EM9701: The Globe and Mail, January 3, 1997, page B7

Enrolment and test scores

Business often complains that education standards are slipping. Last month, this column suggested that what's really happening is not a decline in standards as much as an increase in the percentage of the population who are taking part in our education system.

If you look at the results of international tests of student ability, it often seems that Canada – with one of the highest education budgets in the world – is not doing well enough. It certainly seems we are not getting what all that money should buy.

But it turns out that, with few exceptions, the countries that score highest on international tests are the ones with the smallest proportion of students in classes, and the low scorers are the ones with the highest proportion in class.
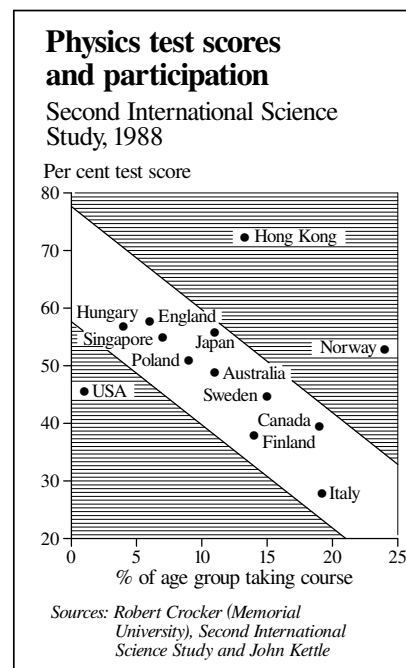
The chart at the right shows the results of a well-documented set of tests in physics, part of the Second International Science Study of 1988.

John Kettle is a consulting futurist based in Oshawa, Ont.

The results of all but three of the 13 countries in the study – the United States, Hong Kong and Norway – fall within a narrow band, where the results can be simply described. The lower the proportion of a country's 17-year-old population taking physics classes, the higher the average scores.

Hungary and England, which ranked second and third in the world-wide tests, had only about 5 per cent of their 17-year-olds in physics classes. In Canada and Italy, which ranked 11th and 13th, about 20 per cent were taking physics classes. Of the exceptions, Hong Kong and Norway did better than they should have, considering the number studying physics, and the United States did worse.

What does this tell us? A small intellectual elite will score higher on average than a large student body with a wider range of intellectual capacities. But what population of 17-year-olds would you rather be recruiting employees from – Hungary's or Canada's?

Physics test scores and participation

Second International Science Study, 1988

Per cent test score

% of age group taking course

Sources: Robert Crocker (Memorial University), Second International Science Study and John Kettle

The article EM9701 is used in Figure 13.1 of the STAT 221 Course Materials,
in Chapter 7 of the STAT 231 Course Materials and in Statistical Highlight #52; it is also cited at the end of Figure 16.1 of the STAT 231 Course Materials.

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