

Finlands education system in trouble

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“The old science of education is like an old-fashioned carriage: it squeaks but it can still serve a turn [...] [Modern educational science] looks like a precision-made machine, but the parts do not hold together and it has one defect: it does not work.” (Binet 1911, p. 232)

When we analysed the Finnish education system starting four years ago, we took the data from the PISA study 2006 and we predicted for the education system (a rare case in education) what will happen in the next years. Here are the excerpts.

Sarton2 p. 15, Footnote51

The general question to be asked here is what does one take as the “goal” of education (see also Wittenberg 1965): To make everybody an “ideal” logicist, or to lay the ground for a general method of thinking? Is logic a means or an end of education, i.e. is it a teleological (final) goal or only a local goal? Different philosophies have different answers to this question, but **Kaila’s “natural philosophy” has a clear (Machian) evolutionary emphasis on avoiding logic** as a general or total teleology.

Sarton2 p.16

Therefore, the solution to the question of the relation of physics to psychology was left ambiguous, with **different successors of Kaila pursuing their own interpretation depending on their research area, i.e. physics, philosophy, psychology, science education**, etc. What is happening in the end to Kaila’s monism? Kaila’s idea of monism centrally drove Kaila’s fruitful research (see von Wright 1995, p. 95). If monism was central to Kaila’s other ideas, why is Kaila’s Erkenntnis-theory taken so little into account? Both aspects of Kaila’s world view are barely noticeable in current Finnish research. According to an Erkenntnis-theoretical perspective, a Machian world view would be necessary for developing the currently successful ideas further as well as enhancing their understanding across the conceptual borders of specialization. For example, there currently seem to be **conflicting epistemologies even within the physics departments in Finland**: One that does include the Nevanlinna-Kaila synthesis and the one that implicitly does not. Both views draw different conclusions from the experiences in science education as they focus partly on different facts for their interpretation. The (unresolved) discussion between these epistemologies will also become apparent in different articles of this publication and **can still be regarded as a question which needs to be worked upon**.

Finland2 p. 30, Footnote 101

Laurikainen even wanted to found a chair on natural philosophy, a goal which was prevented by the strong opposition of an **alliance between physicists and the philosophers**. There are probably more late influences of the Nevanlinna and Kaila synthesis to be found in this society [of Natural Philosophy]. For instance, the dissertation of the current chairman Viljo K. Martikainen, on “Science in Technology”, also centrally follows the question of “Concepts and Mind”, a topic which has obvious relations to the question of the physikos and the mathematikos and the Mach - Nevanlinna - Kaila solution.

As a result, Kurki-Suonio though claiming never to have studied psychology, consistently **uses gestalt psychology in his epistemological framework**. In this point, Kurki-Suonio is again closer to Kaila and to Mach (see Appendix 1 and Kurki-Suonio 2010 or Lavonen et al. 2004 for more details). His initial idea is fundamentally monistic (though he describes it as

“unified dualism”. It is the erkenntnis-theoretical question, how the epistemology of physics (and mathematics) can be **consistently** applied to teaching physics (and science in general).

Finland2 p. 37/38

The main problem in this case is only the level to which these ideas, especially the erkenntnis-theoretical, have become intuitive in Finland. One has to ask the question very specifically to any discussion partner and **observe very precisely the educational methodology** used by the teachers. Otherwise, nothing special can be observed in Finnish science teaching. The Finns themselves are not consciously aware of this question. This even **leads to the danger that the Finnish science education is slowly eroding** its achievements as it is adapting to international standards (i.e. mediocre in the sense of PISA study). There is a growing tendency of specialization. Kaila’s monism is seemingly more and more lost with younger generation.

Now one has to see, **how this synthesis can be saved in Finland**

We do not wonder of the decline of PISA results 2012 for Finland (which we predicted as shown in the excerpts of our former papers). While the Finns left untouched the formal strategy to help the laggards (see Fig. 2), they lost the contact to Mach, to Kaila's Gestaltpsychology, to Laurikainen (and to Kurki-Suonio, who was assistant of Bohr, the student of Mach) and replaced it with international or USA euphonic terms (see Binet's citation at start) while forgetting their own culture. That is a dramatic change. So they will reach the USA low level target with impressive speed in the next years (see graph Fig. 1 from Economist). We think that with a rate of 3 % per year elder teachers left the schools and that produced the decline (and will further produce the decline, as a Finnish physicist teacher with the perceptual approach agreed). Young teachers are not educated in the way of Kaarle and Riitta Kurki-Suonio, the last Finnish contact to Mach and Kaila (which ended around 1999).

We think there is no one real successor of Kaarle and Riitta. That was cost optimization at the wrong place. We shake of the head when we remember we visited the Education Board some years ago. They were polite but had no interest to correct their education strategy. We tried to discuss with professors of philosophy and of physics to concentrate on the Mach - Ch. Bühler - Kaila - Rolf Nevanlinna specific Finnish education culture. Kaila in Finland was adored because of his philosophy, but they turned a blind eye to him as a Gestalt psychologist for Finnish culture regarding students. They had no time to listen and discuss with us, no time to answer our emails. We were on the Gestalt Psychology and Natural Philosophy conference two years ago. Why was no person of the Fins in Germany last year on the next conference as promised? Why did they lost interest? They did not want to be the losers for goals set by the elder generation of philosophers and physicists giving money for the - in our analysis - as wrong as euphonic tasks.

Under these circumstances it will be a hard task to reinstall the special Finnish education culture and to have the Snellman goal in mind: education has highest priority for Finnish citizens.

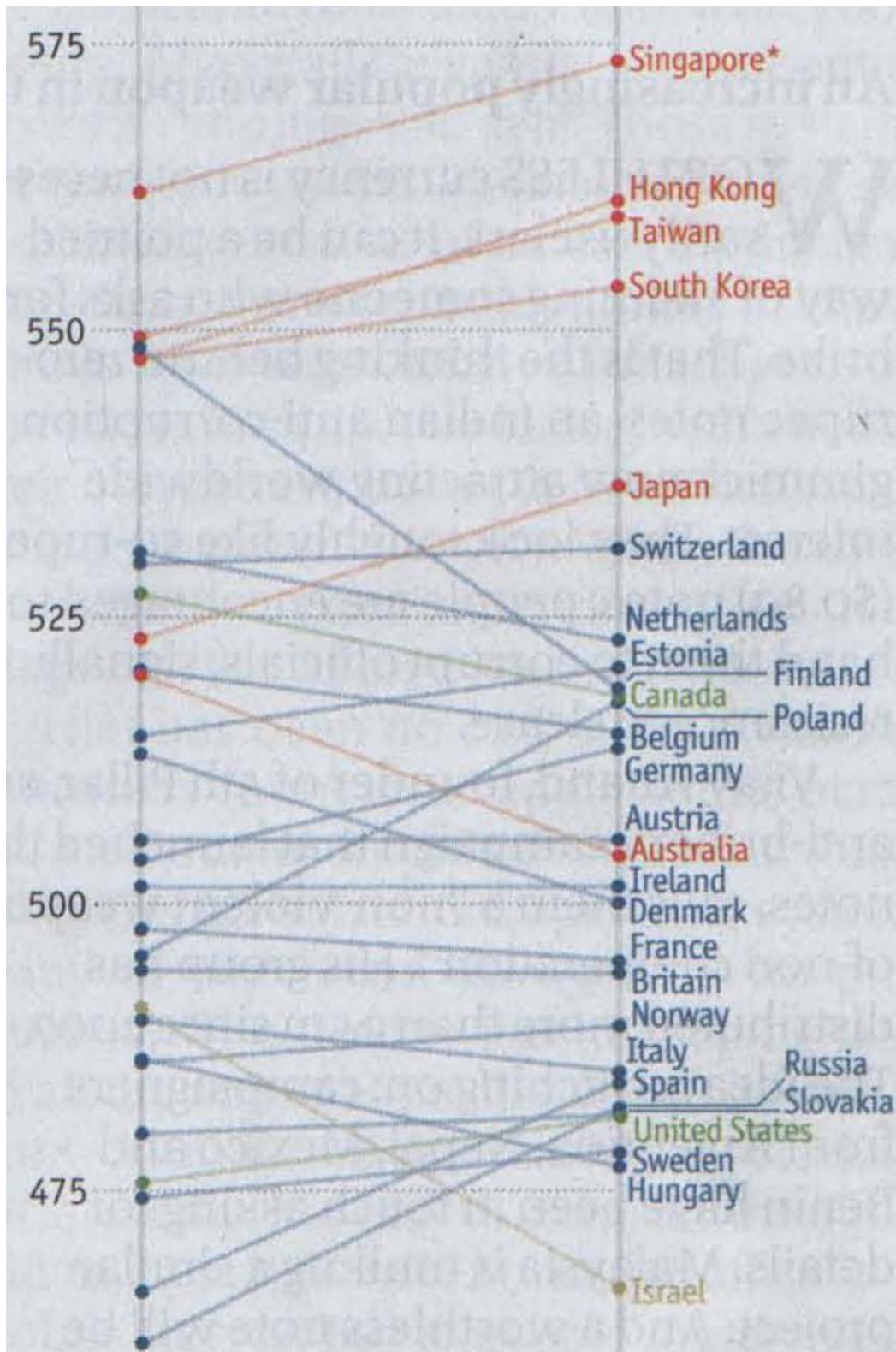


Fig. 1: The decline of Finland in Educational performance of 15-year-olds from 2006 to 2012 in math (from The Economist 7th Dec. 2013, p. 59, Finn-ished, extracted).

The Finnish decline is the biggest between all OECD countries (greatest slope, see Fig. 1).

Proficiency Level in Science in PISA

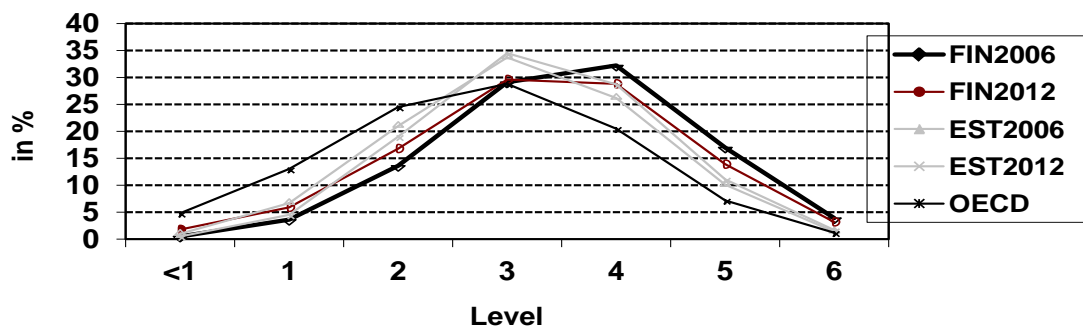


Fig. 2: Pisa scores of Finnish students from 2006 to 2012, 1 means low score, 6 high score. Same data as in Fig. 1, the accent is on scores.

As in 2006, the curve for 2012 shows the low number of laggards, but the curve is elevated within low levels and reduced in high levels. The slightly more than 10% difference area in worse directions between FIN2006 and FIN2012 show the more than 10% decline as in Fig. 1 listed by scores of Finnish students. Care in 2012 is directed on the laggards as in 2006, but the effect of care in 2012 is obviously reduced. So the formal parameter "care for the laggards" is not the essential, but something what is behind. This is the unique und specific Finnish educational culture from Mach, Ch. Bühler, Kaila, R. Nevanlinna, Laurikainen, Kaarle and Riitta Kurki-Suonio (including the influence of Niels Bohr). This was a gift for Finland, but it has to be carefully cultivated by doctorands and professors and brought accepted to a majority instead of being discriminated, forgotten by time or sweet but futile concepts of "reason".

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