



Students,  
Computers  
& Learning

# ***Making the connection***

Francesco Avvisati, OECD

London, 12 April 2016



The first rule of any technology used in a business is that **automation applied to an efficient operation will magnify the efficiency.**

The second is that **automation applied to an inefficient operation will magnify the inefficiency**

Gates, Myhrvold, and Rinearson, 1995



# STUDENTS





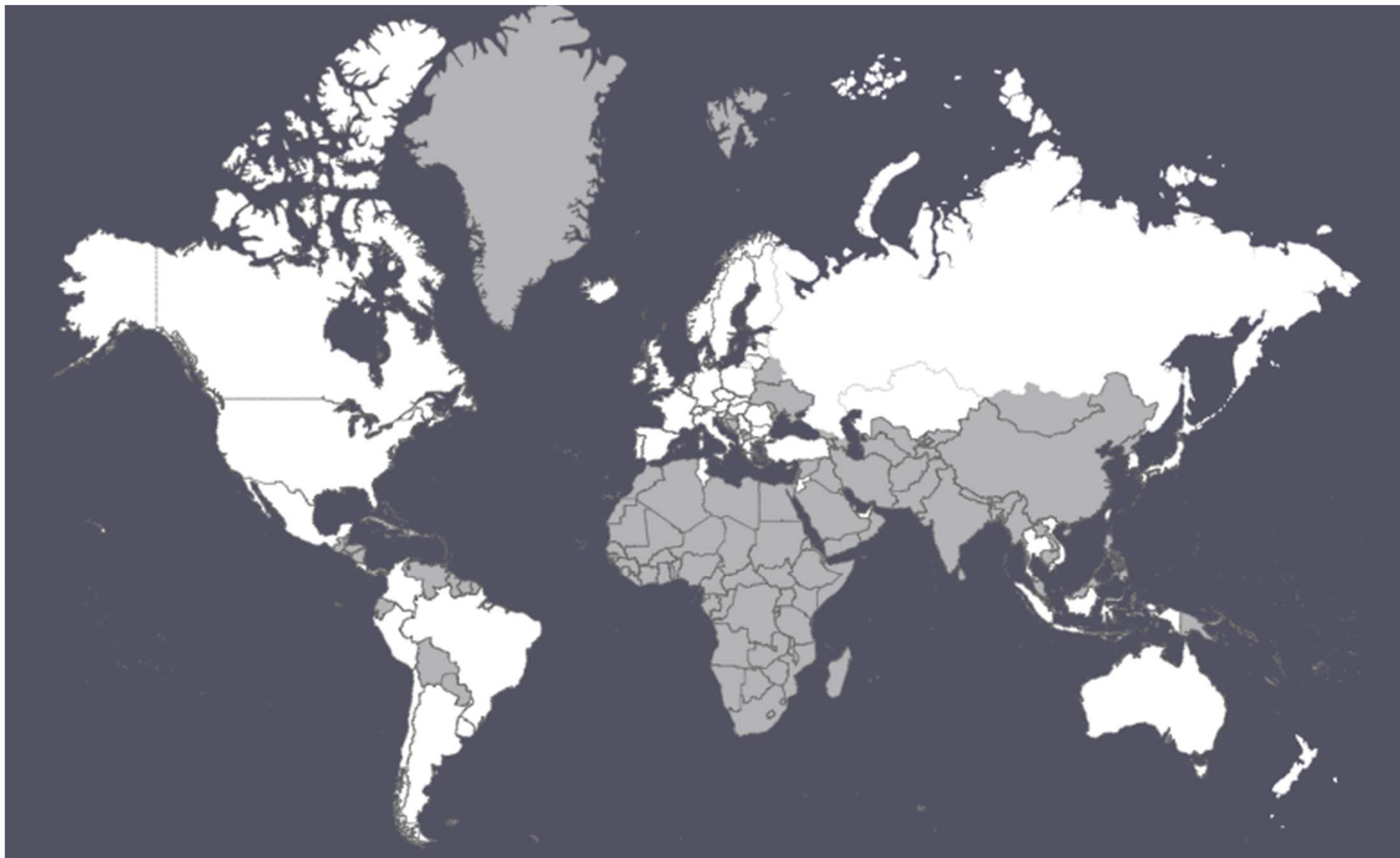
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# **15-year-old students in over 60 countries in 2012**



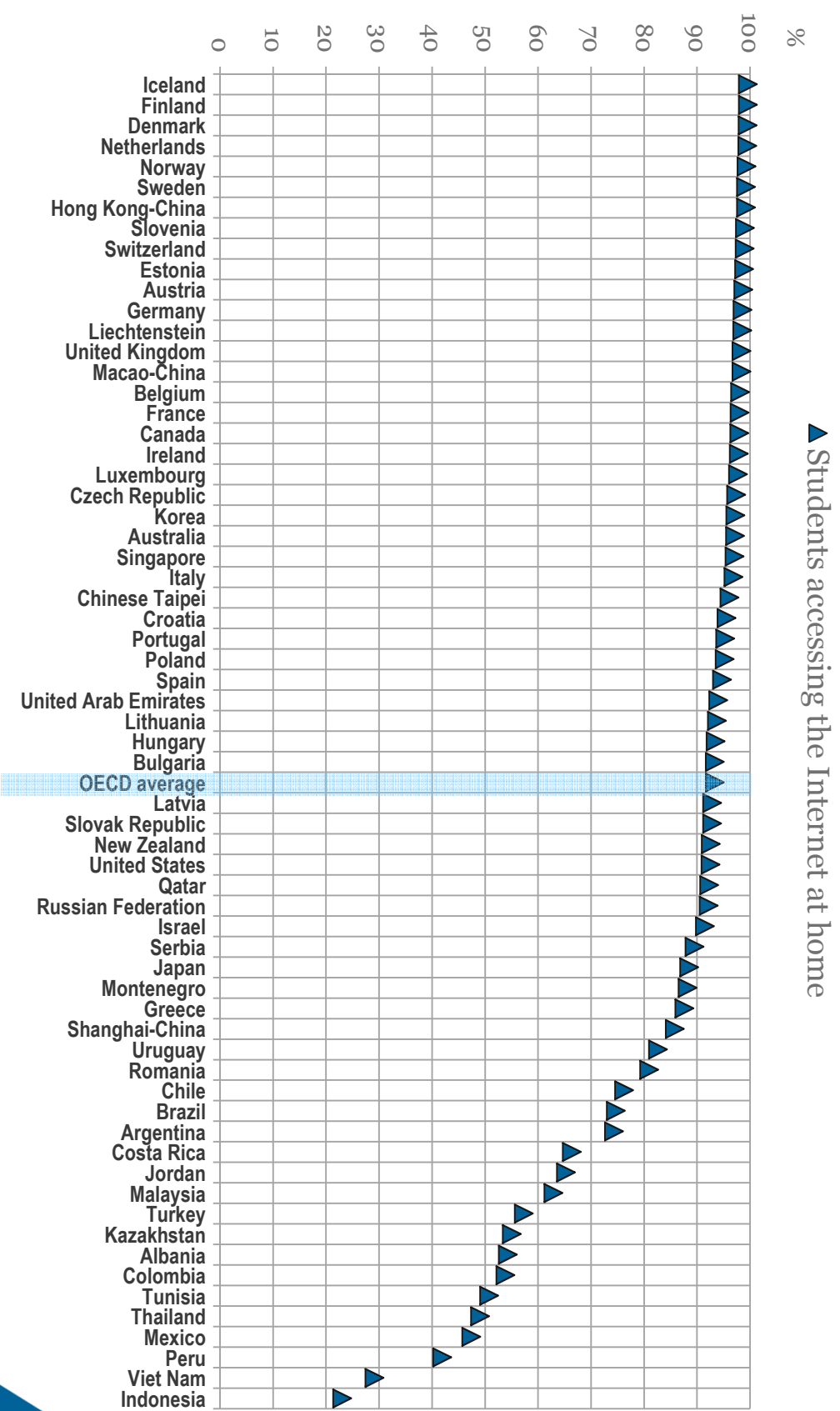


# PISA participants



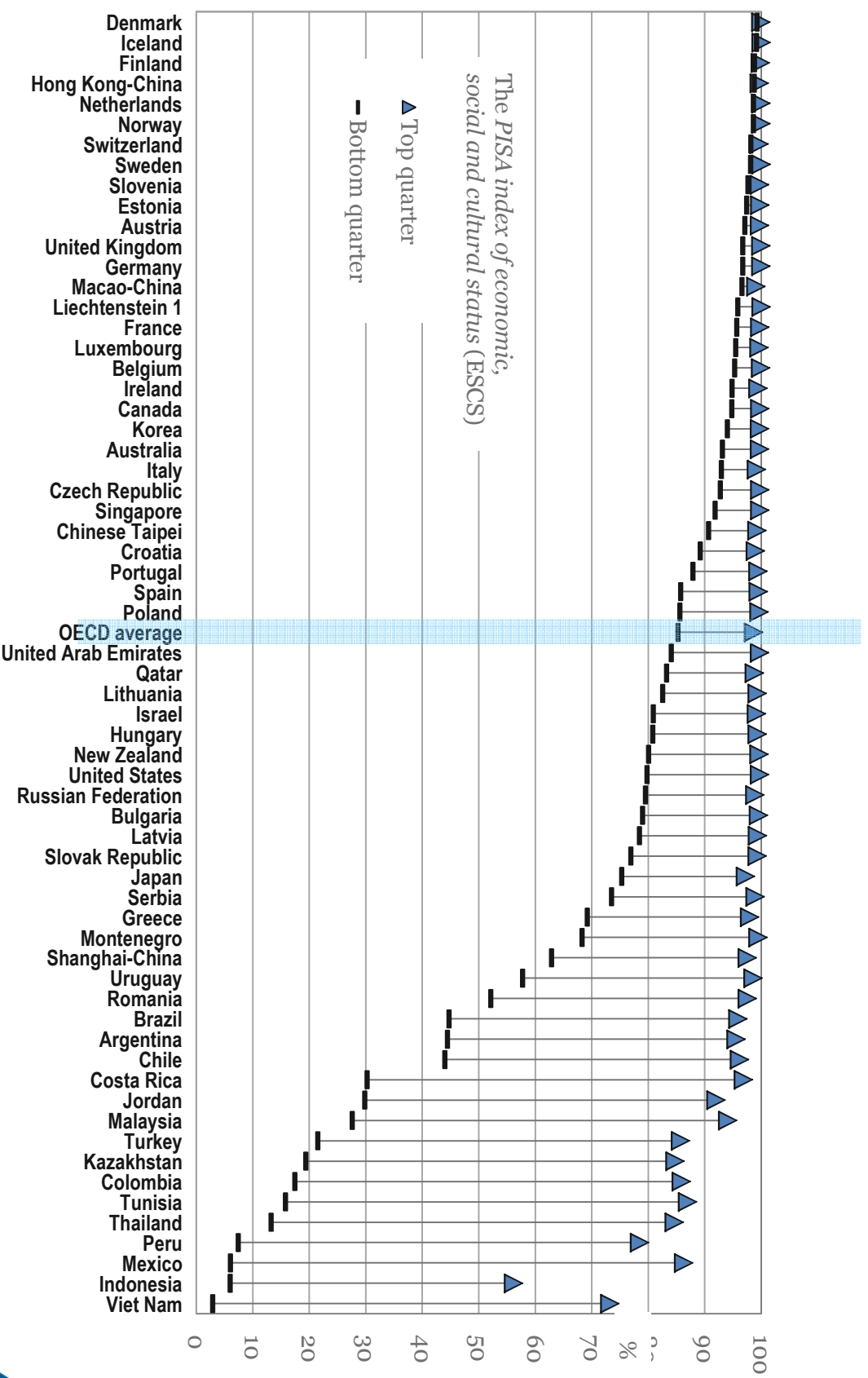


# Countries with good (but unequal) access to ICT resources





(within-country inequalities are often larger  
than between countries)



1. The difference between the top and the bottom quarter of ESCS is not statistically significant.

Source: Figure 5.2





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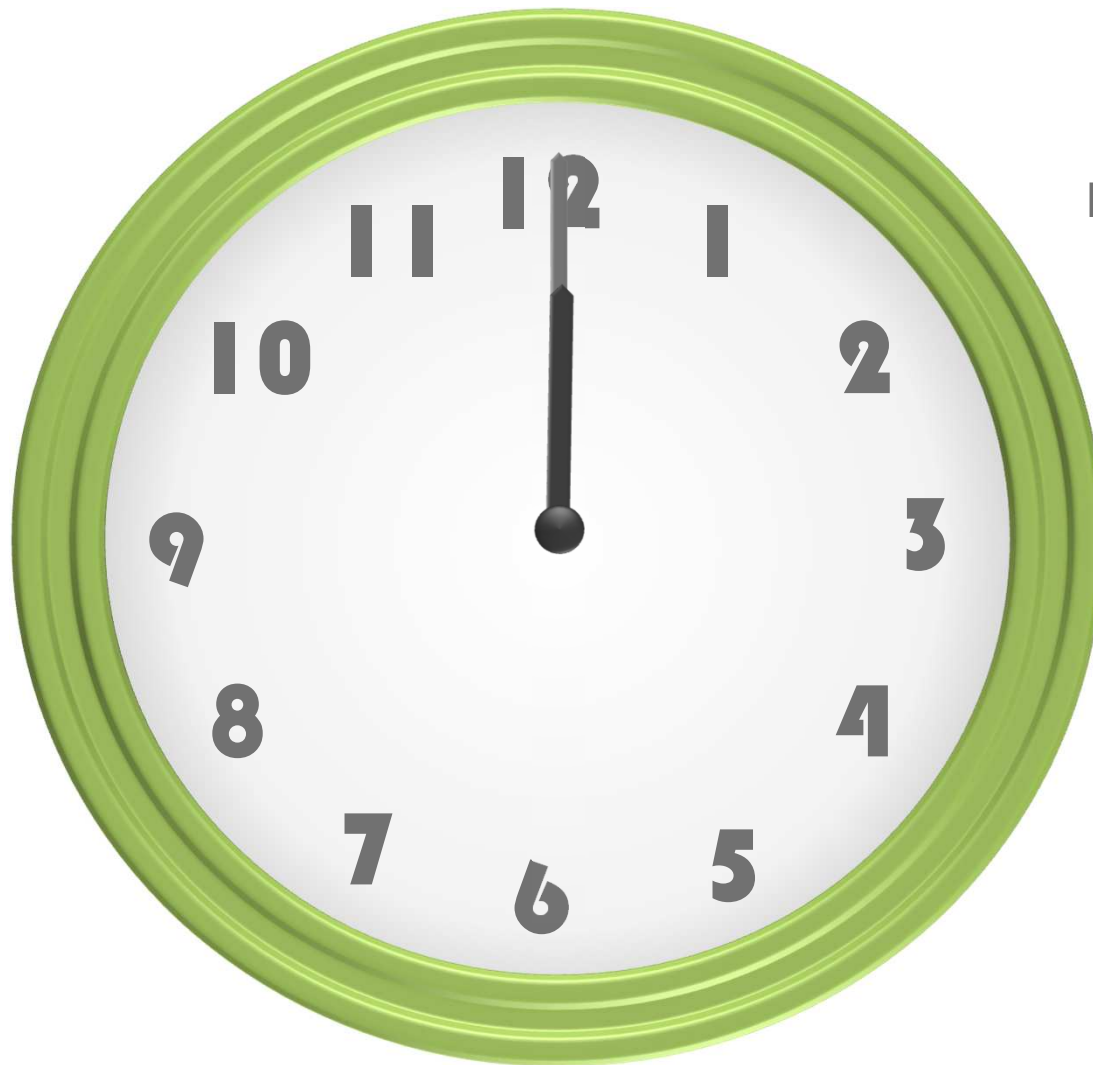
# **What students do on line**





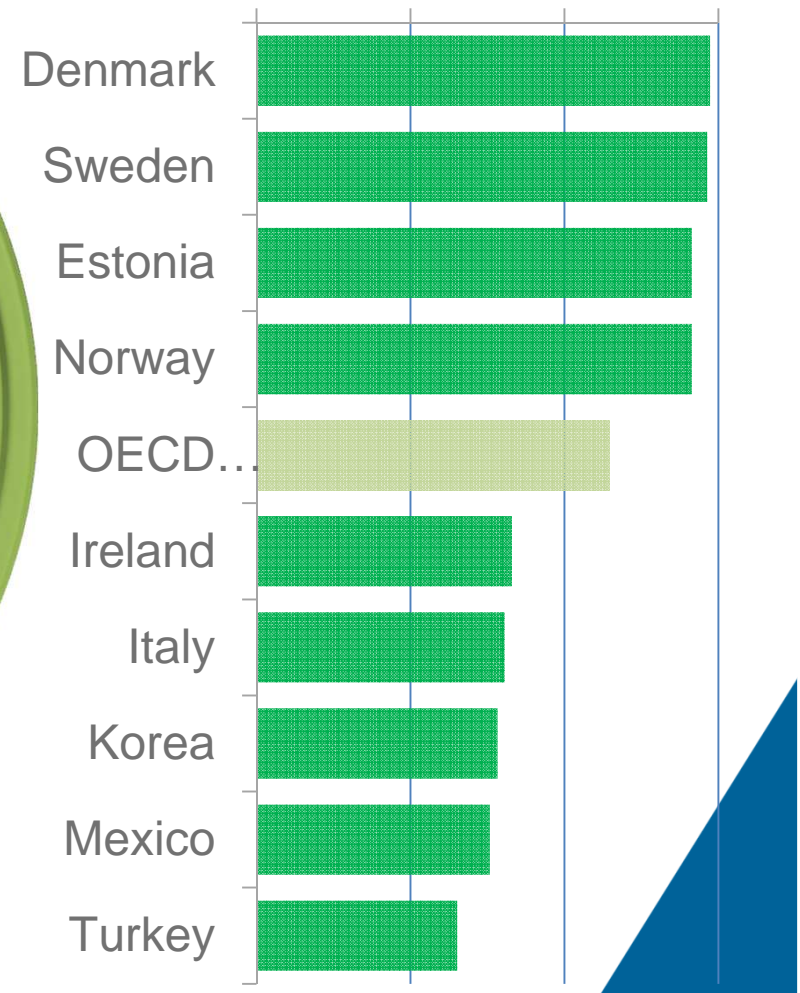


Average time spent on the Internet,  
every day, outside of school: over 2 h



**On weekend days:**

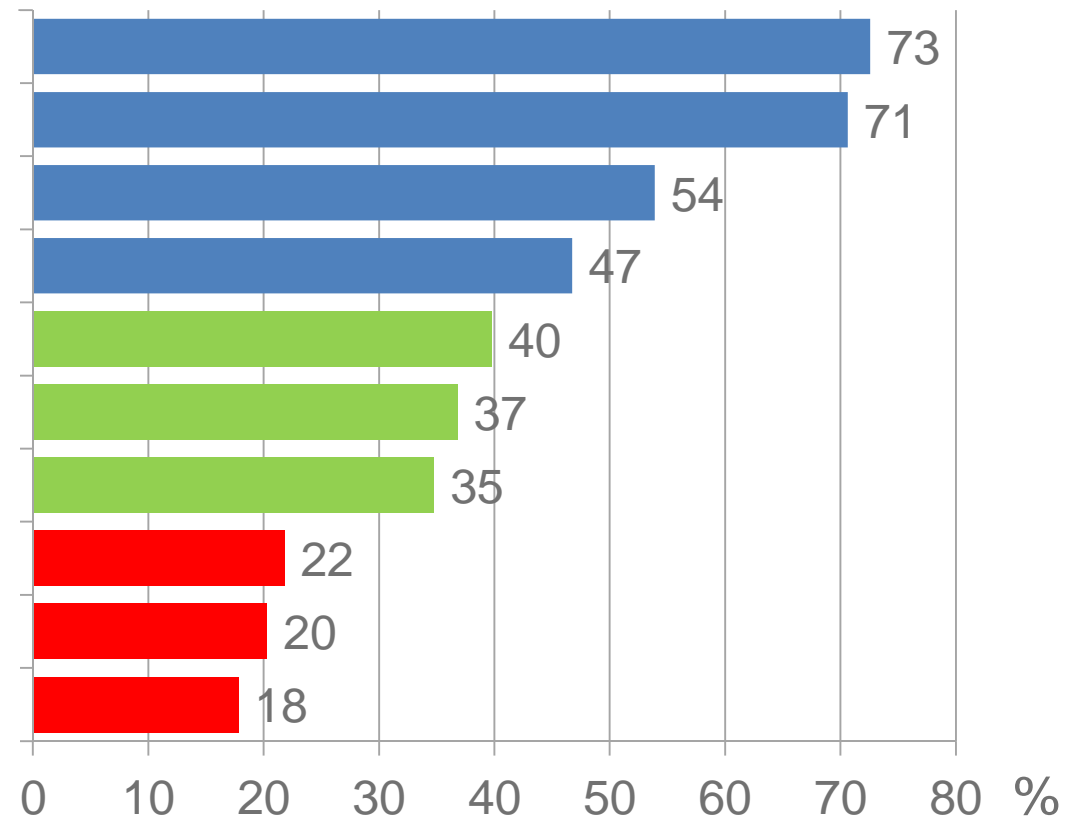
0 1 2 3 h





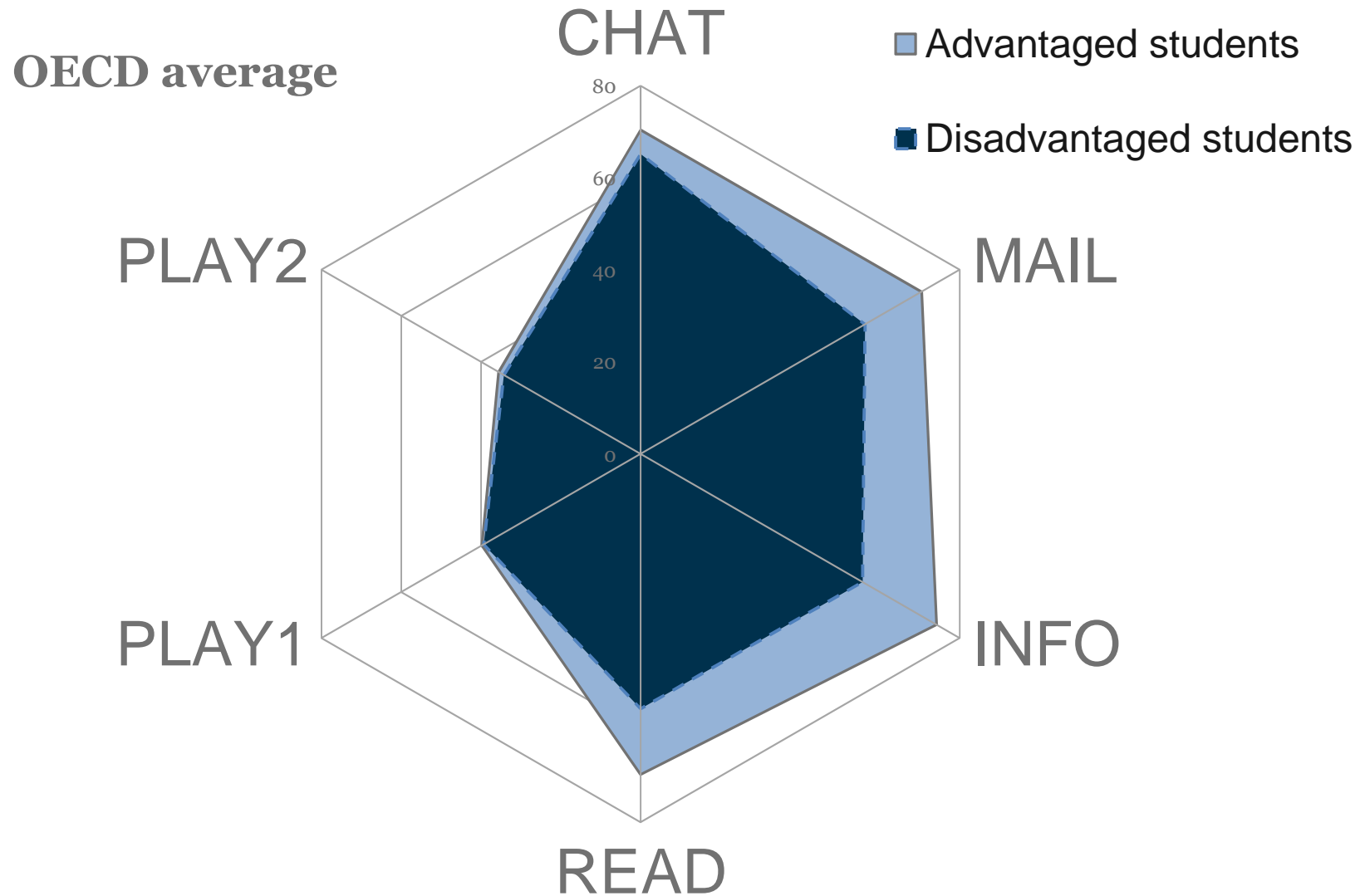
## Daily online activities for 15-year-olds

OECD average





## The digital divide is shifting from differences in access to differences in use



Source: Figure 5.8





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**Who are the  
world's best  
online  
readers?**

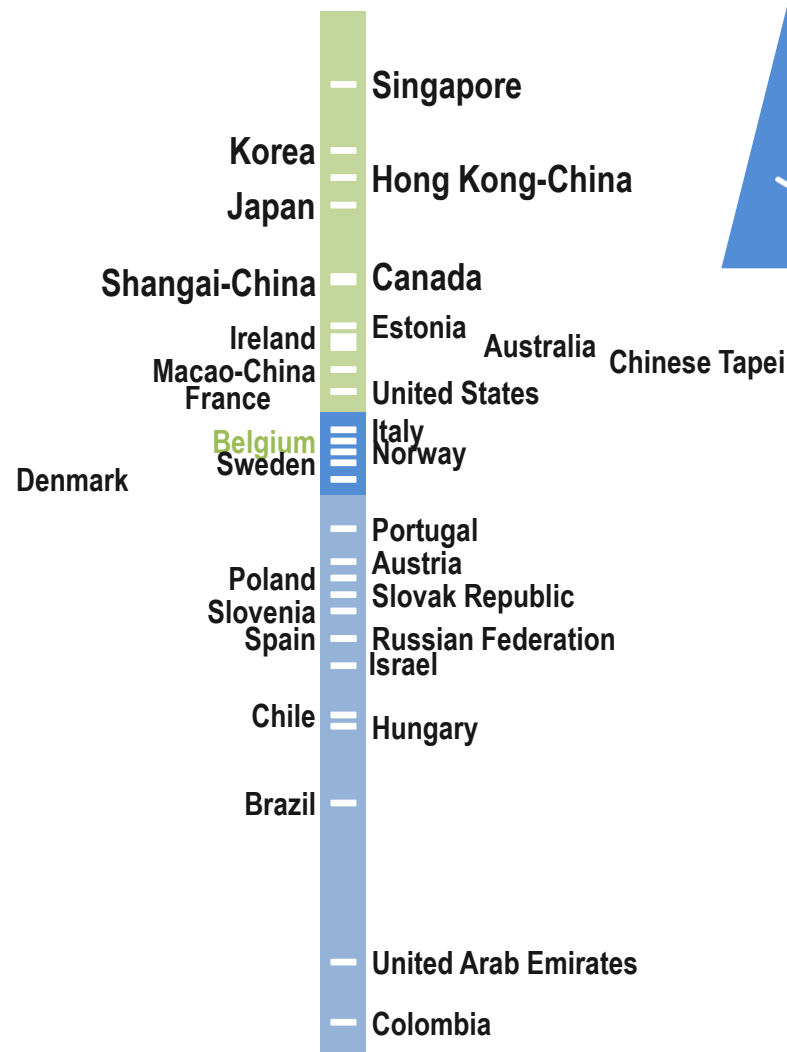




## Strong performance in in digital reading

Mean score

570  
560  
550  
540  
530  
520  
510  
500  
490  
480  
470  
460  
450  
440  
430  
420  
410  
400  
390



Average performance  
in digital reading



Fig 3.1

**Light green:** statistically significantly **above** the OECD average

**Dark blue:** not statistically significantly different from the OECD average

**Light blue:** statistically significantly **below** the OECD average

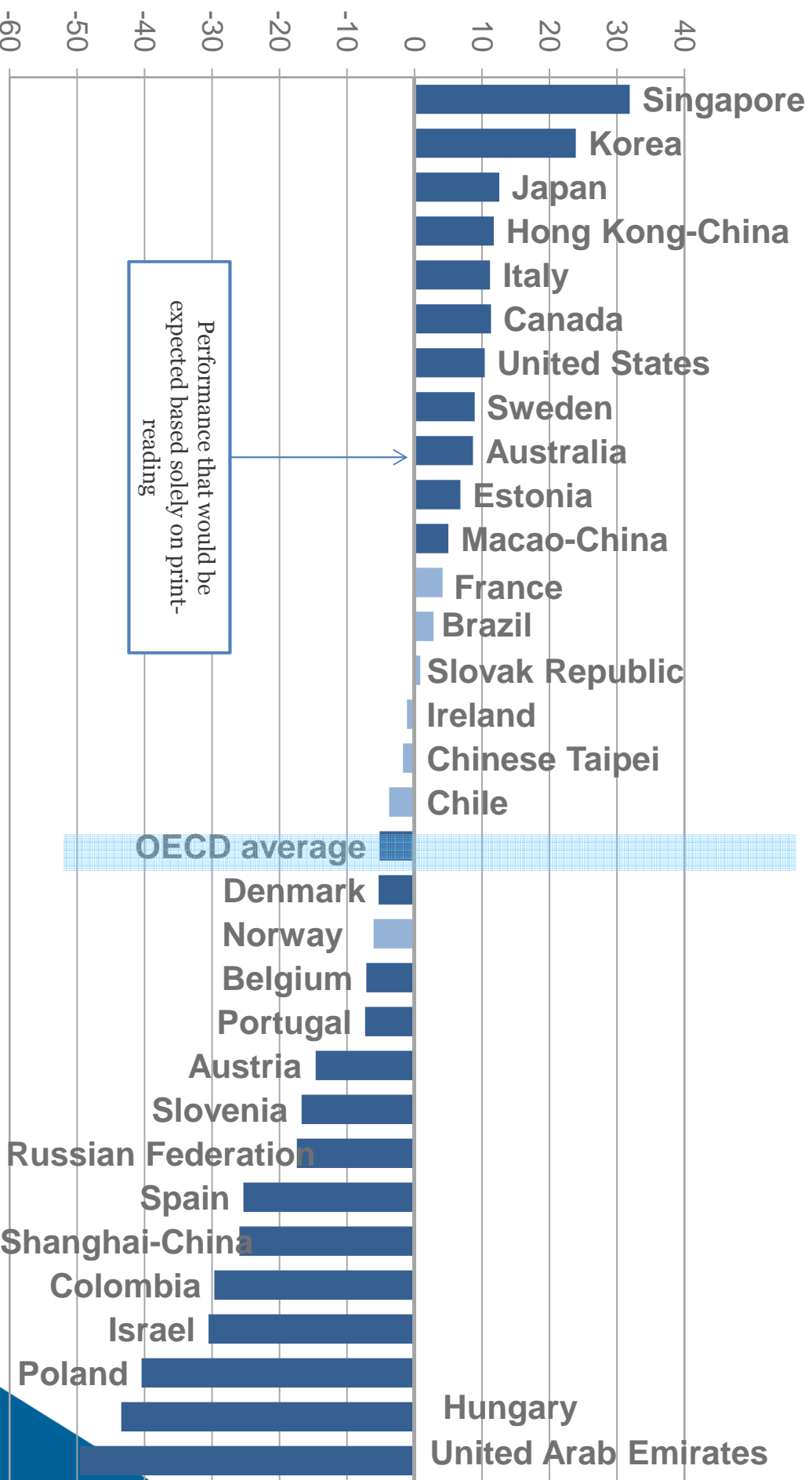
Low performance in digital reading



# Relative performance in digital reading

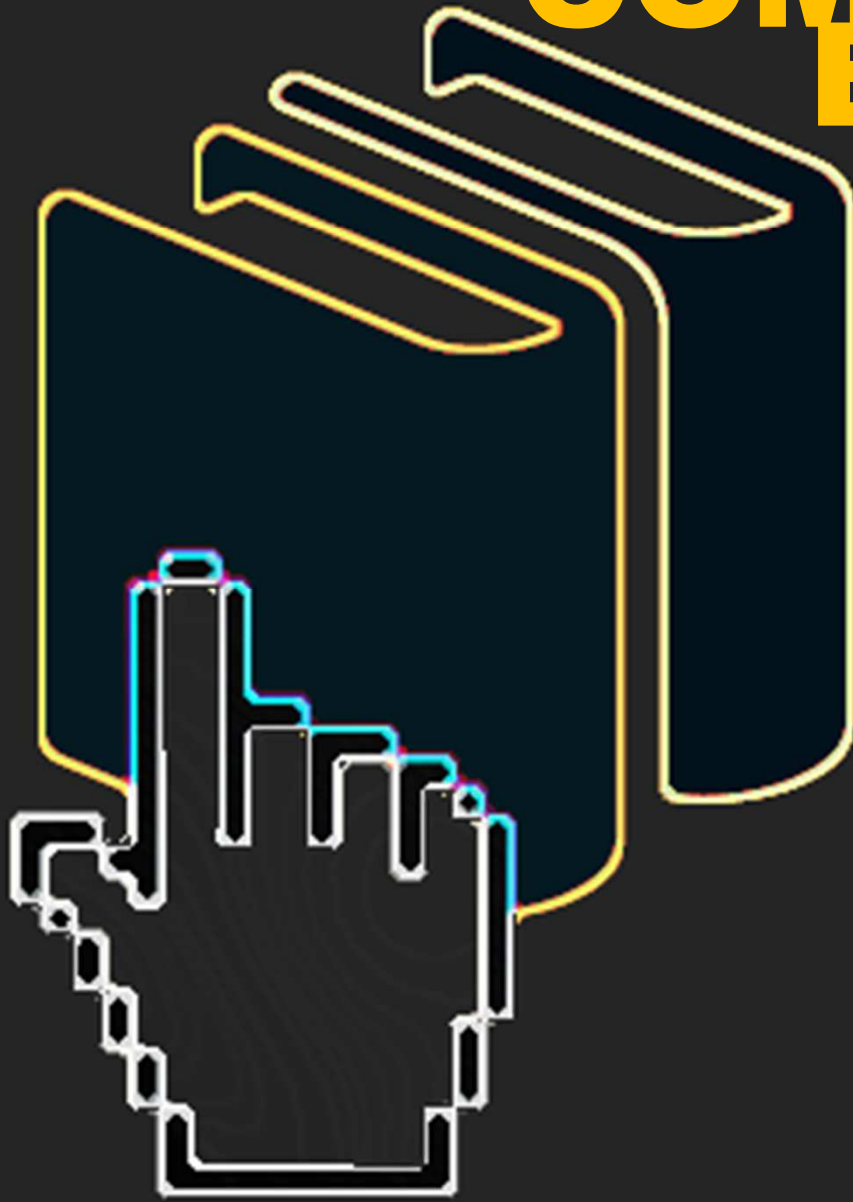
Score-point difference between actual and expected performance in digital reading

Score-point difference





# COMPUTERS IN EDUCATION





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**Technology is  
changing the  
way we read**



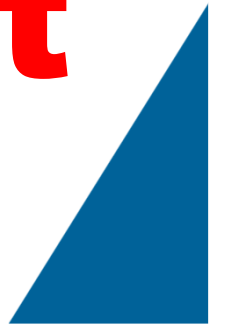
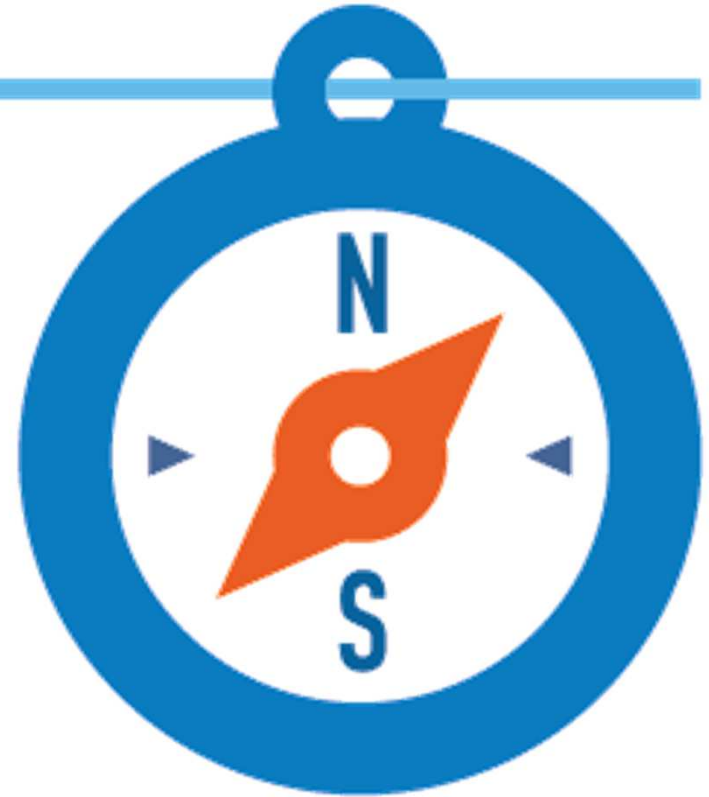
SERAING: Question 2 [CR002Q03]Find the page for the Seraing Community Cultural Centre. Which film will be shown in the first week of November?

- ☐ Stormy Weather.
- ☐ Crash.
- ☐ The Cave of the Yellow Dog.
- ☐ The Promise.



Online reading skills

# **Navigation Evaluation Task Management**

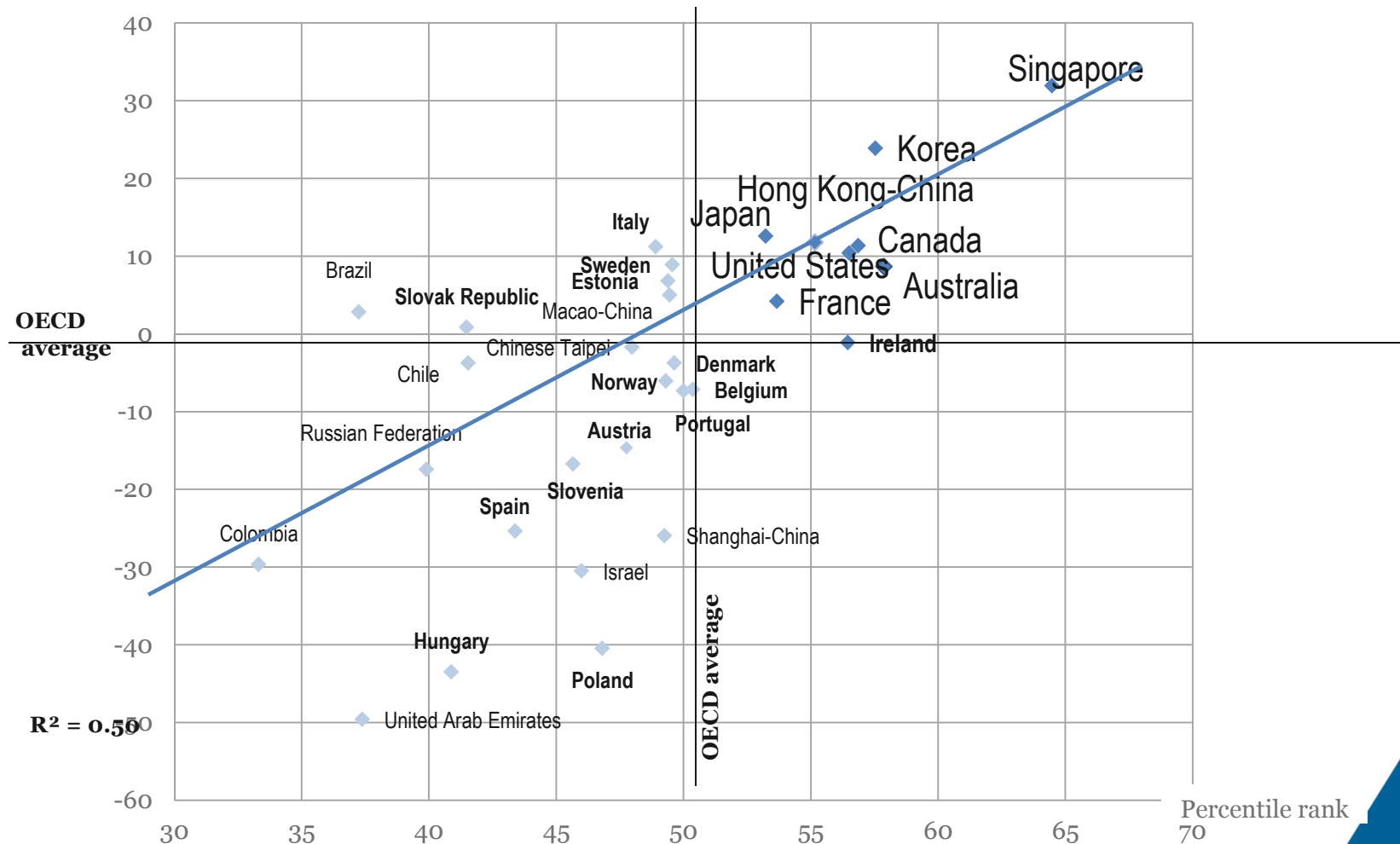




# Navigation behaviour predicts online reading performance beyond print reading skills

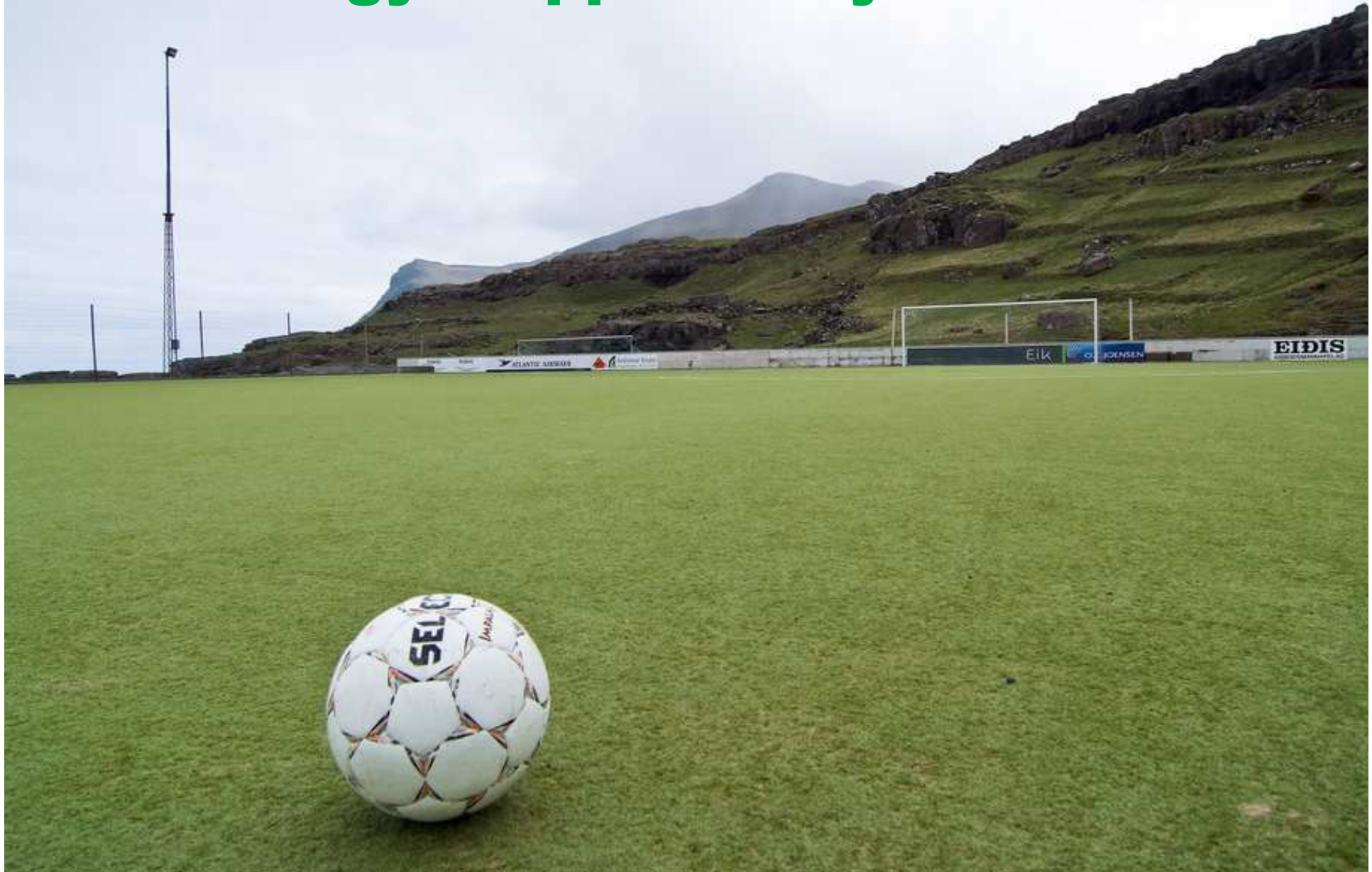
## Index of task-oriented browsing

Relative performance in digital reading, after accounting for performance in print reading



Source: Figure 4.10

**Talent is universal; opportunity is not.**  
**technology = opportunity for all?**

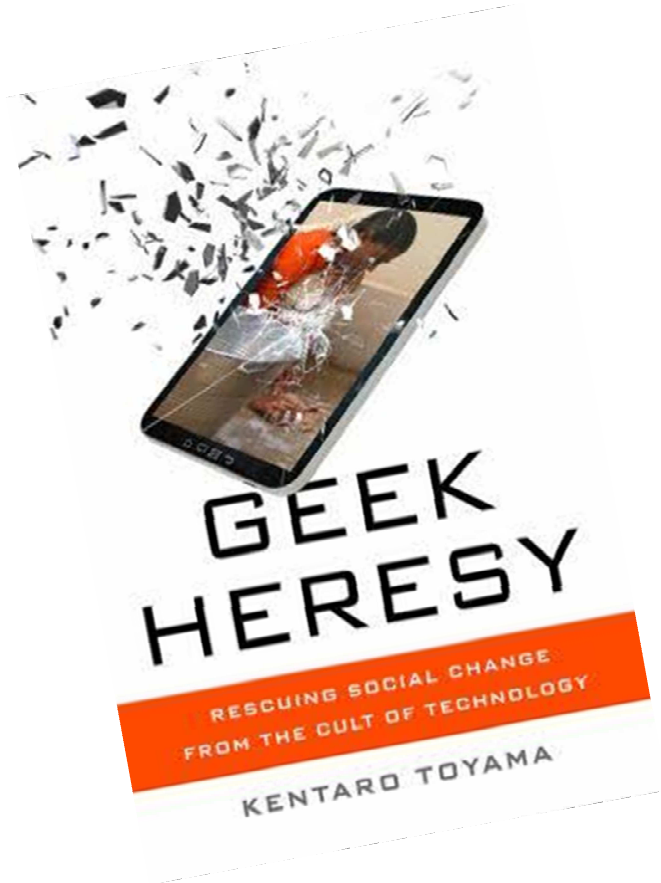






Old divides cut into online opportunities

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**Online opportunity isn't always actual opportunity.**

**Technology never made up for a lack of good teachers or good principals.**



# LEARNING CONNECTIONS



serprix.com



From access...

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**Brazil**  
**Argentina**  
**Mexico**  
**Greece**



**Korea**  
**Germany**  
**Italy**  
**Japan**

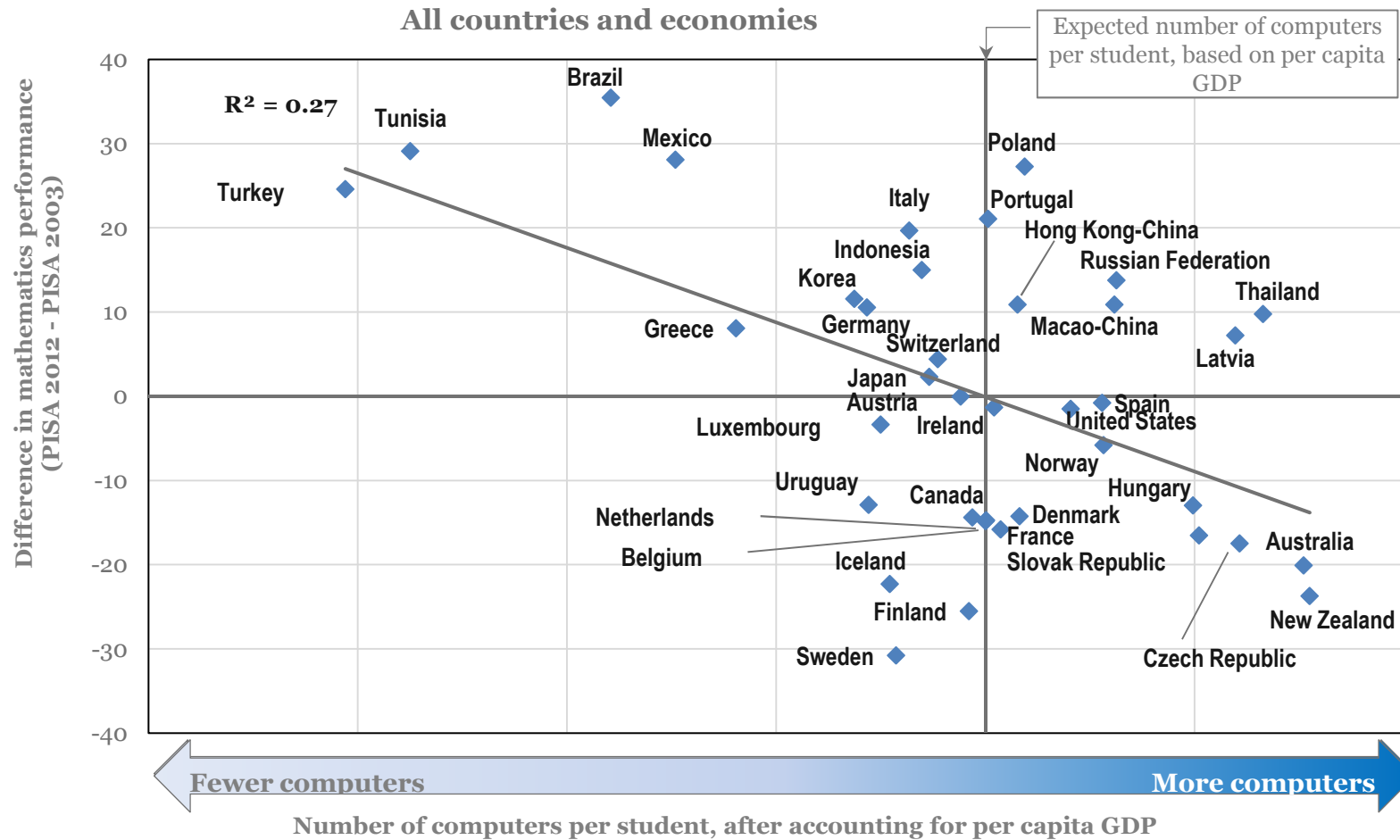


**Norway**  
**United Kingdom**  
**New Zealand**  
**Australia**





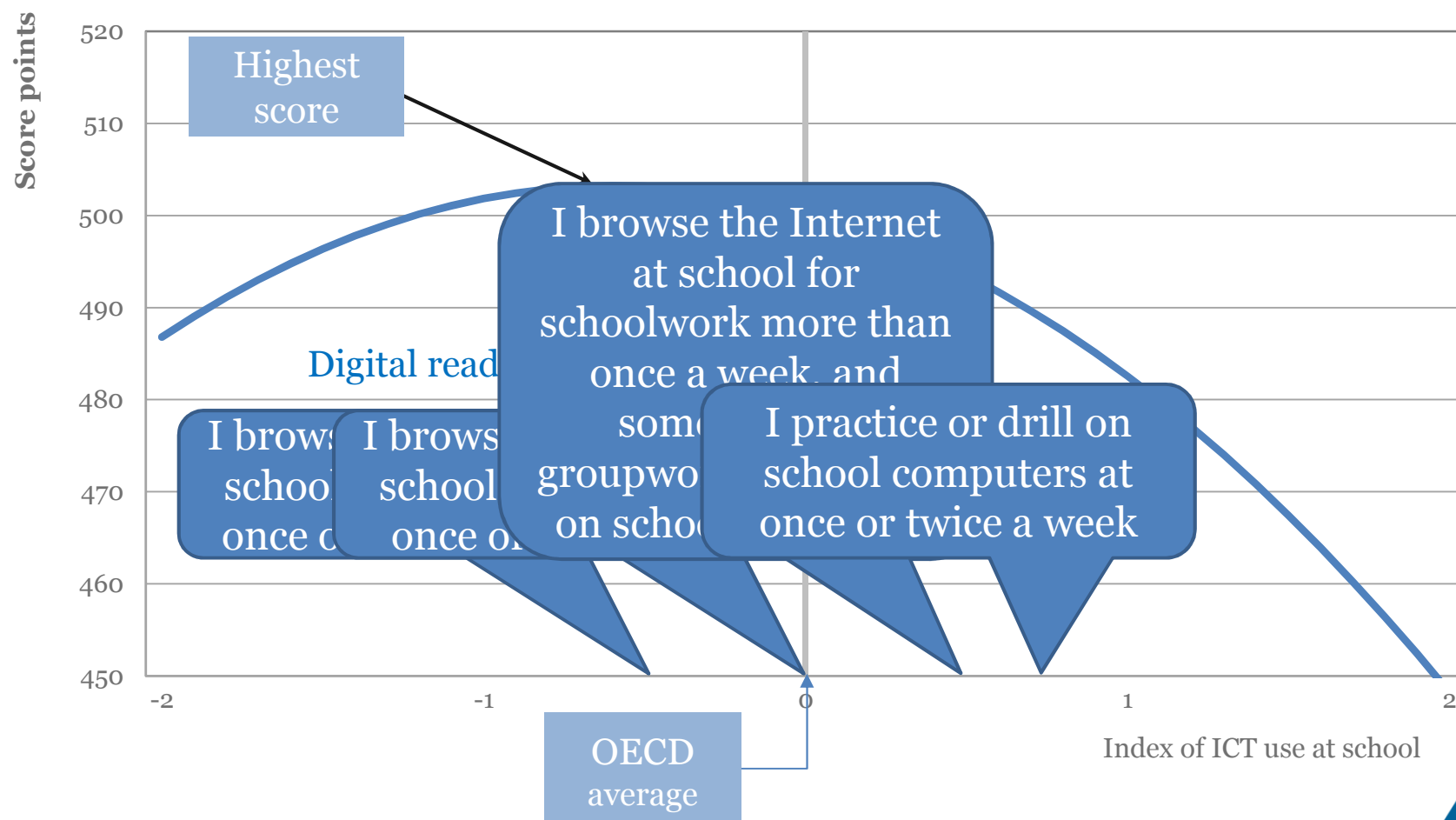
# To learning? Trends in maths performance and number of computers in schools





## Students who use computers at school only moderately score the highest in online reading

Relation between students' skills in reading and computer use at school  
(average across OECD countries)



Source: Figure 6.5



**When do students learn?**

**When do organisations learn?**

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**Time and practice**

**Time and routines**

**In response to  
personal needs**

**Autonomy**

**In collaborative  
settings**

**Support and  
teamwork**





THANK YOU!

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