Time? — Or Time on Task?

Lengthening the amount of school time doesn't necessarily result in higher achievement.

By Thomas Schweitzer

While it seems intuitively obvious that devoting extra school time to academic studies will result in better achievement, this is not necessarily the case. The relationship between achievement and the amount of time devoted to the subject is not at all clear-cut.

I was able to find six comparative studies that had sufficient data to allow me to analyze the question. I began by comparing students' achievement with the length of their school year in days. (A statistically-significant relationship is designated with a + sign, while the absence of such a relationship is designated with a 0.)

Relationship Between Achievement and Length of School Year

SIAEP Math, international	**+**
SIAEP Math, interprovincial	**0**
SIAEP Science, international	**+**
SIAEP Science, interprovincial	**0**
TIMSS Math, international	**+**
TIMSS Science, international	**+**

This suggests that a longer school year improves achievement in math and science in international comparisons, but not in comparisons within Canada. This might have something to do with the fact that the provinces all have approximately the same number of school days, while other countries vary widely.

Then I realized that the length of the school day varies substantially from country to country as well. Perhaps the annual hours of total instruction would be a more relevant variable, I thought. Here I found:

Relationship Between Achievement and Hours of Instruction

SIAEP Math, international	**0**
SIAEP Math, interprovincial	**0**
SIAEP Science, international	**0**
SIAEP Science, interprovincial	**0**
TIMSS Math, international	**0**
TIMSS Science, international	**0**

So there is no relationship between total hours of instruction and achievement in math and science.

Next, it occurred to me that perhaps the total number of hours of instruction was not the relevant variable either. After all, math and science might be receiving proportionately fewer hours than other subjects. So I investigated the total annual number of hours spent on teaching math and science respectively. The result:

Relationship Between Achievement and Total Math & Science Hours of Instruction

SIAEP Math, international	**0**
SIAEP Math, interprovincial	**0**
SIAEP Science, international	**0**
SIAEP Science, interprovincial	**0**
TIMSS Math, international	**0**
TIMSS Science, international	**0**

This lack of a relationship puzzled me, until I recalled that in many countries the school day is short because hardly any seatwork is done during the "instruction" period; instead, a lot of homework is expected. So I added the hours spent on math (science) homework and studying the subject at home, and related the sum to achievement. I found:

Relationship Between Achievement and Math & Science Hours of Instruction Plus Homework

SIAEP Math, international	**+**
SIAEP Math, interprovincial	**0**
SIAEP Science, international	**0**
SIAEP Science, interprovincial	**0**
TIMSS Math, international	**+**
TIMSS Science, international	**0**

So the findings are not convincing one way or another.

Perhaps this should not come as a surprise. The number of school days per year is reported by the national/provincial educational authorities, the length of school days by the principals, the hours of math/science by the teachers and the hours of homework by the students. Are these reports equally reliable? I doubt it.

But what I regard as the most important factor is not reported at all. How much time was spent on direct instruction and on concentrated effort on homework?

A lot of instruction time may be wasted on disciplining a recalcitrant class or with the learning problems of individual students. Similarly, time spent on "homework" may be simply goofing off. This suspicion is strengthened by the following finding: the TIMSS studies also asked the teachers how much time it should take the students to do the homework they prescribed. The time on homework and study of the subject at home reported by the students surpassed that reported by the teachers by a factor of two to eleven (!), depending on the country.

Thus, it is small wonder that the results quoted above are inconclusive. Effective teaching and studying may be much more important than the raw number of days and hours spent on "instruction" and"homework."

(Dr. Schweitzer was formerly senior economist at the Economic Council of Canada.)

"We are opposed to lengthening the school year in order to spend more time doing the wrong things. The decision-making process on this issue should be as follows.
First, design and implement a clear, focused curriculum. Second, permit — indeed, encourage — the teachers to use effective instructional methods. Third, make efficient use of available school time (an absolute minimum of popcorn parties, assemblies, cartoons, etc.)
If standardized testing reveals that students are not mastering the new curriculum under these circumstances, then it will be time to look at lengthening the school year."
(From OQE's Media Position Paper)