

Gender and school differences in pupils' reading  
performance  
in the first and second grades  
of Icelandic primary schools  
using Beginning Literacy

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## DECLINING LITERACY IS A THREAT TO SOCIETY



Illugi Gunnarsson, minister of education in a speech in 2014 when outlining his vision for improvements in Icelandic schools



## BUT HOW IS ICELAND DOING?

- The debate on the quality and effectiveness of Icelandic schools has mainly been based on studies conducted amongst the oldest age groups
- Less is known about student performance in the first years of primary school
- Some popular narratives
  - Girls are outperforming boys
  - School differences are of little importance



## SOME NOTES ON THE ICELANDIC SCHOOL SYSTEM

- Most children attend pre-primary institutions (kindergartens) from around the age of 2 and until they begin primary school
- Children start compulsory education in August the year they turn 6 years
- Most children attend the nearest school and so the intake of most schools is rather mixed





## OUR DATA

- Results of literacy screening tests from schools using the Beginning Literacy method
  - Collected by the Centre for School Development at the University of Akureyri to give schools feedback on where their students are in comparison with others
- Not possible to link individual students between tests
  - Still we think this data provides interesting information



## NUMBER OF STUDENTS TESTED IN EACH ASSESSMENT BY YEAR

		School year								
Grade	Test	2005-6	2006-7	2007-8	2008-9	2009-10	2010-11	2011-12	2012-13	Total
Grade 1 (6-7 year olds)	I	74	102	150	547	1,031	1,276	1,547	1,459	6,186
	II	74	98	144	551	1,026	1,272	1,563	1,549	6,277
	III	73	100	145	547	1,002	1,158	1,591	1569	6,185
Grade 2 (7-8 year olds)	IV	84	113	144	461	889	1,300	1,4743	1,593	6,058
	V	87	120	139	272	497	715	834	924	3,588
	VI	85	115	139	469	865	1,180	1,400	1,583	5,836
<b>Total</b>		477	648	861	2,847	5,310	6,901	8,409	8,677	34,130



## GENDER DIFFERENCES IN LITERACY

- **National testing:** considerable gender differences in the favour of girls in 4th grade, increasing in 7th grade and yet again in 10th grade
- **PIRLS 2006:** girls had significantly higher reading achievement than boys. In Iceland, this difference was greater than the average in the other participating countries.
- **PISA:** results in 2000 - 2012 showed that girls were well ahead of boys in reading comprehension
- **Regular surveys** carried out from 1968 to 2009 have shown that the proportion of 10-16 year old students who do not voluntarily read a single book in a 30 day period has increased from 11% to 28%

About 24% of 15 years old boys in Iceland are not able to read to their own benefit





## GENDER DIFFERENCES IN EACH ASSESSMENT BY YEAR

Grade	Test	2005-6	2006-7	2007-8	2008-9	2009-10	2010-11	2011-12	2012-13
Grade 1 (6-7 year olds)	I	-5,7	-6,0	-5,2	-2,5	-1,7	-3,9	-5,8	-4,2
	II	-9,9	-5,5	-9,2	-4,5	-5,6	-5,2	-6,3	-5,7
	III	-6,7	-5,6	-8,0	-4,6	-9,9	-4,9	-8,8	-7,9
Grade 2 (7-8 year olds)	IV	0,4	-8,8	-6,9	-9,6	-3,2	-6,6	-5,3	-5,5
	V	-5,5	-8,3	0,9	-8,7	-3,5	-5,7	-4,5	-4,1
	VI	-4,7	-6,4	-0,3	-8,9	-6,6	-7,9	-5,7	-5,7



## AVERAGE GENDER DIFFERENCES AND EXPLAINED VARIANCE (ETA SQUARED) IN EACH TEST

Grade	Test	Average difference	Eta squared
Grade 1 (6-7 year olds)	I	4,0	0.01
	II	6,3	0.03
	III	7,6	0.02
Grade 2 (7-8 year olds)	IV	5,7	0.01
	V	4,6	0.01
	VI	6,5	0.03



# GENDER DIFFERENCES RARELY EXIST IN FIRST AND SECOND GRADE

## Outcome of several studies

No significant difference in

- general knowledge
- expressive vocabulary
- phonological awareness
- recognition of letters and words
- decoding
- reading comprehension

Limited evidence to support the various stereotypes of the genders  
mathematic – communication

(Hyde,2005)





Girls outperform boys in self-regulation

Lack of consistency in results

Girls outperform boys in reading achievement from the age of five

(Clark and Burke, 2012)

## WHAT CAUSES GENDER DIFFERENCES IN LITERACY WITH INCREASING AGE?

- Different experiences  Not biological differences!
- Different activities  Different skills!
- Stereotypes  Self-fulfilling prophecy!
- Gender image  It is girly to read!



## QUESTIONS

- What are the differences between schools and between cohorts?
- How stable are the results between years for schools, and for year cohorts
- What might explain existing differences?



## SCHOOL DIFFERENCES MEASURED AS THE EXPLAINED VARIANCE (ETA SQUARED) IN EACH TEST

Grade	Test	Eta squared
Grade 1 (6–7 year olds)	I	0.10
	II	0.08
	III	0.07
Grade 2 (7–8 year olds)	IV	0.06
	V	0.10
	VI	0.06



## TWO QUESTIONS

- Correlation (Pearson's  $r$ ) between results in different tests taken in the **same schools** and in the **same year**
- Correlation (Pearson's  $r$ ) between results in different tests taken in the **same schools** and in the **same cohort**



### 1. Correlation (Pearson's $r$ ) between results in different tests taken in the same schools and in the same year

Test	I	II	III	IV	V	VI
I	1,00	0,43	0,52	0,03	-0,02	0,05
II		1,00	0,73	0,20	0,10	0,19
III			1,00	0,16	0,07	0,22
IV				1,00	0,66	0,61
V					1,00	0,59
VI						1,00

### 2. Correlation (Pearson's $r$ ) between results in different tests taken in the same schools and in the same cohort

Test	I	II	III	IV	V	VI
I	1,00	0,43	0,52	0,35	0,43	0,37
II		1,00	0,73	0,50	0,51	0,40
III			1,00	0,58	0,49	0,60
IV				1,00	0,66	0,61
V					1,00	0,59
VI						1,00





## QUESTIONS THAT ARISE

- What effects is a literacy education model as BL likely to have on the differences between schools that have adopted the model?
- What internal conditions are likely to contribute stable performance of individual schools?
- What internal conditions are likely to delay stable performance of individual schools?



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