

Reading skills, learning and skills loss after compulsory education

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Anders Rosdahl, SFI, Denmark
ar@sfi.dk www.sfi.dk

The Danish 1984-generation: Reading skills from age 15 to 27

- 4,235 tested in PISA 2000 at age 15
- 1,881 re-tested and re-interviewed in PIAAC 2012 at age 27
- 46,500 young people
- 90 per cent of the 1984 birth cohort

PISA reading skills = PIAAC literacy

'the ability to understand, use and reflect on written texts, in order to achieve one's goals, to develop one's knowledge and potential, and to participate effectively in society' (PISA).

'the ability to understand, evaluate, use and engage with written texts to participate in society, to achieve one's goals, and to develop one's knowledge and potential' (PIAAC).

Proficiency scores and levels

Scores: PISA 0-1000
PIAAC 0-500

Levels: PISA: 0-1-2-3-4-5
PIAAC: 0-1-2-3-4-5

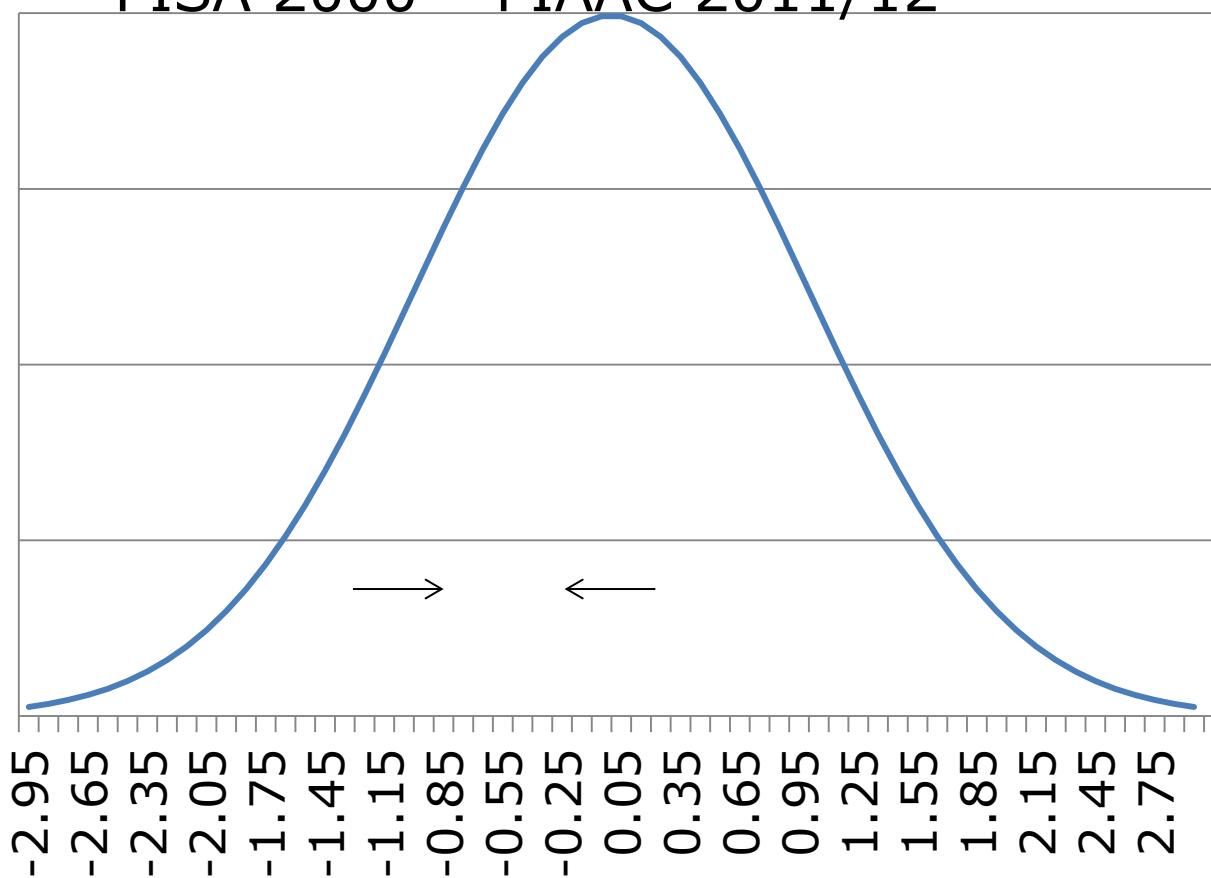
Standardized scores: From -3 to + 3
(Mean = 0, SD = 1)

Proficiency scores and levels

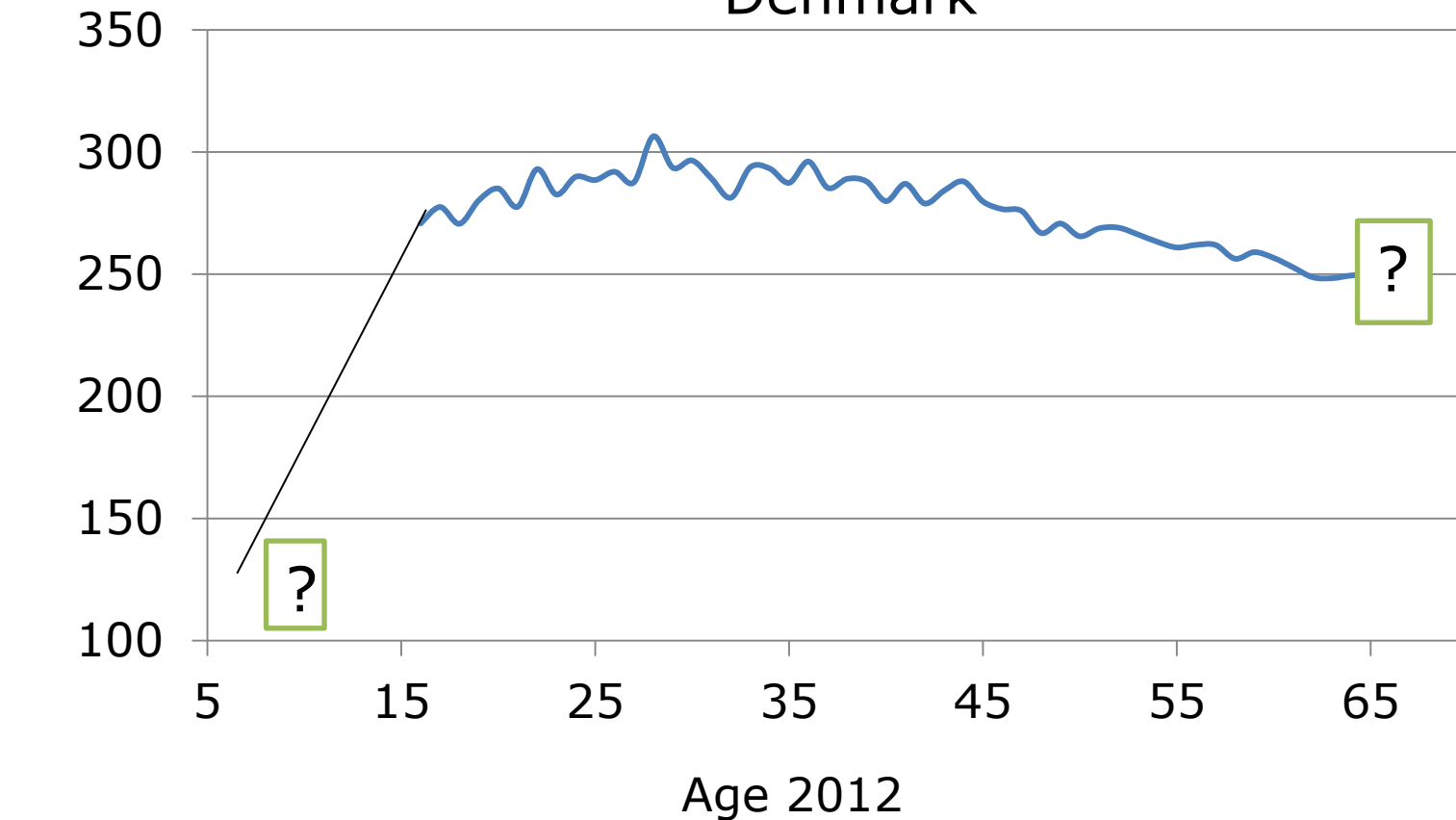
PISA and PIAAC scores cannot be converted to each other – as you e.g. convert temperature from Celsius to Fahrenheit

We study movements in the reading skills distribution from age 15 to 27

Standardized reading skills distribution PISA 2000 - PIAAC 2011/12



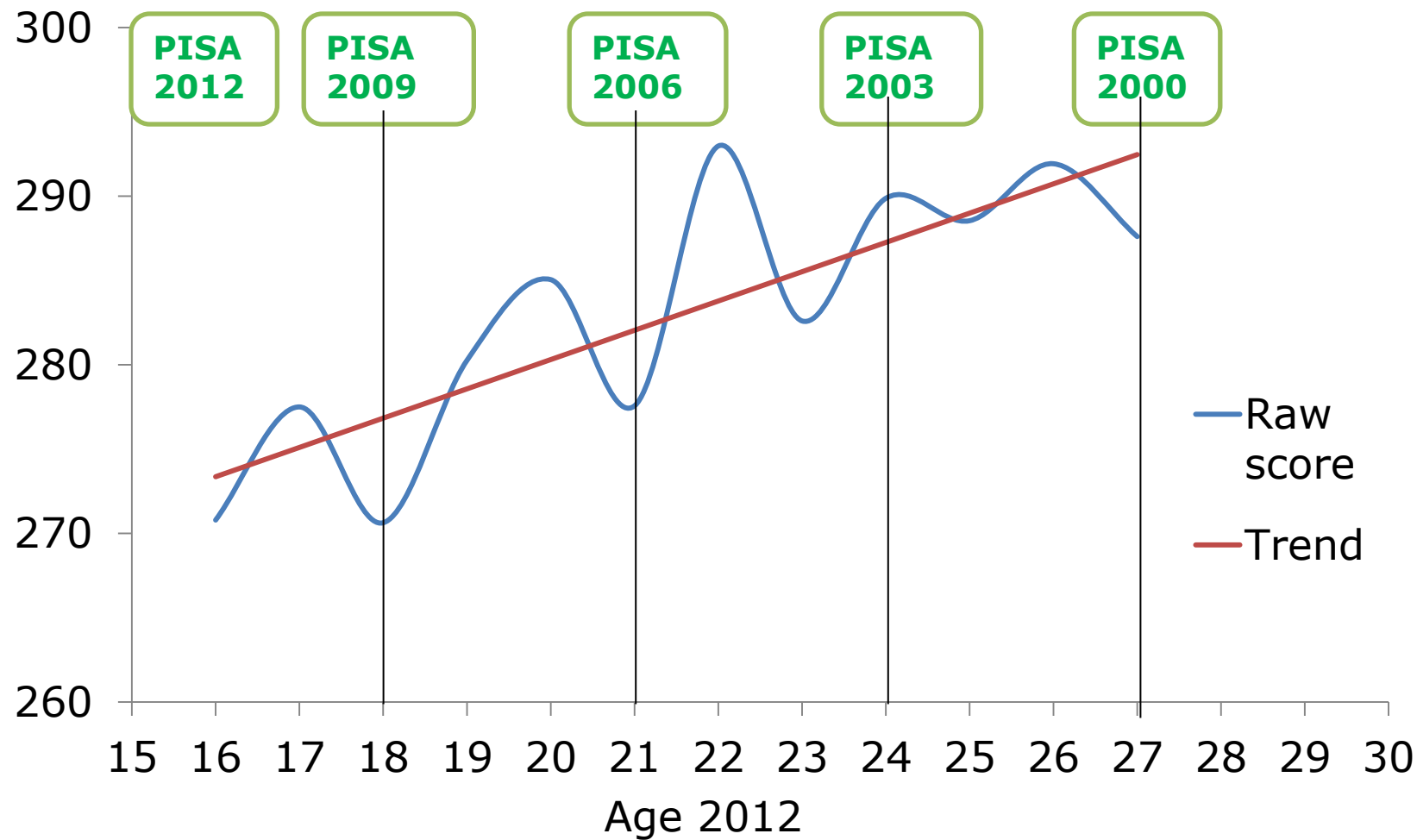
Score Age and reading score in PIAAC – 16-65 Denmark



Age and reading skills

- An inverted U – on average
- General finding in several cross sectional studies
- The few existing longitudinal studies suggest a similar pattern
- The precise pattern varies across individuals, groups and countries

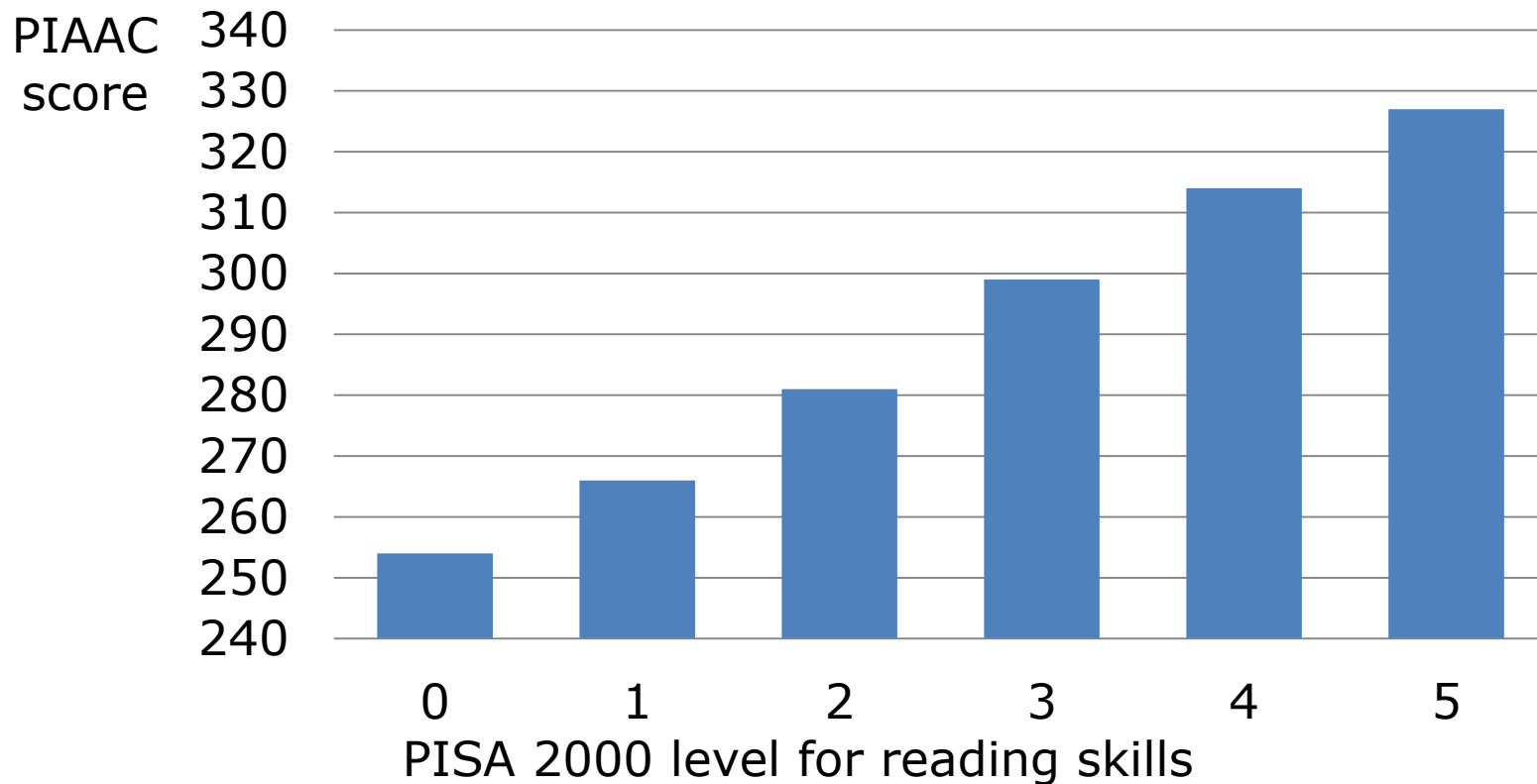
Score Age and reading score in PIAAC (0-500) -



Interpretation

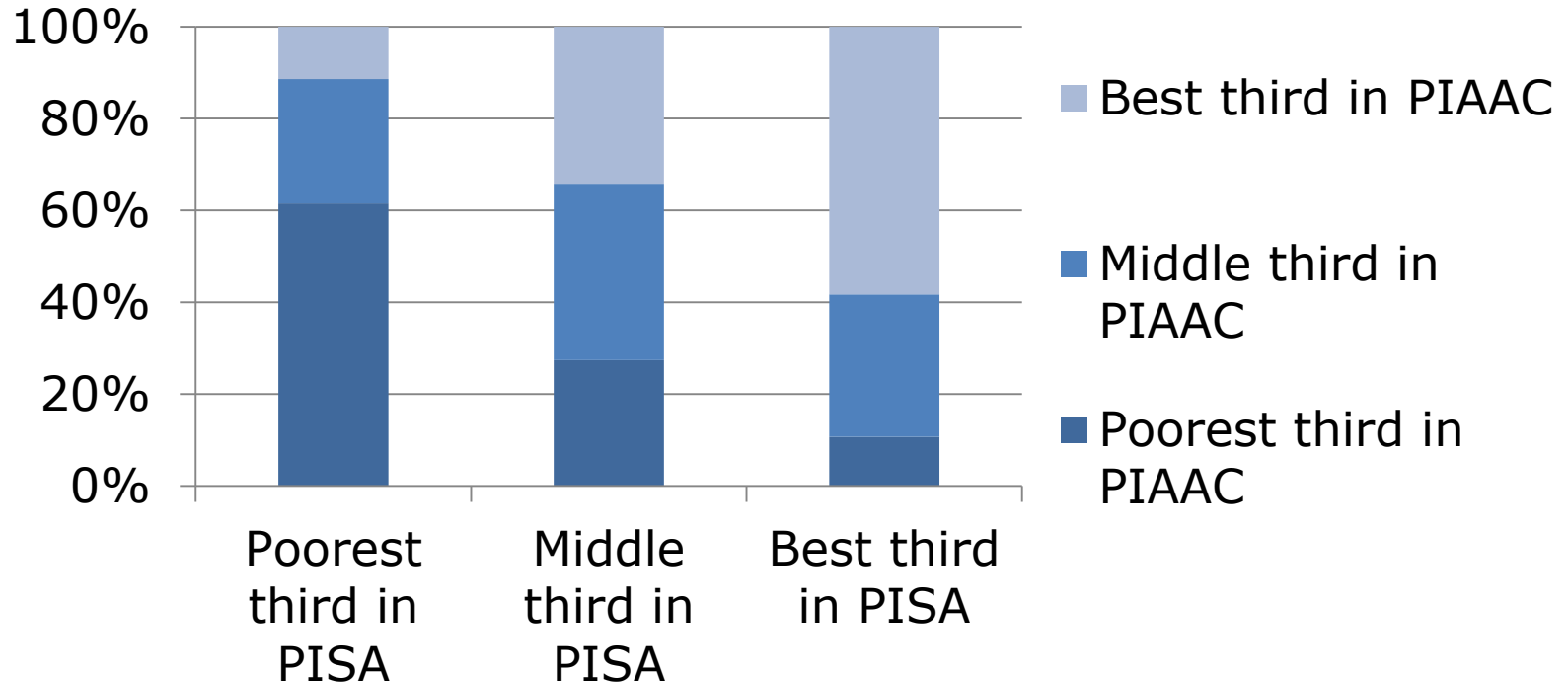
- On average, young people's reading skills increase substantially in the first decade after compulsory school – corresponding to more than 1.5 years of education (estimate)
- Similar result in Canada: PISA-15 (2000) and PISA-24 (2009) – absolute increase corresponding to about 1 school year

Reading at age 15 (PISA) and 27 (PIAAC)



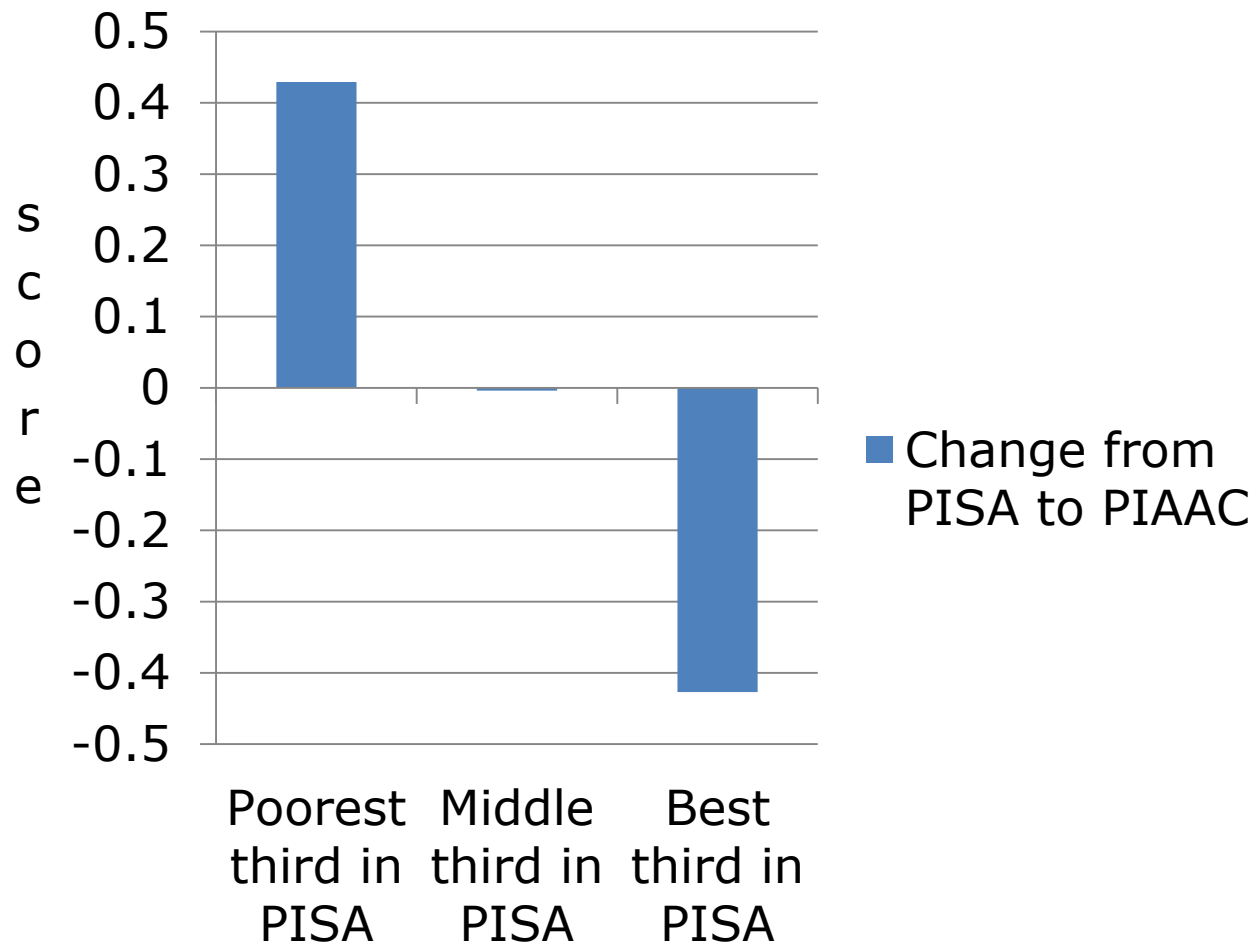
- Strong positive association between reading skills at age 15 and 27
- Compulsory schooling has long-term impacts
- And in general: History dependence in cognitive skills over the life-cycle - even from child to old age

Reading skills at age 15 (PISA) and 27 (PIAAC)



- Thus, there are also movements in the skills distribution from age 15 to 27
- Policy efforts targeted young people after the age of 15 are important
- Some young people are at risk

Reading skills: PIAAC – PISA 2000



Interpretation

- "Trend towards the mean"
- The higher (lower) the skills at age 15, the lower (higher) is the probability of upwards movement in the skills distribution from age 15 to age 27
- A statistical phenomenon, not a causal mechanism
- Movements are combined effects of statistics and "real" processes

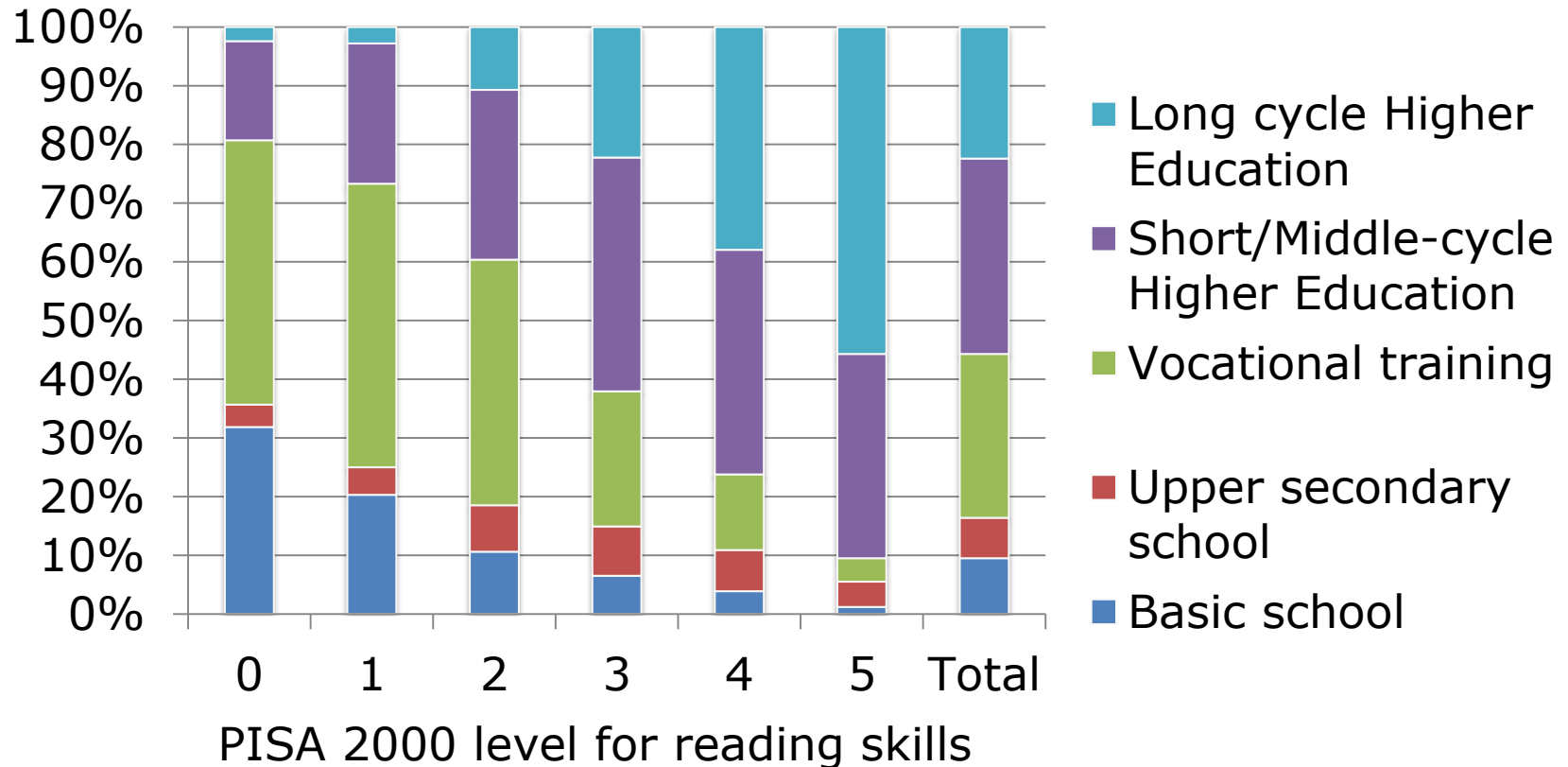
To sum up: Development of reading skills from age 15 to 27 (Point 1)

The basics are:

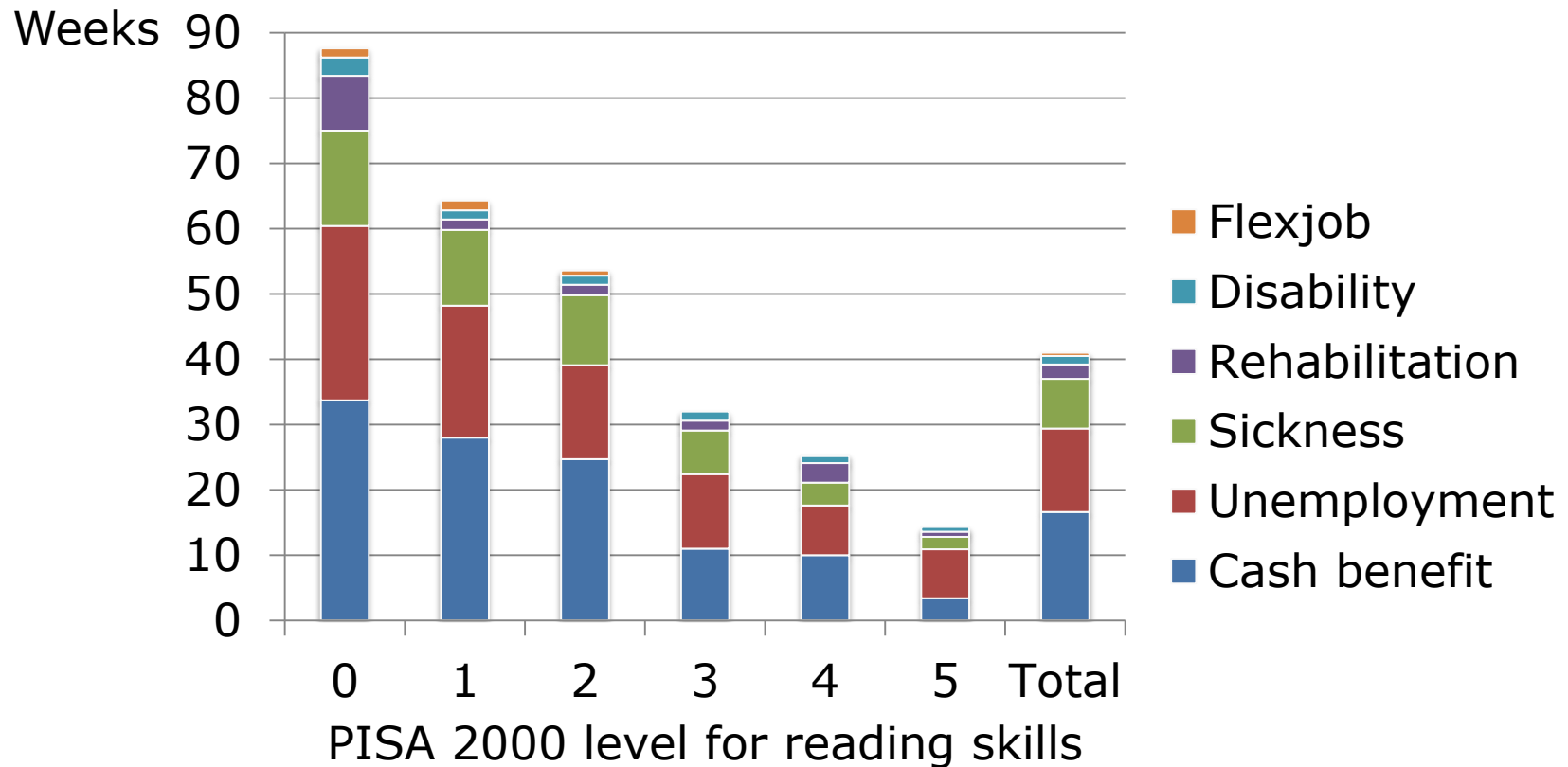
- Substantial absolute increase
- Strong association between reading skills at age 15 and 27
- Movements up and down

Reading skills at age 15 are
associated with the life course
of young people up until age 27
(Point 2)

Highest level of completed/ongoing education 2011/12

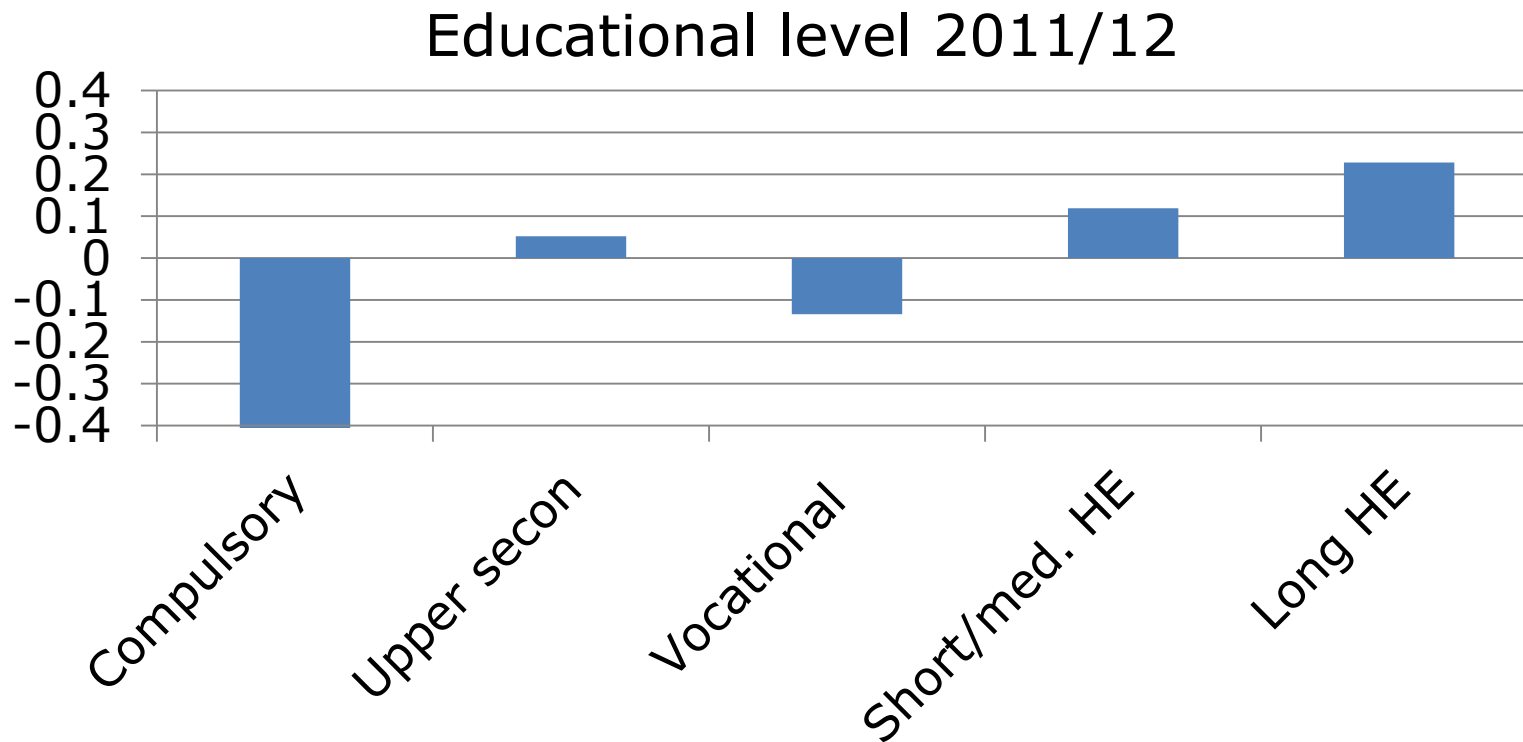


Average number of weeks with transfer income 2000-2012



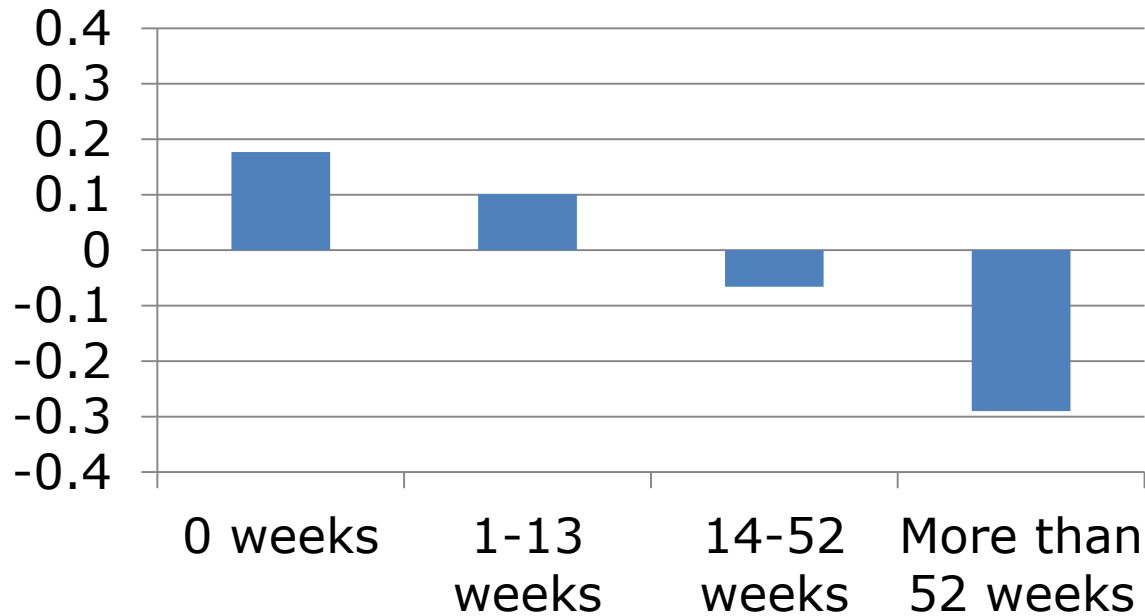
The life course of young people
from age 15 to 27
impacts reading skills at age 27
(Point 3)

Change in reading score from 2000 to 2011/12 Person with average reading score in PISA 2000



Change in reading score from 2000 to 2011/12 Person with average reading score in PISA 2000

Unemployment, sickness:
Transfer income 2000-2012



Winners and losers (Point 4)

Good reading skills at age 15



Higher education

No unemployment/ sickness



Positive impact on
reading skills at age 27

Winners and losers (Point 4)

Poor reading skills at age 15



Low/no education

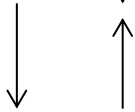
Much unemployment/ sickness



Negative impact on
reading skills at age 27

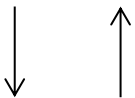
Virtuous and vicious circles (Point 4)

Good skills



Many learning opportunities

Poor skills



Few learning opportunities

Main conclusion (I)

Reading skills at the age of 15 →

Life up to the age of 27 →

Reading skills at the age of 27

Skills → learning opportunities → Skills
(PISA) (PIAAC)

Main conclusion (II)

Basic school (reading skills in PISA) has a clear impact on reading skills at age 27

Education after basic school, in particular higher education, promotes reading skills whereas long time neither in work nor in education has a negative impact

We could not show an impact on reading skills of years in employment from 15 to 27

Final tentative conclusions (III)

Among young people reading skills are..

- developed primarily through education
- maintained through working experience
- lost due to long time in inactivity such as unemployment and sickness