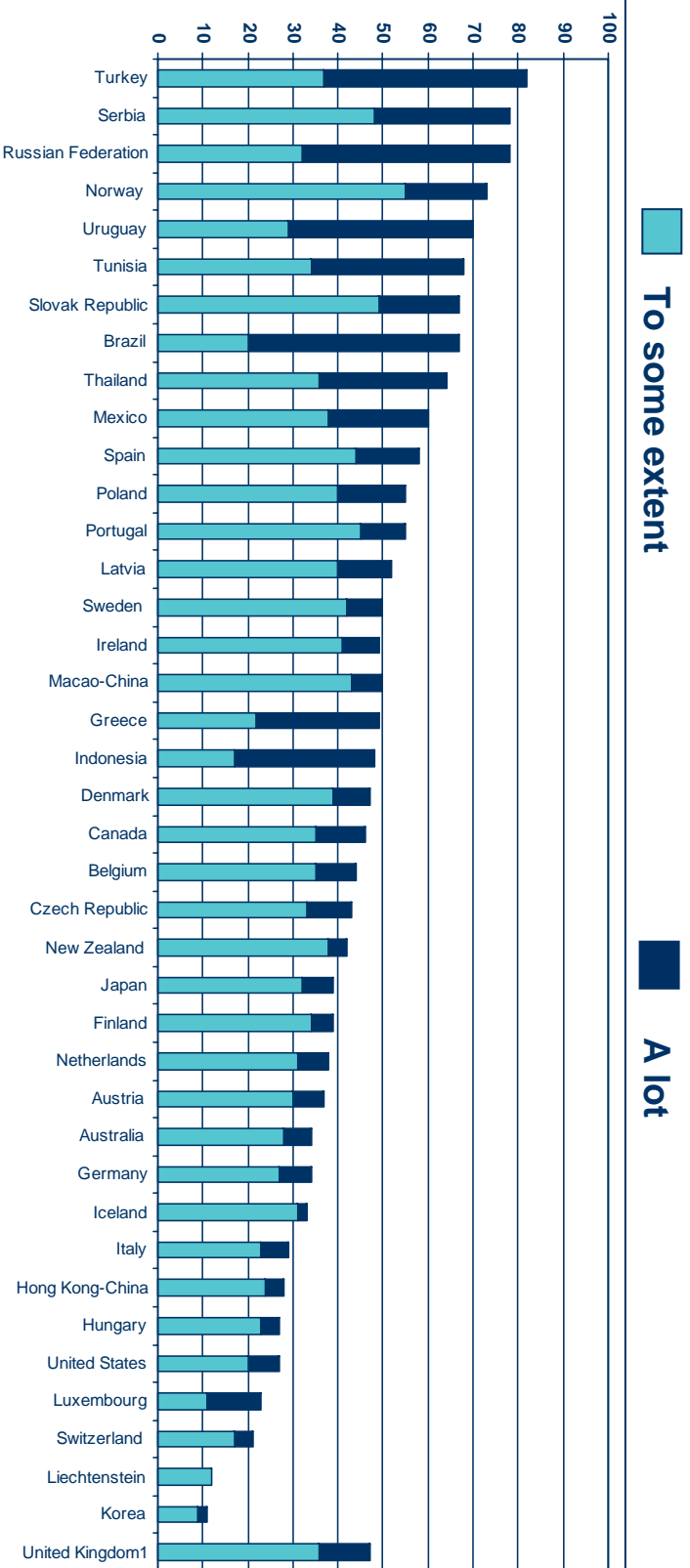
Number of computers per student (PISA 2003)





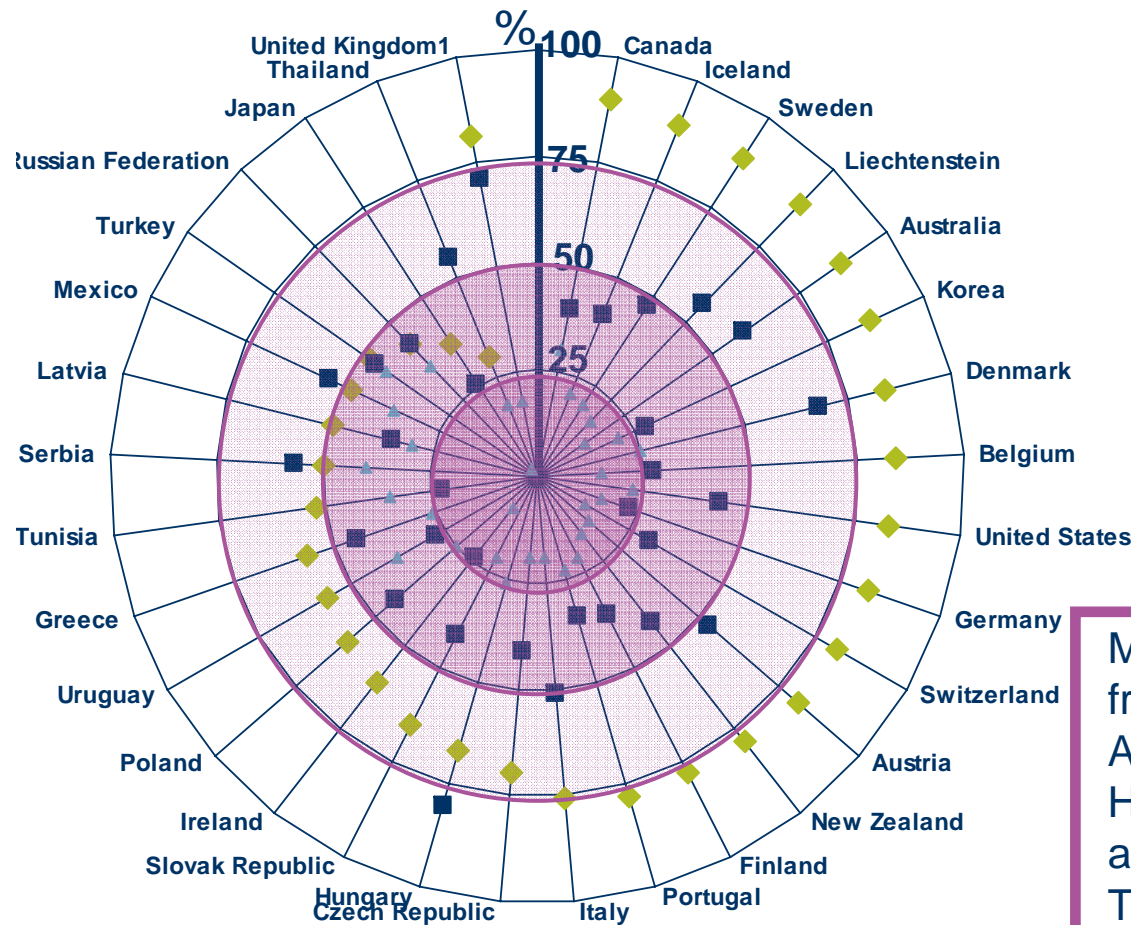
School principals' reports of computer shortages (PISA 2003)

Percentage of students attending schools whose principals report that instruction is hindered by a shortage of computers:





Students use computers more frequently at home than at school



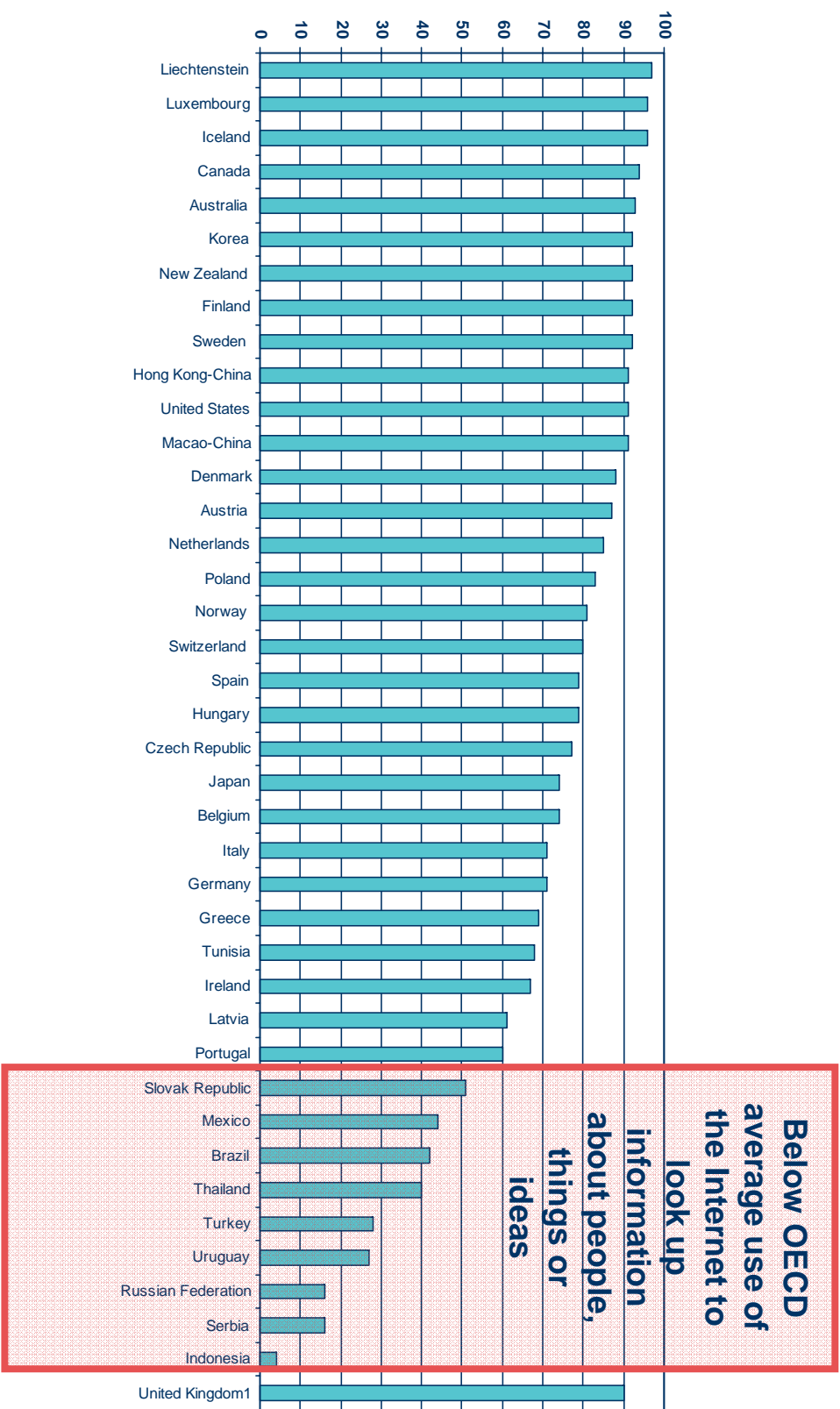
Percentage of students reporting they use computers "Almost every day" or "A few times each week" in PISA 2003:

- ◆ At home
- At school
- ▲ In other places

More than 50% of students frequently use computers at school in Australia, Austria, Denmark, Hungary, Italy, the UK, Liechtenstein and Thailand. In all but Italy and Thailand there are fewer than 5 students per computer.

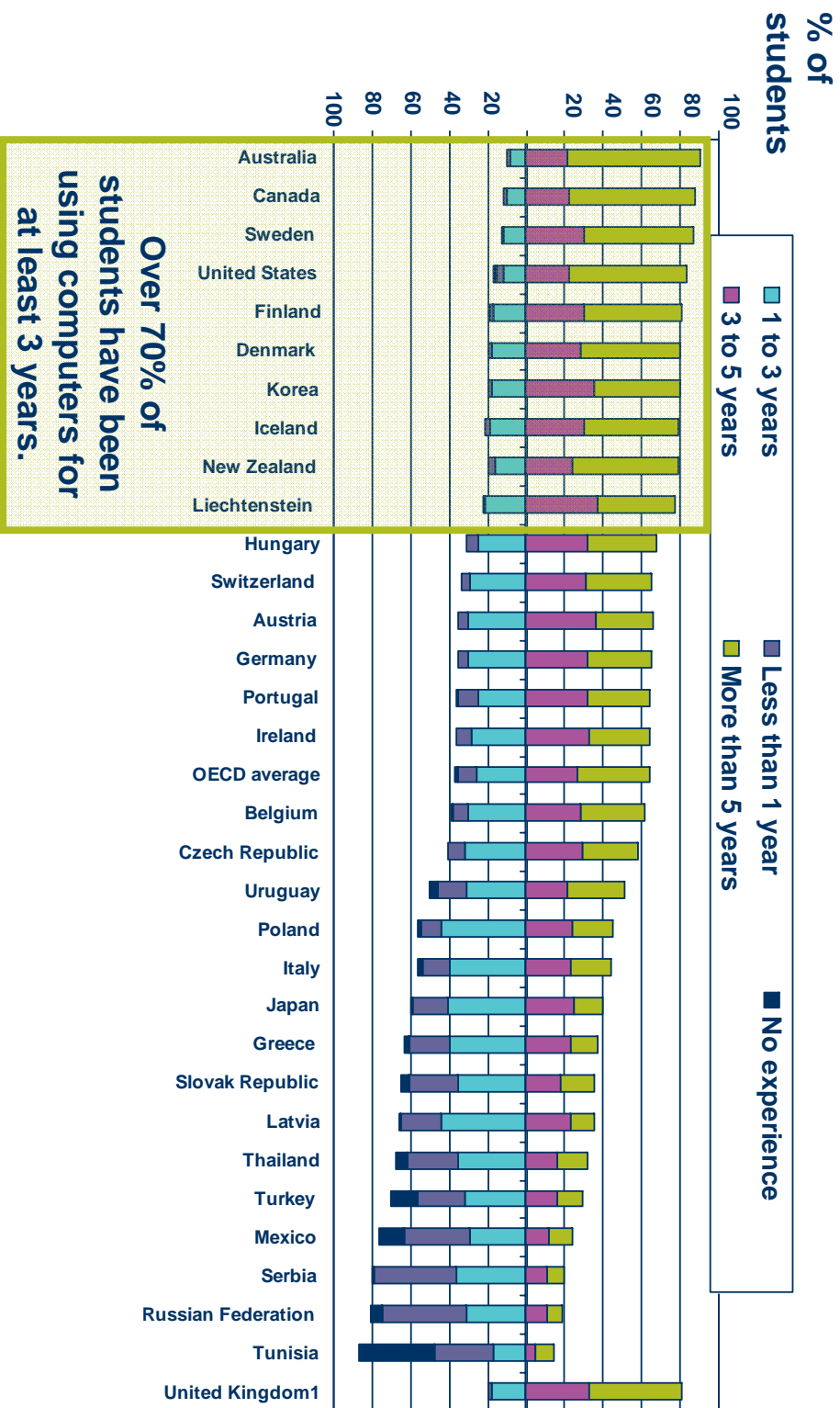


Percentage of students with Internet connection at school (PISA 2003)





Disparities in computing experience across countries (PISA 2003)





Gender differences in ICT confidence

- Boys more confident than girls in a wide range of computing tasks, including:
 - routine tasks such as deleting, opening and saving files,
 - Downloading files from the Internet, writing emails
 - high-level tasks such as creating a multimedia presentation and writing a computer program
 - Differences are particularly pronounced in the Czech Republic, Denmark, Finland, Germany, Iceland, Poland, Sweden , Switzerland, Latvia and Liechtenstein.



Further evidence

- PISA 2006
 - ICT familiarity questionnaire
 - Part of the assessment will be completed on computers in Denmark, Iceland and Korea
- PISA 2009
 - Possible assessment of ICT literacy
 - Possibility that part of the assessment in mathematics, reading and science will be completed on computers



e-INCLUSION

ICT for an Inclusive Society

Ministerial Conference
Riga 11-13 June 2006

No one left behind