GÖTEBORGS UNIVERSITET

Trends in the PIRLS results 2001-2006

Monica Rosén
University of Gothenburg, Sweden

Progress in International Reading Literacy Study (PIRLS)

- IEA – long history of international studies
- Reading Literacy in grade 4 (9-10 year-olds)
  - Reading Literacy comprises reading comprehension, attitudes towards reading and reading habit.
- First PIRLS study 2000
- Second PIRLS study 2006
- New rounds every 5th year

Focus on trends in achievement

- Change over time within countries may be easier to understand than differences between countries at a particular point in time.
- Change over time is potentially more policy relevant than are differences between countries.

PIRLS test design

- Reading Comprehension tests
- Literary texts and informational texts. Relatively extensive texts (about 1200 words).
  - Four major processes of reading comprehension
    - Focus on and retrieve explicitly stated information,
    - Make straightforward inferences,
    - Interpret and integrate ideas and information
    - Examine and evaluate content, language, and textual elements.
  - 10 text blocks combined in 13 booklets, each holding two texts (2 x 40 minutes).
  - About a dozen test items (both multiple-choice and open ended) followed each text.

PIRLS continued

- Student questionnaire
  - Home background
  - Reading habits and reading interest
  - Use of computer and other technical utilities
  - Reading instruction
- Home questionnaire
  - Early reading activities
  - Estimated reading ability at school start
  - Reading activities and reading resources at home
  - Parents education and occupation
- Teacher questionnaire
  - Classroom organisation
  - Teaching approaches
  - Assessment methods
  - Resources
- School questionnaire
  - School climate
  - Home-school activities
  - Overall school policies

Purposes with PIRLS

- To describe differences in reading comprehension between countries and across time
- Explain the observed differences.

Number of participating countries

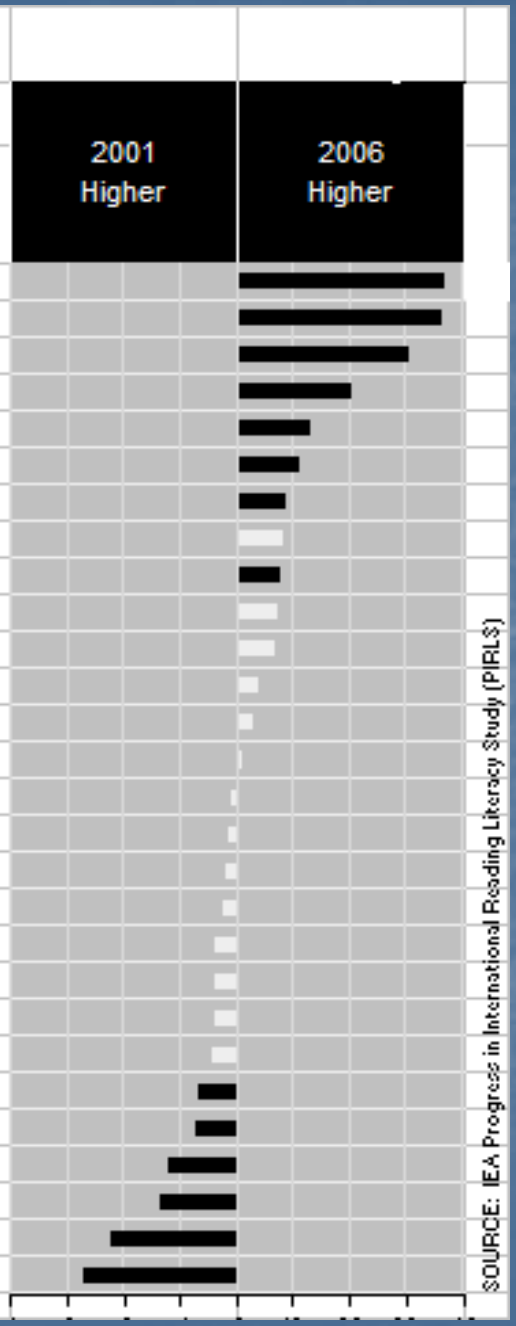
- PIRLS 2001: 35 countries (36 participants)
- PIRLS 2006: 40 countries (45 participants)
- PIRLS 2001 and 2006: 26 participants (28 participants)

Plausible explanations of change in reading achievement

- Age and grade changes in sample
- Change in immigration (both parents born abroad)
- Change in Early Home Literacy Activities
- Change in Students Reading Habits
- Change in use of computers at home
- Change in use of computers at school

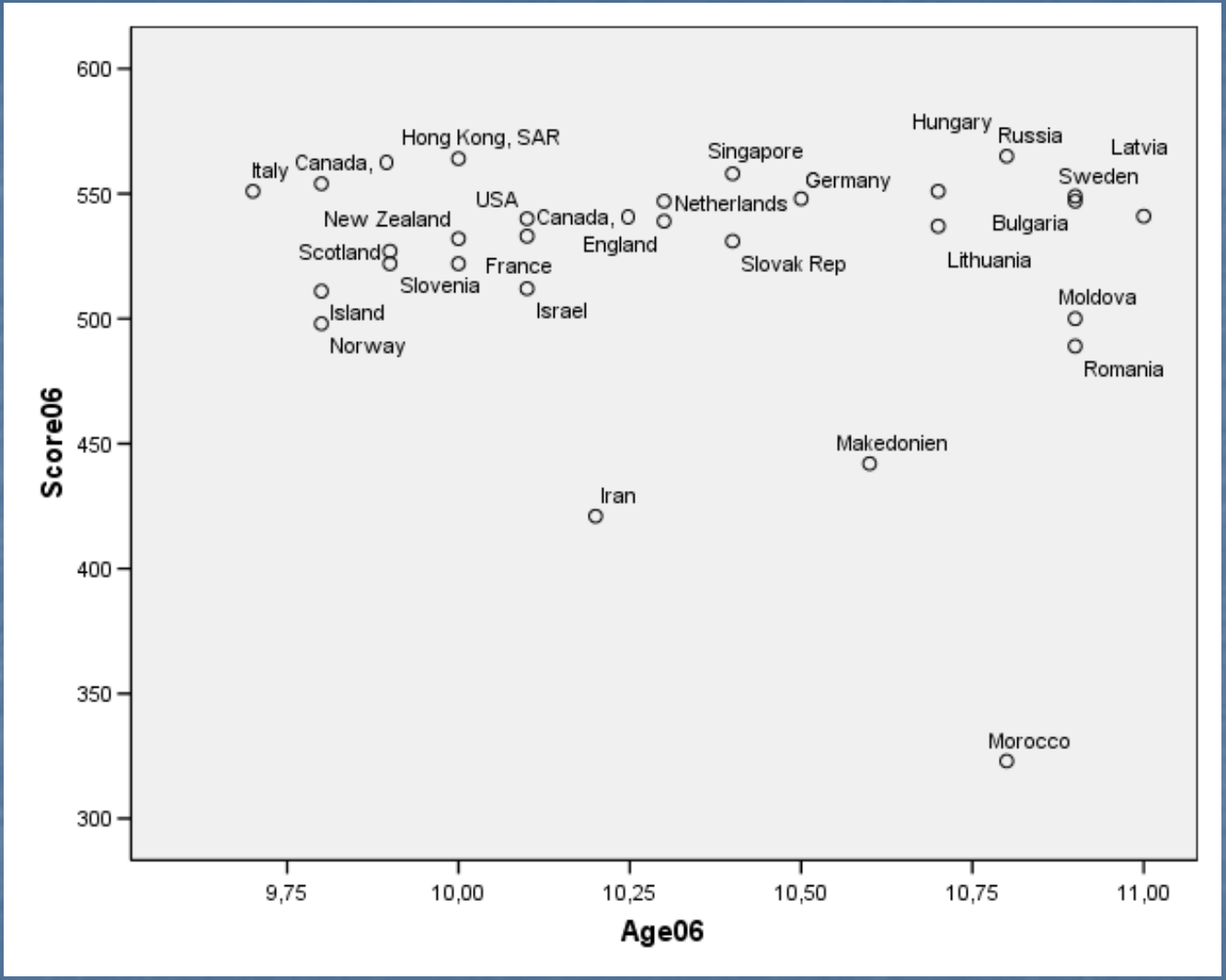
Exhibit 1.3: Trends in Reading Achievement

Countries	PIRLS 2006 Average Scale Score		PIRLS 2001 Average Scale Score		Difference Between 2001 and 2006 Scores	
[2a] Russian Federati	565	(3.4)	528	(4.4)	37	(5.6)
Hong Kong SAR	564	(2.4)	528	(3.1)	36	(3.9)
Singapore	558	(2.9)	528	(5.2)	30	(5.9)
Slovenia	522	(2.1)	502	(2.0)	20	(2.9)
Slovak Republic	531	(2.8)	518	(2.8)	13	(4.0)
Italy	551	(2.9)	541	(2.4)	11	(3.8)
Germany	548	(2.2)	539	(1.9)	9	(2.9)
Moldova, Rep. of	500	(3.0)	492	(4.0)	8	(5.0)
Hungary	551	(3.0)	543	(2.2)	8	(3.7)
Iran, Islamic Rep.	421	(3.1)	414	(4.2)	7	(5.2)
[2a] *Canada, Ontario*	554	(2.8)	548	(3.3)	6	(4.4)
[2b] Israel	512	(3.3)	509	(2.8)	4	(4.4)
New Zealand	532	(2.0)	529	(3.6)	3	(4.1)
Macedonia, Rep.	442	(4.1)	442	(4.6)	1	(6.2)
† Scotland	527	(2.8)	528	(3.6)	-1	(4.6)
‡ Norway	498	(2.6)	499	(2.9)	-1	(3.9)
Iceland	511	(1.3)	512	(1.2)	-2	(1.8)
†[2a] United States	540	(3.5)	542	(3.8)	-2	(5.2)
[2a] Bulgaria	547	(4.4)	550	(3.8)	-3	(5.8)
France	522	(2.1)	525	(2.4)	-4	(3.1)
Latvia	541	(2.3)	545	(2.3)	-4	(3.3)
Canada, Quebec	533	(2.8)	537	(3.0)	-4	(4.1)
Lithuania	537	(1.6)	543	(2.6)	-6	(3.1)
† Netherlands	547	(1.5)	554	(2.5)	-7	(2.9)
Sweden	549	(2.3)	561	(2.2)	-12	(3.2)
England	539	(2.6)	553	(3.4)	-13	(4.3)
Romania	489	(5.0)	512	(4.6)	-22	(6.8)
Morocco	323	(5.9)	350	(9.6)	-27	(11.3)

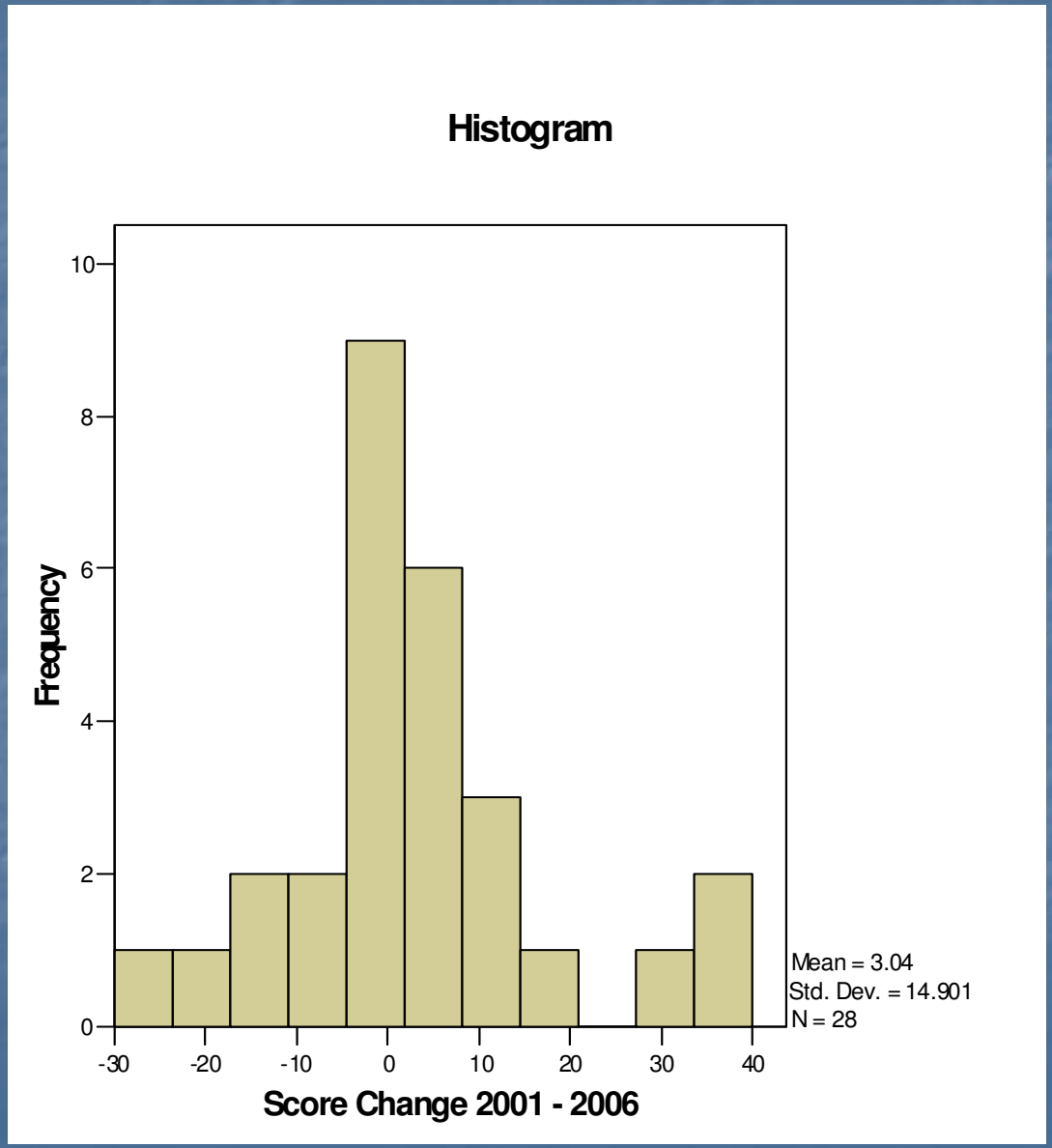


Age and reading achievement

The correlation between mean age of students within country and achievement is -0,15.

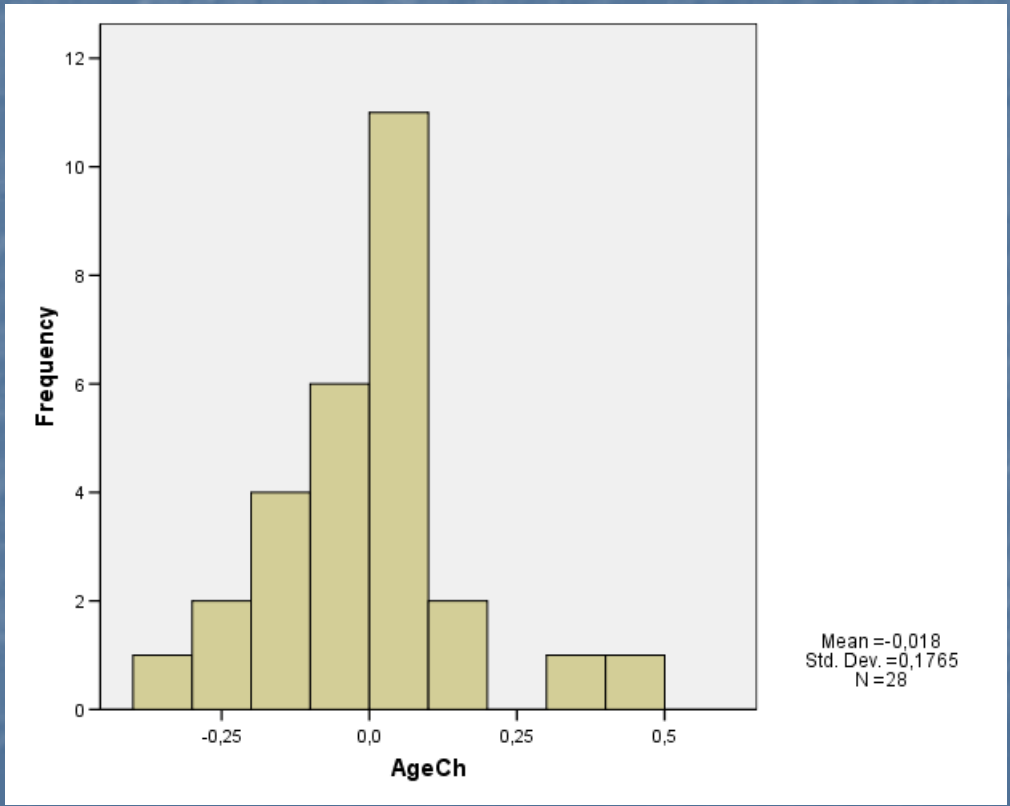


Distribution of score changes



8 countries had significant gains, while 6 countries had significant losses

Distribution of age changes



5 countries no change in mean age

16 countries small change in mean age +/- .1

3 countries younger -.2 (Lithuania, Norway, Romania)

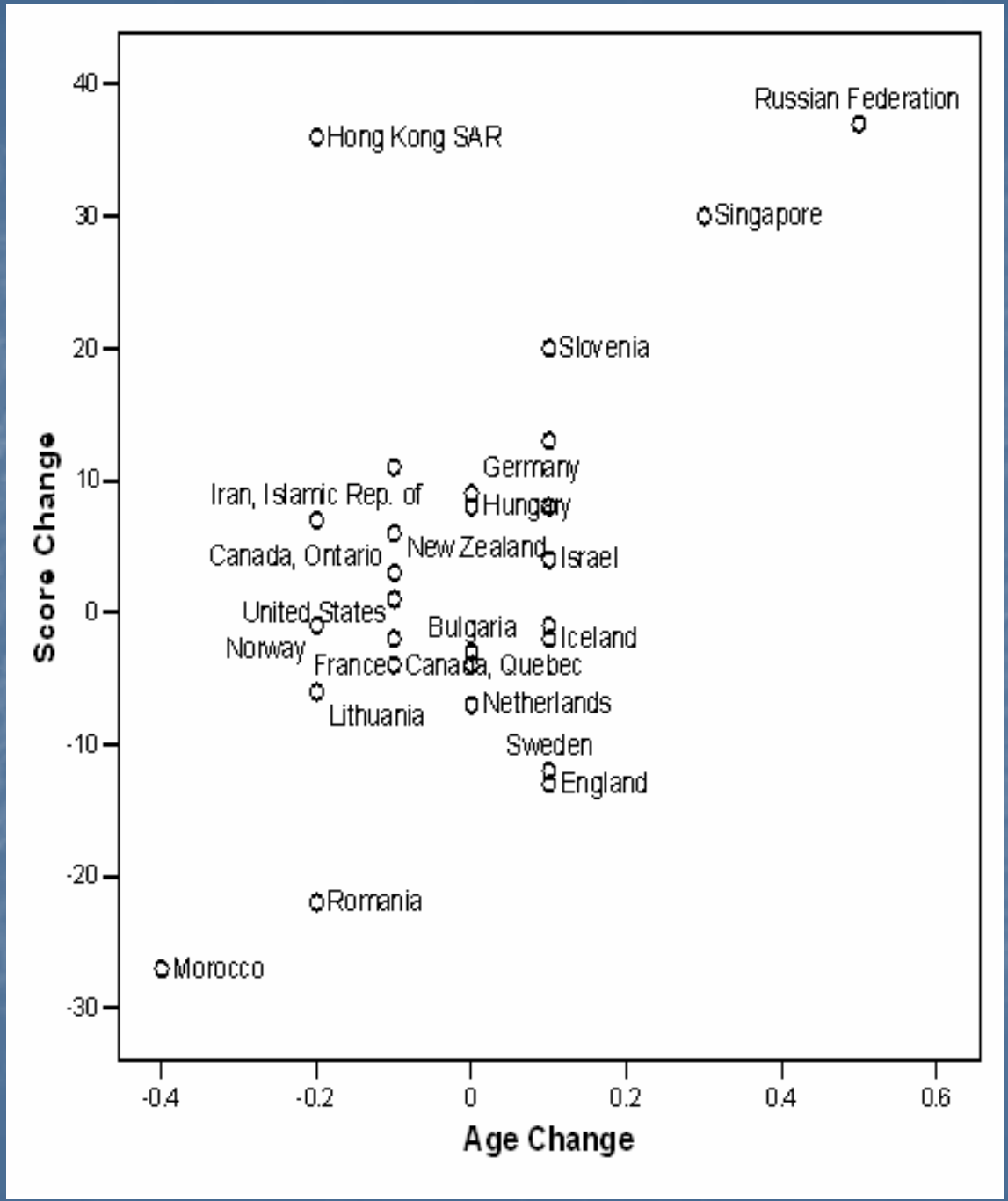
1 country much younger -.4 (Morocco)

2 countries much older .5 & .3 Russia & Singapore

Age Change

Difference in mean age of students in 2006 and 2001 related to score change:

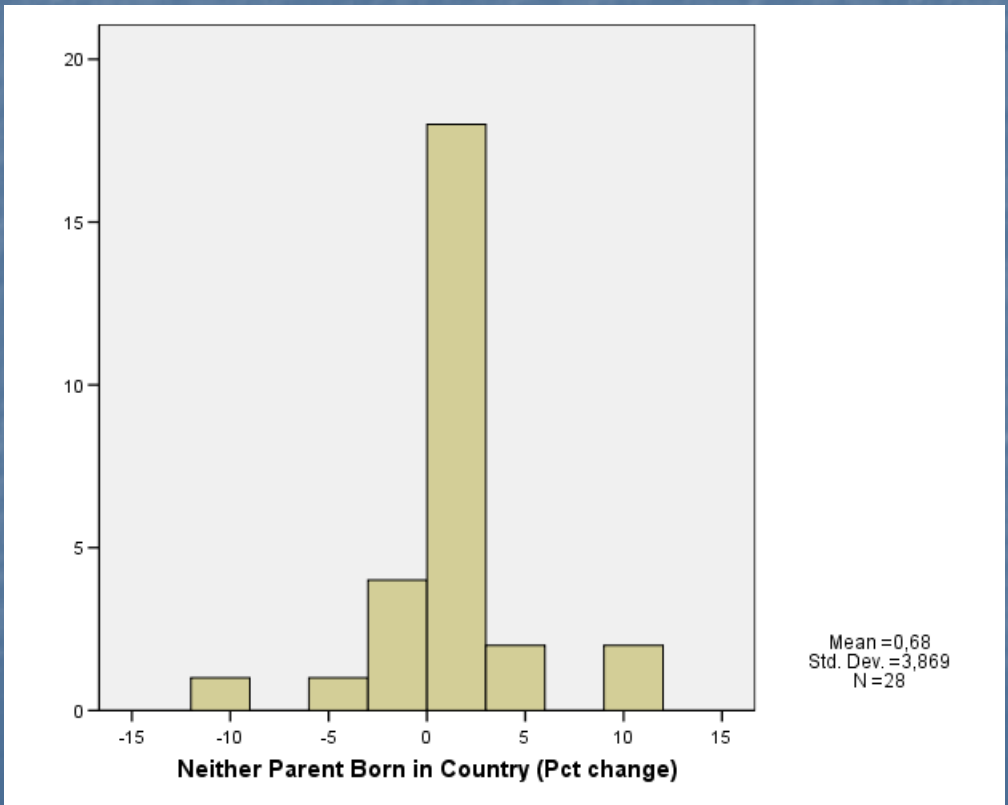
- Strong and significant correlation with age change (.53)
- In the Russian Federation all students had completed 4 years of schooling in 2006, while in 2001 only 50 % had.
- In Slovenia the students had four years of schooling in 2006 and only three years in 2001



Distribution of change in Neither Parent Born i Country

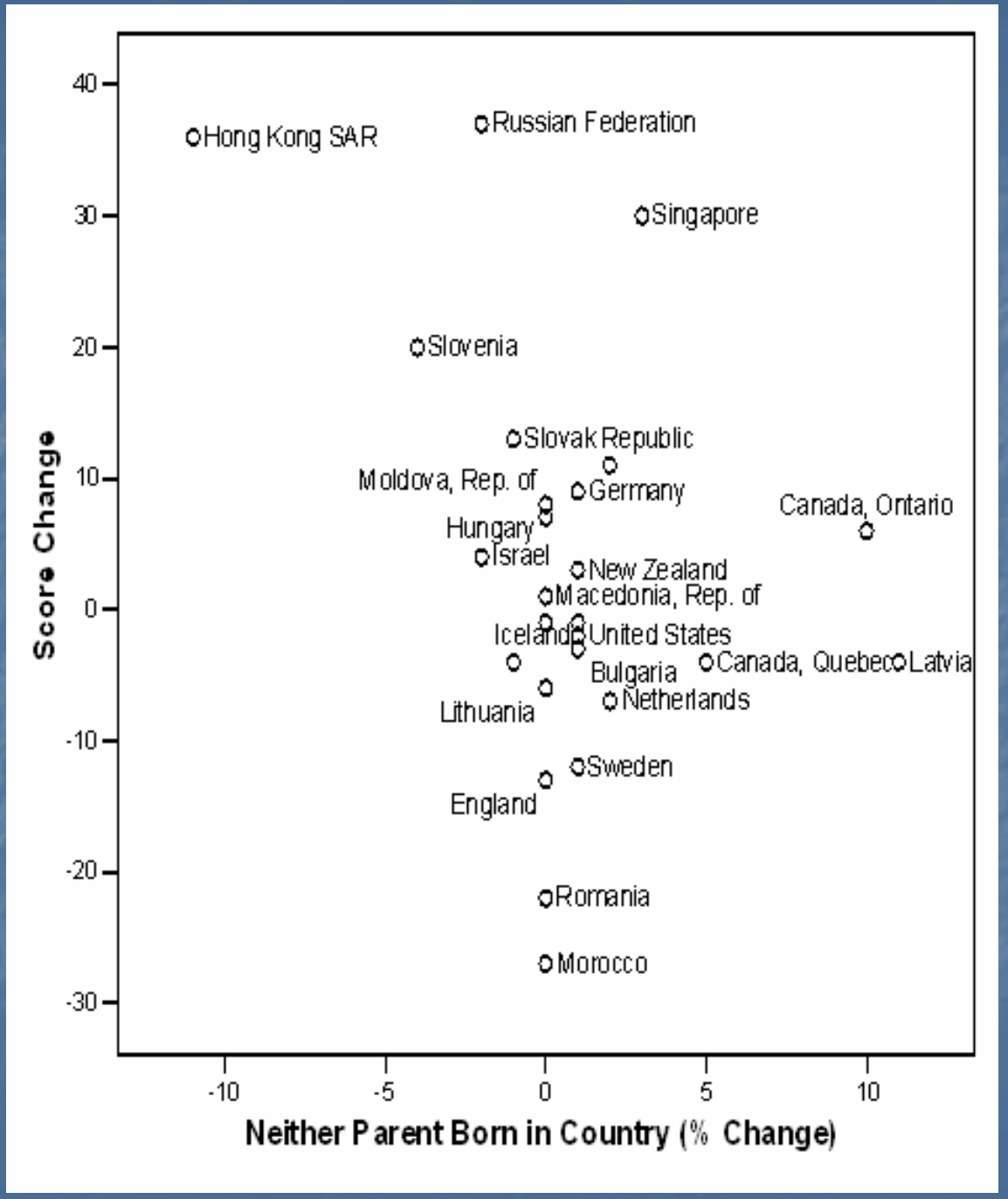
Increase most in Canada, Latvia

Decrease most in Hong Kong & Slovenia



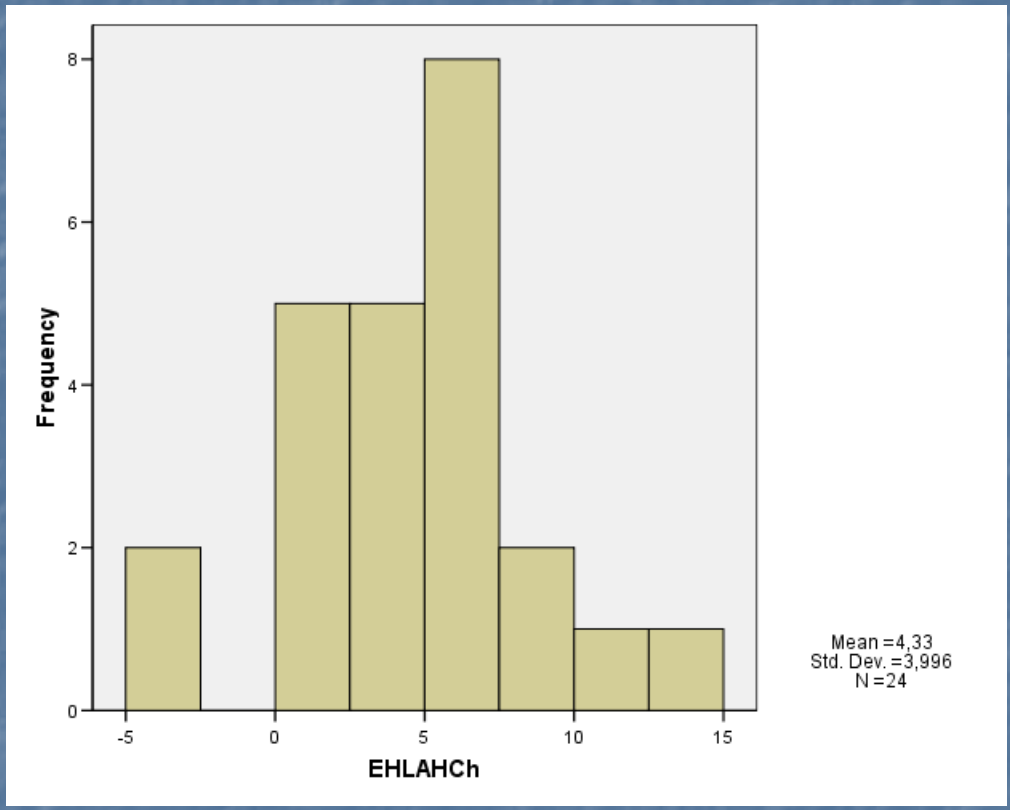
Neither Parent Born in Country

An increase of students with neither parent born in country is related to negative achievement trends. Change correlates negatively (-.35) with score change



Distribution of change in EHLA

EHLA: Index composed of:
- Read books
- Tell stories
- Sing songs
- Play with alphabet toys
- Play word games
- Read aloud signs and labels



Bulgaria and Rumania report decrease

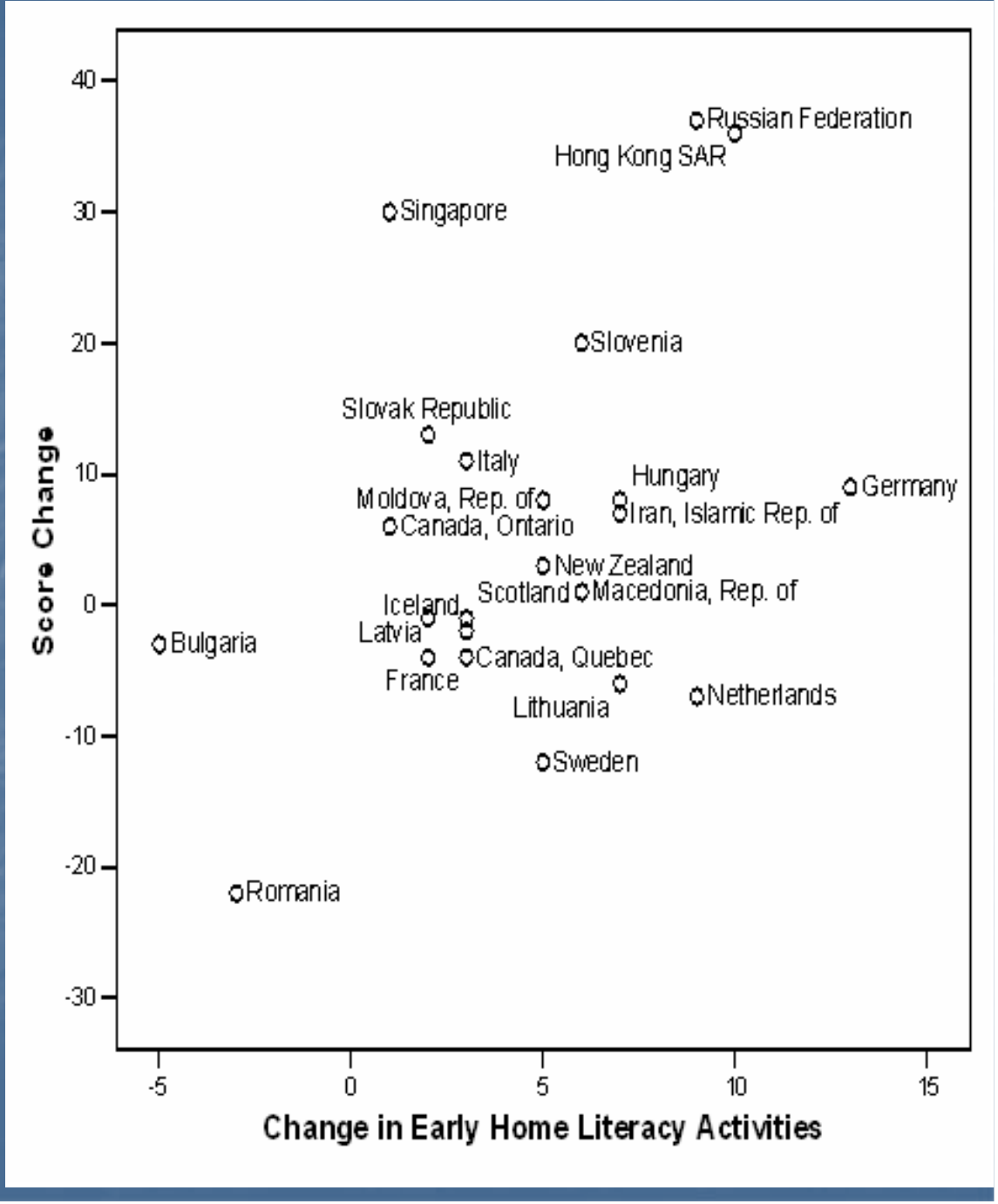
12 countries report substantial increase, Ex. Germany, Hong Kong, Russia & Slovenia

10 countries reports small increase

Early Home Literacy Activities

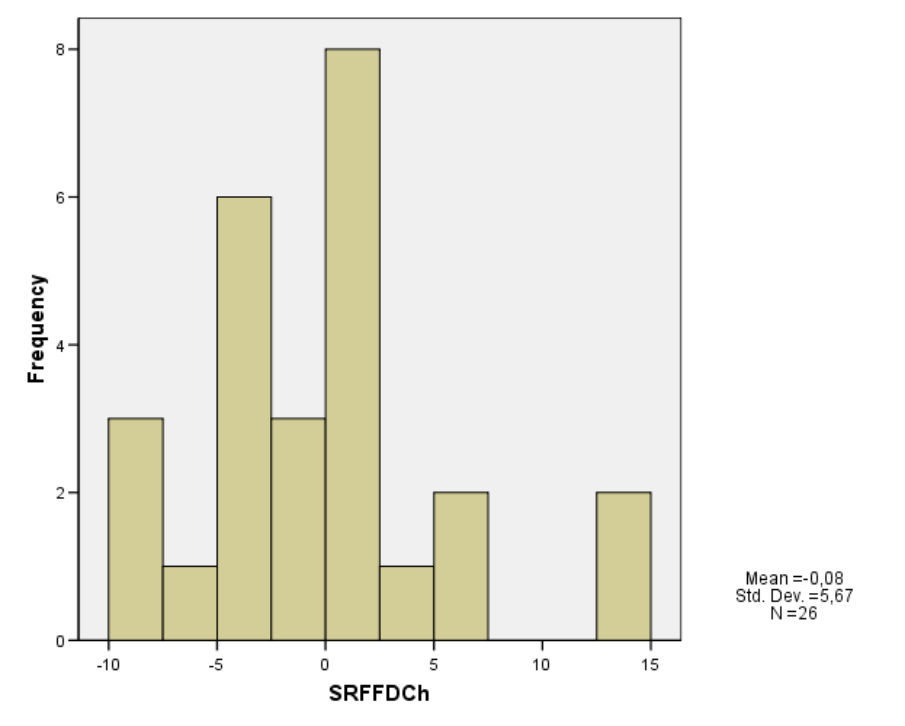
Change in EHLA correlates positively (.40) with score change

Change in Children's Books at Home correlates positively (.34) with score change

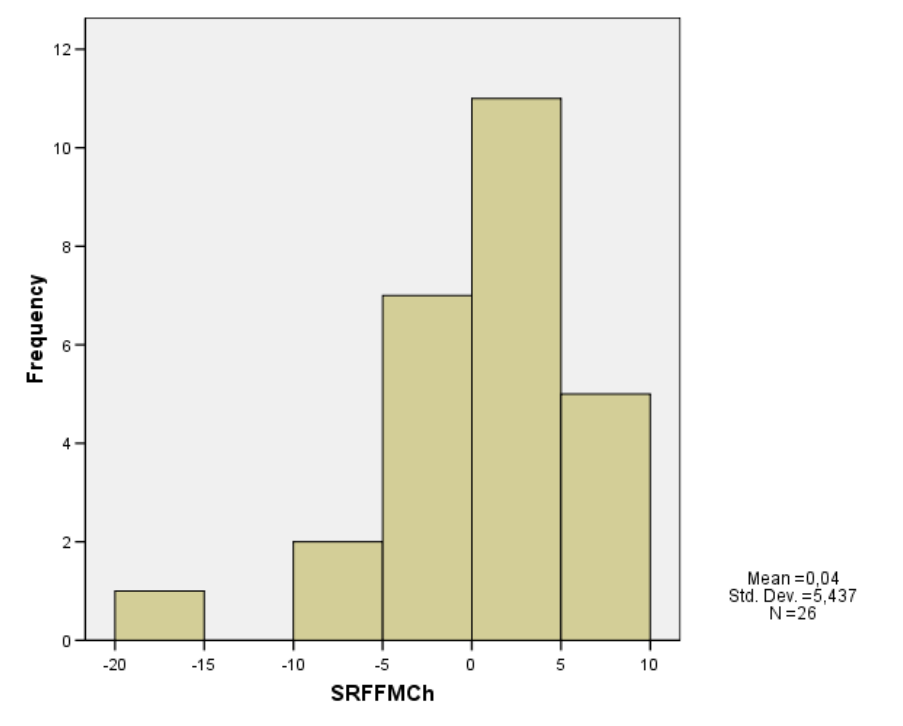


Distribution of change in pct students reading for fun outside school

- Daily



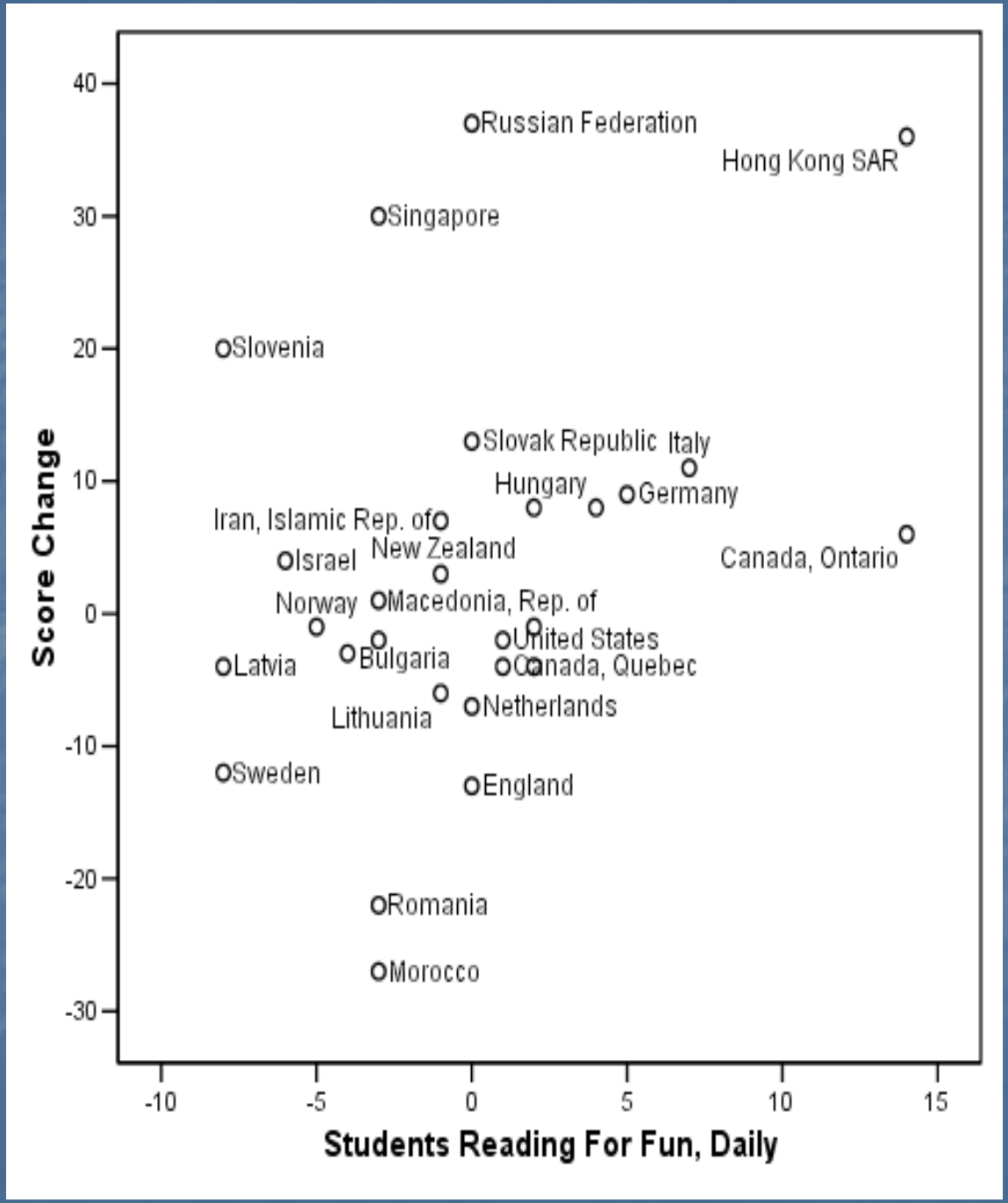
- Monthly



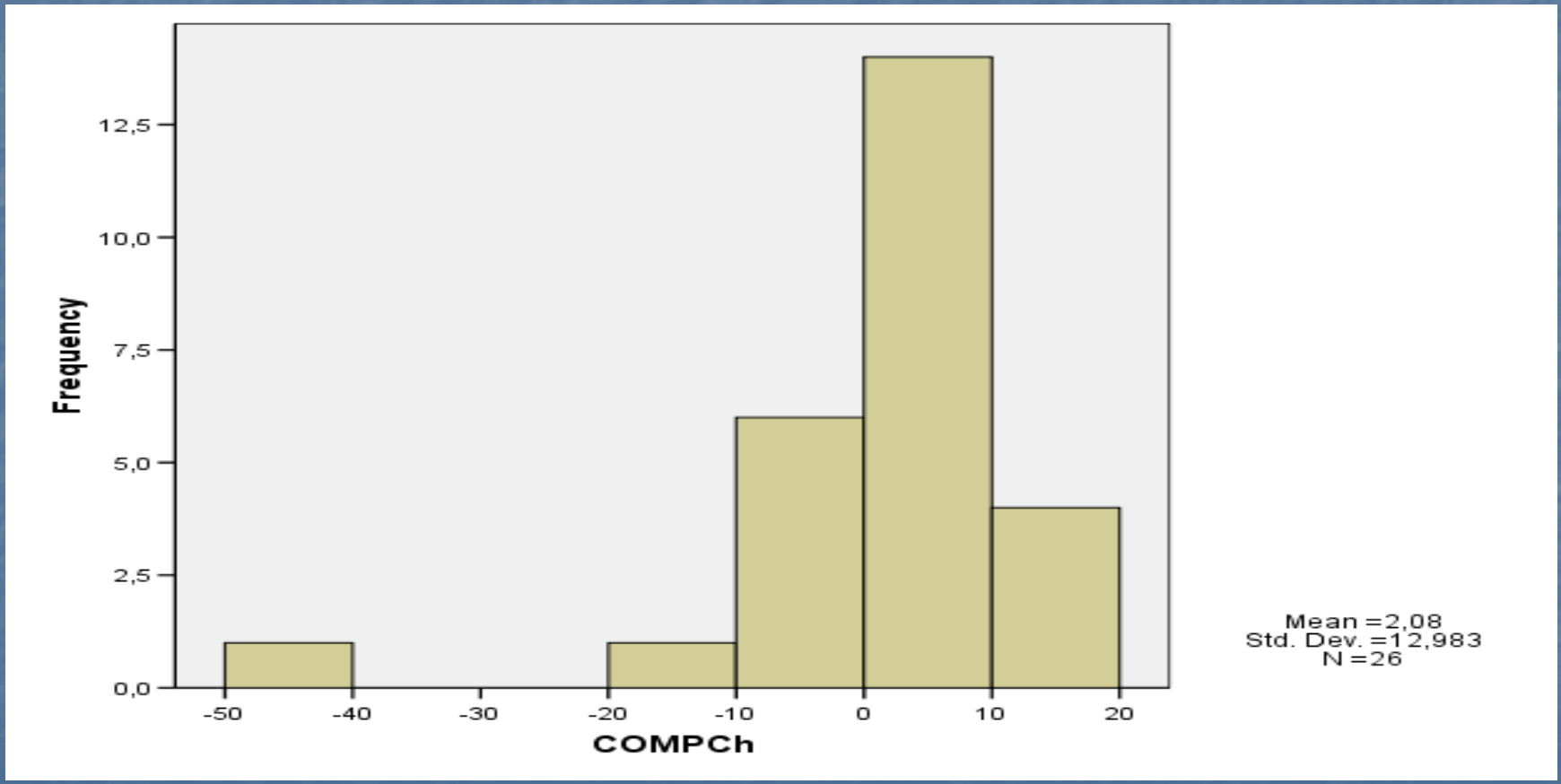
Students Reading For Fun

Change in Students Reading For Fun Outside of School Daily is positively correlated (.35) with score change.

Change in Students Reading For Fun Outside of School Monthly is negatively correlated (.-.40) with score change.



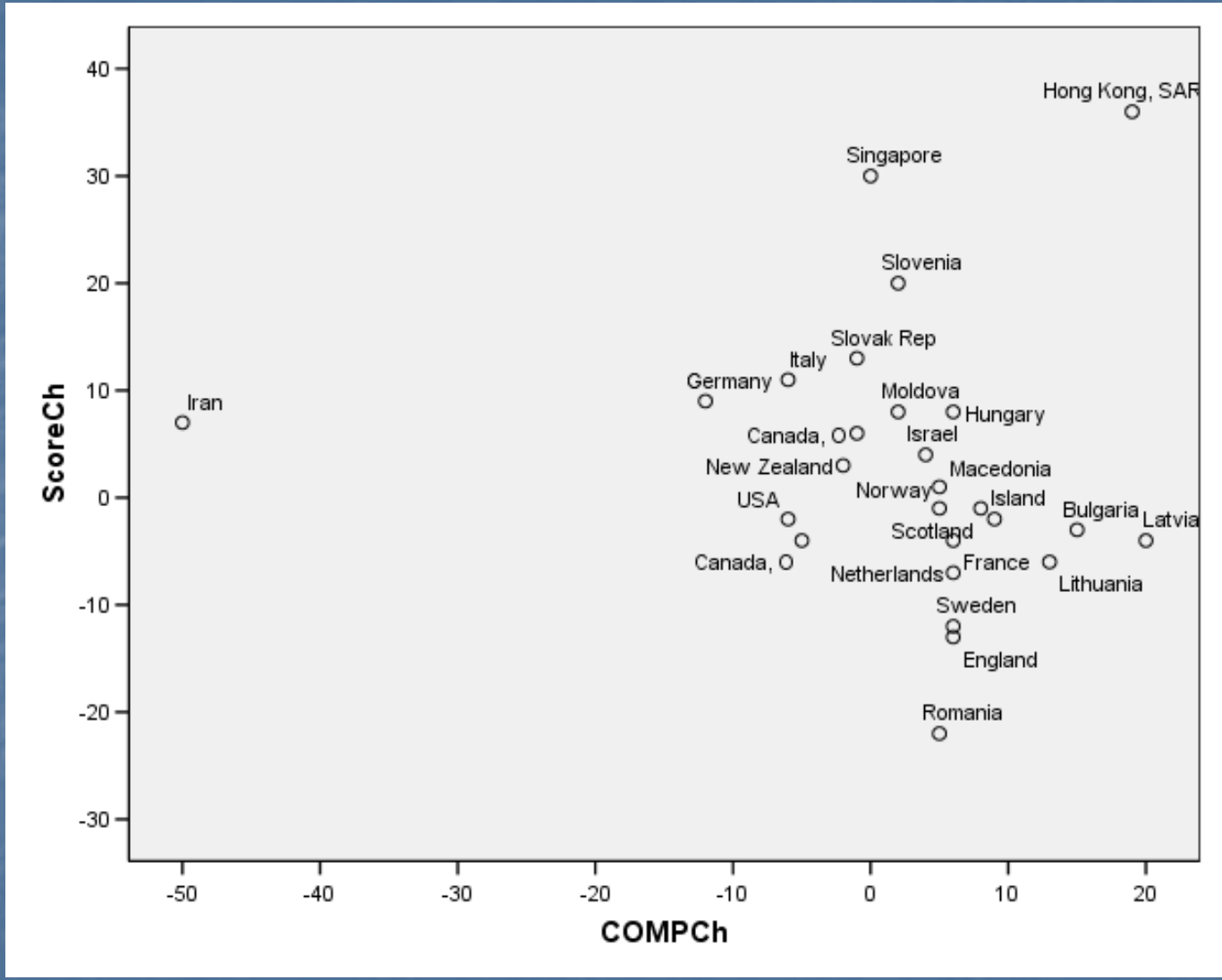
Distribution of change in use of computer at home



Students use of computer at home

No correlation between change in use of computer at home and score change (r = 0,18)

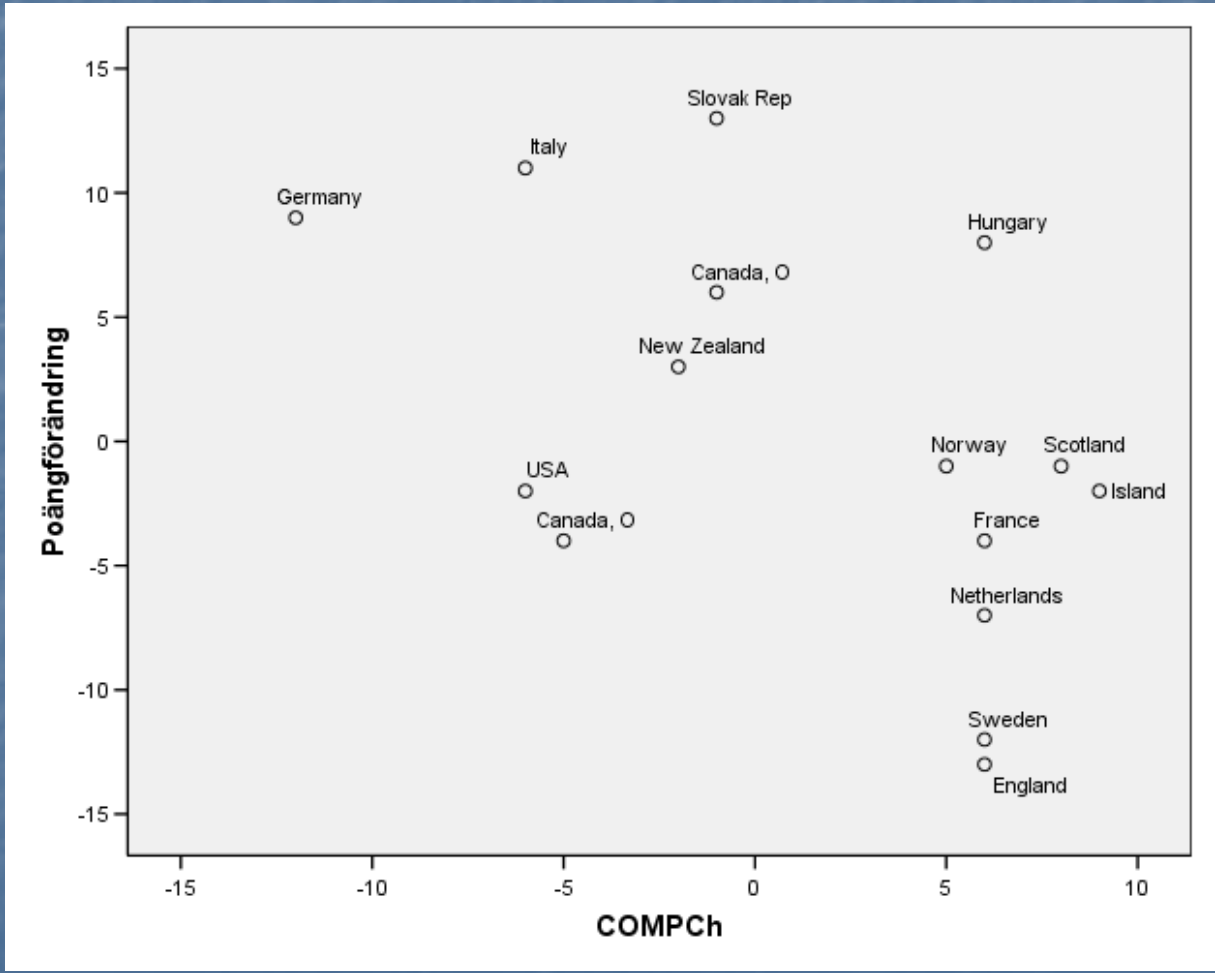
Problems with ”outliers” in this analysis



Students use of computer continued

Analysis limited to countries/regions within OECD.

Negative correlation between change in use of computer at home and score change (r = -0,52, b = -0,65)

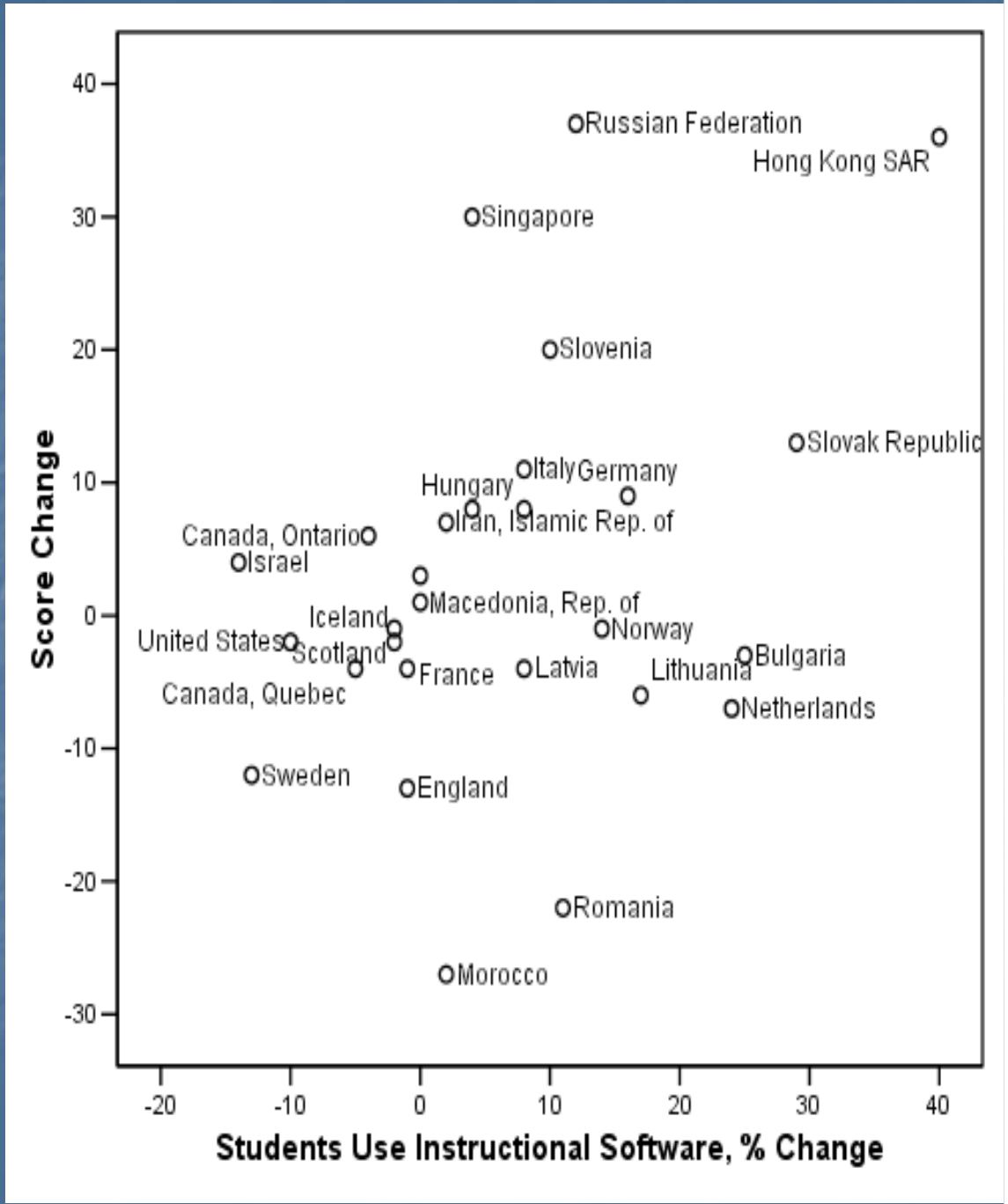


Computer Availability and Use at School

Change in Students' Use of Instructional Software is positively correlated (.36) with score change

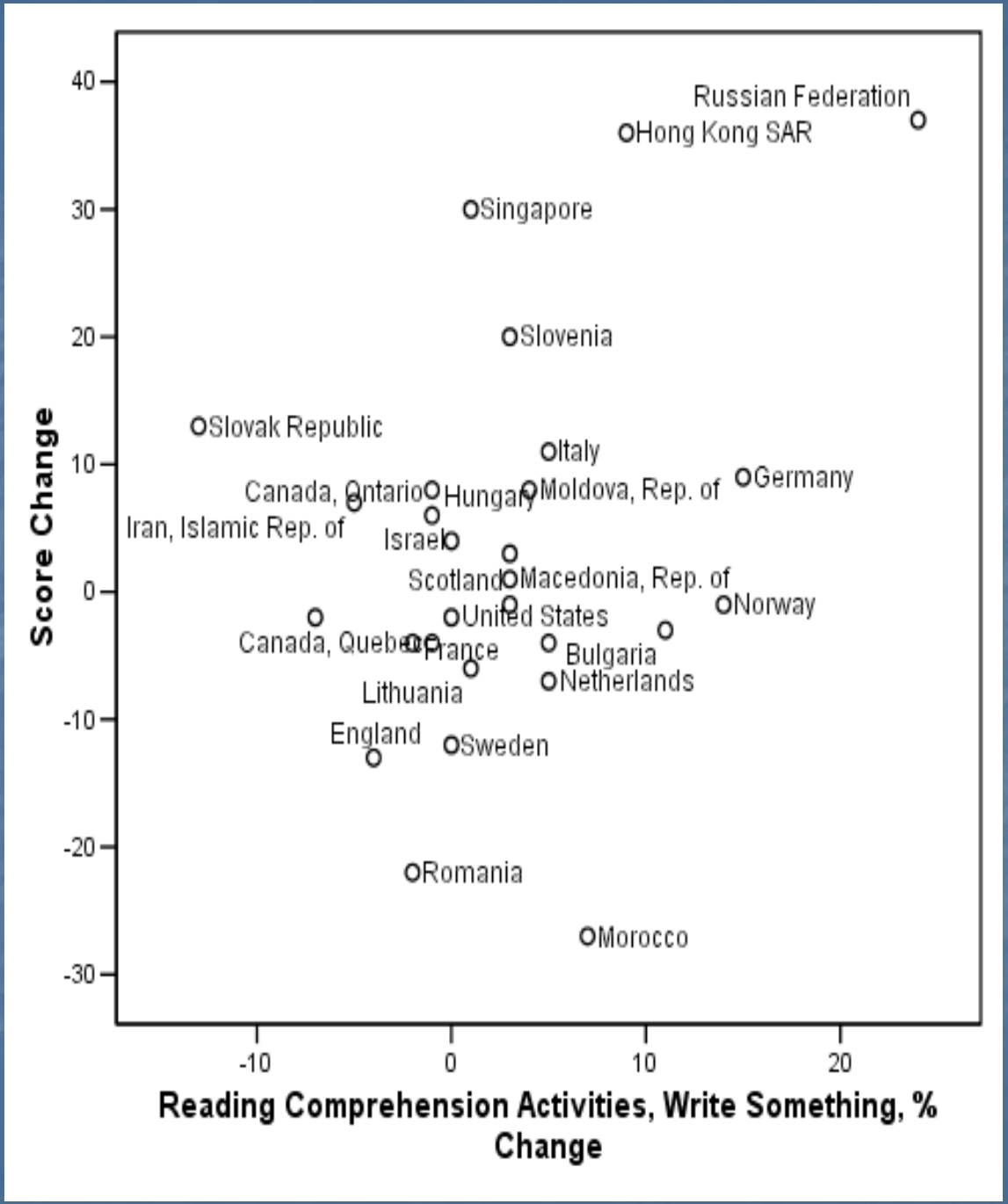
Change in Availability of Internet Connection is not correlated with score change

Change in Computer Availability for Student Use, or in Reading Stories on Computer are weakly positively correlated with score change



Reading Comprehension Activities

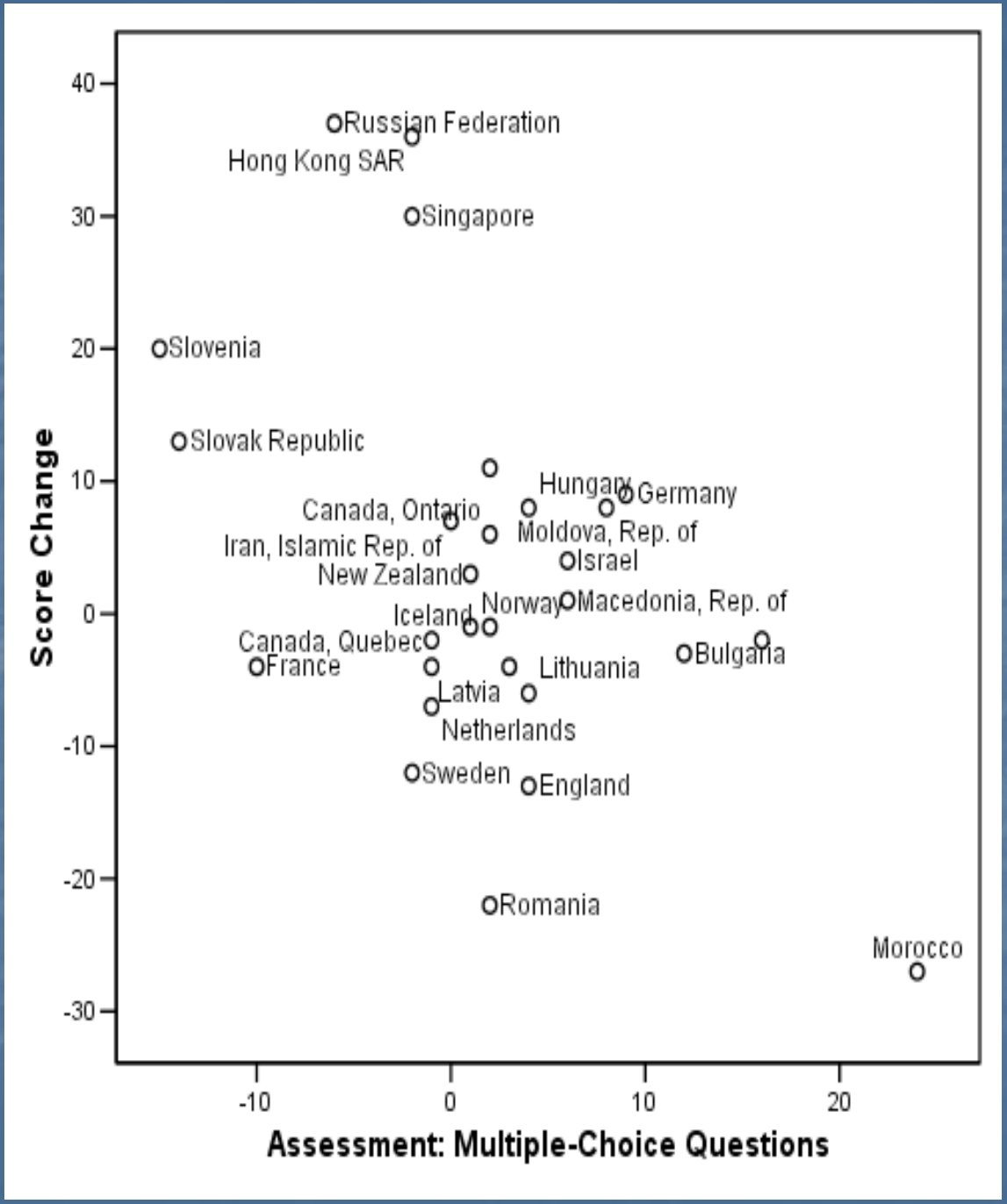
Change in Reading Comprehension Activities, Write Something correlates .31 with score change



Assessment methods

Change in Assessment with Multiple-Choice Questions is negatively correlated (-.47) with score change

Change in frequency of use other assessment methods is not correlated with score change



Some conclusions

- Changes in a country's result are due to many factors. Some influences in positive direction others in negative direction.
- The analysis here is just examples based on a selection of information from the intrernational database. The complete database allows for analysis of many more factors, and with a higher degree of precision.
- Some main conclusions:
  - Reading outside school is important,
  - Parental involvement and support in the early development is important
  - The school efforts are also of great importance