

Are girls really better at reading than boys – or are the tests painting a false picture?

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Gender differences is a concern across the OECD, but is there a reason to be concerned? Credit: University of Stavanger

In reading tests at school, girls tend to be ahead of boys, in all age groups and in all countries. But in young adults, there is suddenly no longer any

difference between men's and women's reading skills. Why is that? Could the answer be in the way the tests are designed?

Girls are often said to be better at reading than boys. At least, that is what international reading studies like PIRLS and PISA show. The [differences](#) are clear in Norway, in the other Nordic countries, and right across the OECD. The gap is apparent amongst the 10 year olds measured in PIRLS, and it is even wider in the group of 15 year olds who take part in PISA.

The reading tests measure whether the pupils can extract information from the text, whether they can draw simple conclusions, interpret and compare information, and assess language, content and literary devices in the text. And regardless of which of these aspects is being measured, [girls](#) perform best.

The differences disappear in adults

But something happens when we measure the reading skills of adults. When the reading skills of 16–24 year olds are tested, the [gender differences](#) have suddenly become imperceptibly small – or have disappeared altogether. This has been shown in studies including the major PIAAC study, which tests adults' skills in literacy, numeracy and ICT.

And while being able to read well is an important factor in enabling participation in education, work and society, there are no major gender differences in the Nordic region in these areas – which we might expect, if girls leave school with better skills than boys in reading, which is a fundamental skill. Although more women than men gain higher secondary or tertiary qualification, women are not ahead of men with regard to employment rate, participation in society or income – it is actually the reverse. Norwegian men are more likely to hold managerial

positions than women, they are more involved in local politics, and Norwegian men earn more than Norwegian women, according to Statistics Norway.

Several hypotheses

Several hypotheses have already been put forward to explain why girls' reading skills appear to be better than boys' at school age. A difference in intelligence has been rejected, since girls obviously do not have higher IQ than boys. The same goes for the theory that the difference could have something to do with specific teaching methods, since reading is taught using a variety of methods. Some researchers claim that girls are subject to different requirements and expectations than boys, and that this could explain why girls appear to be better at reading. However, if this is the case, it cannot fully explain the differences. And we still do not have the answer to why this difference seems to disappear when the pupils leave secondary school and move into adult life.

Is the answer in the tests?

Literacy researchers Oddny Judith Solheim and Kjersti Lundetræ of the Norwegian Reading Centre, University of Stavanger have investigated whether the design of the tests themselves can provide at least a partial explanation as to why the differences that become more pronounced as children progress through school, then disappear in 16–24 year olds. The researchers studied the PIRLS (5th grade), PISA (10th grade) and PIAAC (adults) tests. They compared the tests in terms of the way they are designed, the way in which they measure reading, and the manner in which they are implemented.

All the tests apply the same definition of 'reading literacy': It is about being able to understand and use written text, and PISA and PIAAC also

assess the ability to reflect on and evaluate texts.

To obtain a sufficiently extensive picture, the researchers at the Norwegian Reading Centre have examined the results of schoolchildren and adults in all of the Nordic countries. These countries are very similar, and have a high level of equality. But with a few exceptions, the gender differences in tests that measure reading tend to be equally great in Denmark, Finland, Sweden and Norway. The differences are apparent by the 5th grade, are greatest among 15 year olds, but then become imperceptibly small or completely absent in 16–24 year olds.

"Based on earlier research, it appears that PIRLS and PISA – i.e. the tests used in schools – are designed in a way that may favour girls. PIAAC is designed differently. This could be one explanation as to why we are seeing gender differences in the results," says Solheim.

Continuous texts in the school tests

One of the characteristics of PISA and PIRLS is that these tests contain numerous 'continuous texts'. This means long texts, which may be descriptive, narrative, explanatory, etc. Previous research has shown that girls and women are generally better at reading such texts than boys and men. Boys and men are better at reading 'non-continuous texts', such as graphs, forms, advertisements, etc. A number of studies also show that the differences are greater in favour of girls when pupils have to read fictional texts, than when they read factual texts.

In PIRLS, i.e. the tests for 10 year olds, the vast majority of texts are continuous, and the distribution of fictional texts and factual texts is the same. In PISA, 60 per cent of the texts are continuous, and 15 per cent of the texts are fictional. However in PIAAC, there are equal numbers of continuous texts as non-continuous texts, and the participants only have to read factual texts.

"Since we know that it is an advantage for girls to read long, fictional texts, it could be giving them an advantage to provide them with this type of text in the reading tests, which could affect the results in terms of measuring pupils' skills," says Solheim.

Measuring reading through writing

Although there are no differences between young adult men and women when their reading skills are measured, several international studies show that girls and women are better at writing than boys and men. Some of the questions in PISA and PIRLS are multiple-choice, where pupils must select what they believe to be the correct answer. However, in recent years, more of the questions have been open-ended, requiring the pupils to provide a written answer. It is believed that this achieves a better picture of what the pupils have understood from the text, and how they reflect on it and assess it. Reading is then being measured through writing – which gives girls an advantage. In PISA, where the difference between girls and boys is greatest, 65 per cent of the exercises involve writing. In PIAAC, on the other hand, the participants do not need to write, and instead have to select words, sentences or extracts from the texts.

Several studies have shown that the gender differences are greater in written exercises than in multiple-choice questions, and that boys have a greater tendency to skip the written questions. For this reason, the two literacy researchers believe that we may say that in this aspect too, PISA and PIRLS are more girl-friendly than PIAAC.

Motivation

Motivation is an important element when we look at how reading skills are measured in these tests. Motivation to do one's best, to read the texts

thoroughly, and actually to take the trouble to answer difficult written exercises. Differences in motivation to do the tests could explain a great deal of why girls appear to read better than boys at school, but not when they reach adulthood.

For example, earlier research shows that it is more difficult to motivate boys to be interested in a text than girls. The gender of the protagonist, the subject of the text and attitudes to the text or general subject play more of a role for boys in how well they perform when they have to read than for girls. For this reason, the researchers at the Norwegian Reading Centre believe that the [test](#) designers should take into account boys' motivation to read the texts they are given in the tests.

We also know that girls are more likely to do what is expected of them than boys. Boys are more likely to ask whether there is a point to what they have been asked to do, such as a test. We see the biggest differences in the tests that are performed in the 10th grade. This is a period during which pupils are facing many other challenges from their school.

"Since we know that boys are more critical about doing things that have no direct significance for them, it is conceivable that they are more likely to avoid expending energy on a test that will not affect their qualifications. Motivation could also explain part of the reason why the differences are greater at lower secondary school than primary school, since it is well known that teenagers are more likely to question authority, such as the school, than younger children," says Solheim.

While the pupils performed the tests at [school](#), the adult participants in PIAAC were invited to do the test in their own home, supervised by a PIAAC representative. The participants in PIAAC were also rewarded for their contribution once they had completed the test.

The researchers suggest that when a person comes home to you and stays

with you while you answer questionnaires and sit tests, and is offered an incentive to participate, it is reasonable to assume that you might feel more obligated to do your best, than someone sitting in a classroom who will not receive any particular reward for doing the test as well as they can. Is it therefore conceivable that the boys and men who underwent PIAAC were more likely to show the full extent of their reading ability, than the boys who took part in PISA.

Reason to be concerned?

The difference in reading between girls and boys has been highlighted as an educational challenge in most OECD countries, including Norway. Lundetræ and Solheim believe that their findings must be taken into consideration in the design of tests aimed at measuring reading skills, and in the interpretation of the results of these reading studies.

"Reading is described as a skill, which we have the potential to achieve. We may question whether the various tests, in their current design, give boys and girls, and men and women, an equal basis for achieving their potential as readers. We now know that reading tests in schools are designed in a way that affects girls positively. We also have to question whether PIAAC reflects men's reading skills more accurately than PIRLS and PISA, or whether the adult tests may be giving the men an advantage. This means that the challenge now is to find out how we can create reading tests that accurately demonstrate the actual skills of all boys and girls, and men and [women](#), in terms of reading. That would give us a better basis for saying whether there really is reason to be concerned about [boys' reading skills](#)," says Solheim.

More information: Oddny Judith Solheim et al. Can test construction account for varying gender differences in international reading achievement tests of children, adolescents and young adults? – A study based on Nordic results in PIRLS, PISA and PIAAC, *Assessment in*

Education: Principles, Policy & Practice (2016). [DOI: 10.1080/0969594X.2016.1239612](https://doi.org/10.1080/0969594X.2016.1239612)

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