

Learning by torture or learning by play?

A comparison of satisfaction with school and mathematics from the perspective of international testing programs *

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Summary

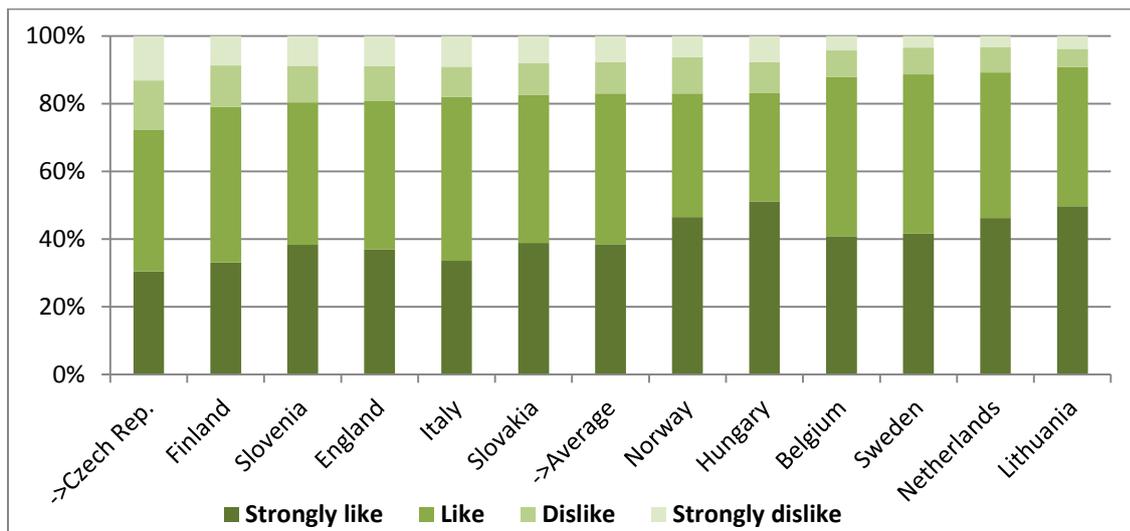
- This summary presents the key findings of a research paper (CERGE-EI Discussion Paper 2014-227), which contains detailed empirical analysis of satisfaction with school and enjoyment of learning mathematics among pupils of the 4th and 8th grades in European countries.
- In one of his seventeenth-century works on didactics, John Amos Comenius wrote: *You will teach in vain one who is uninterested, unless you first make him eager for learning. He must yearn for knowledge so much that he attends his classes with his senses kindled, and so that he lays aside other things and focuses only on learning.*¹ This observation remains very relevant even today.
- The international survey PISA 2012, which focused on 15-year-old students in OECD countries and many others, showed that almost 80% of students feel happy at school. Among the 64 participating countries, those with the highest proportion of contented students were Indonesia, Albania and Peru (96%, 94% and 94%). However, the countries with the lowest share of such students were South Korea, the Czech Republic and Slovakia (60%, 63% and 64%).
- In our comparison, we included all European countries that took part in the last cycle of TIMSS testing for 4th grade students in 2014, and which had participated in testing for 8th grade students in at least one of the previous TIMSS cycles.

* This short IDEA study summarises a detailed study by Federičová and Münich (2014). The research was carried out as part of a research project financed by the Czech Science Foundation, number P402/12/G130.

¹ Own translation of Comenius (1648/2004).

- In all countries, satisfaction with school and enjoyment of learning decreases as pupils move up through the grades, and boys display less enjoyment than girls. In higher grades, satisfaction is lower among pupils with lower school results, and among pupils with less educated parents.
- When compared with other countries, Czech pupils have an abnormally low level of satisfaction with school, and low enjoyment of learning mathematics. While 28% of Czech pupils in the 4th grade dislike or strongly dislike learning, in the other countries studied the average is only 17%. Furthermore this category does not exceed 20% in any other country other than Finland.
- Among Czech pupils in the 8th grade, the proportion of students that do not like school is significantly higher (44%) than observed in the 4th grade, while the average among other countries is only 26%. The share of 8th grade students who enjoy school is around 50 – 55% in the Czech Republic, Slovakia and Slovenia, in contrast to the nearly 80% of satisfied students in the Netherlands and Lithuania.²

Figure 1: Breakdown of pupil responses to the question: How much do you like school? (4th grade)

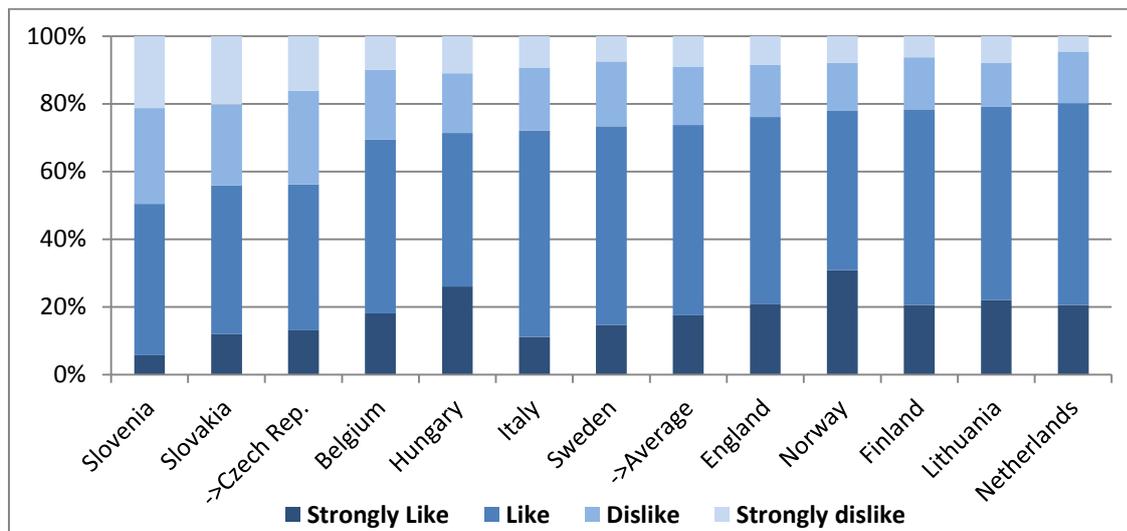


Note: The average shown is the average of all countries apart from the Czech Republic. Countries are presented according to their satisfaction quotient (responses "Strongly like" and "Like") from lowest to highest level of satisfaction.

Source: Own calculations based on TIMSS 2011.

² As for enjoyment of mathematics, the position of the Czech Republic is very similar, therefore in this summary it will not be reported in detail. For further detail on the enjoyment of mathematics, see Federičová and München (2014).

Figure 2: Breakdown of pupil responses to the question: How much do you like school? (8th grade)



Note: The average shown is the average of all countries apart from the Czech Republic. Countries are presented according to their satisfaction quotient (responses "Strongly like" and "Like") from lowest to highest level of satisfaction.

Source: Own calculations based on TIMSS 2003, 2007 and 2011.

- The very low level of satisfaction with school in the Czech Republic is caused to a great extent by negative attitudes among boys. Satisfaction with school is statistically much higher among girls (than boys) in both the 4th and 8th grades. When it comes to mathematics, in the 4th grade boys enjoy learning maths slightly more than girls, but by the 8th grade the opposite is true, although the difference is not large.
- While dislike of learning mathematics among Czech students in the 4th grade (responses "Dislike" and "Strongly dislike") is only slightly positively correlated with the results of mathematics tests, in the 8th grade we find a rather strong negative correlation. Dislike of learning maths deepens with poor results. As we move up the grades, the relationship between low mathematics results and dislike of the subject becomes stronger.
- Among 4th grade pupils, the Czech Republic has an abnormally high share of children with less educated parents who report enjoying school very much. This is however not the case among 8th grade pupils, where we observe the standard positive relationship between enjoyment of school and the parents' level of education.
- Quantifiable characteristics of teachers, such as their gender, age and years of experience, do not display any significant relationship with pupil satisfaction levels or enjoyment of learning mathematics. Satisfaction is however seen to be consistently higher in the smallest municipalities.

Reference

- Federičová, M. and Münich D. (2014). Srovnání oblíbenosti školy a matematiky pohledem mezinárodních šetření [A Comparison of Satisfaction with School and Mathematics from the Perspective of International Testing Programs]. *CERGE-EI Discussion Paper, 2014 - 227*.
- Comenius, J. A. (2004). *Analytická didaktika* [*The analytical didactic*] (H. Businská a R. Váňová, Trans.). Brno: Tvořivá škola. (Original work published 1648)