



An airport cafeteria used as a late-night classroom by students swotting overnight. But contrary to conventional wisdom, it is not clear that putting in more study hours always translates to better academic performance. More need not always be better, because devoting too much time to out-of-school study may work against students as they grow tired and stressed, and find it hard to absorb the material effectively.  
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Ask NUS economists

# A lot of swot – good or not?

**Kelvin Seah  
Kah Cheng**

For The Straits Times

**Q** Do longer out-of-school study hours translate to better student performance?

**A** A recent report in the Singapore Business Review highlighted research showing that Singapore was the most overworked country in the Asia-Pacific region.

Employees in Singapore clocked up an average of 45 work hours a week.

Does the phenomenon of long “work” hours extend to the education system? I studied data from the Organisation for Economic Cooperation and Development’s 2015 Programme for International Student Assessment (Pisa), an international study across multiple countries around the world once every three years. It assesses the skills and knowledge of 15-year-old students in reading, mathematics and science.

The surveys with the 2015 Pisa study show the number of hours each student put into study during

and out of school. In particular, these students were asked three questions about study time:

**1** In a normal, full week at school, how many class periods are you required to attend in total?

**2** How many minutes, on average, are there in a class period?

**3** About how many hours per week do you spend learning in addition to your required school schedule in the following subjects: science, mathematics, language, foreign language, other subjects? Include the total hours for homework, additional instruction and private study.

From responses to questions 1 and 2, I computed the time each student spent per week studying in school, and from question 3 the time they spent a week studying out of school. Averaging out across all students in each country provided the average study time of students both in and out of school, by country.

On average, students in Singapore spent a total of 50 hours a week studying, with 28.6 hours devoted to classes in school and 22.2 hours to additional

out-of-school study.

Strikingly, the amount of time each student devoted to studying exceeded the 45 hours a week the recent survey found that each worker puts in.

In fact, out of the 58 countries with study time information in Pisa, Singapore ranks sixth in terms of per week study time. The others with the longest study hours are: United Arab Emirates (58 hours), China (57 hours), and three with 54 hours: Tunisia, Thailand and Qatar.

Those with the shortest study hours are Finland (36 hours), Germany (36 hours), Switzerland (39 hours), Sweden (39 hours) and Uruguay (40 hours). The out-of-school study time for students in Finland and Germany is about half of that for students in Singapore. On average, students in Finland and Germany spend only 12 and 11 hours, respectively, per week on out-of-school study.

**IS MORE BETTER?**

Because students in Singapore devote so much time to out-of-school study, it makes sense to ask whether this translates to better academic performance. I

investigated the relationship between mathematics academic performance and out-of-school study time for the sample of students from Singapore.

I found that while more time on out-of-school study is initially associated with better academic performance, the benefits seem to diminish the more that time is given to this. The relationship between academic performance and out-of-school study time is positive up until 35 hours of study per week – and then becomes negative.

For example, the average maths test score for students who did not devote any time to out-of-school study was 549.

For those who devoted 11 hours a week, the average test score was 5.6 percent higher, at 579.8.

However, scores fell to 572.7 for students who devoted 43 hours per week.

The non-linear relationship between academic performance and out-of-school study time holds even after controlling for background characteristics, including gender, secondary school level, immigration status, language used at home, parental education and socio-economic status.

What do these results mean? First, contrary to conventional wisdom, it’s not clear that putting in more study hours always translates to better academic performance.

The patterns are consistent with there being an optimal level of study time. More need not always be better, because devoting too much time to out-of-school study may become counterproductive as students grow tired and stressed, and find it hard to absorb the material effectively.

Of course, it is also possible that the associations between academic performance and out-of-school study time could be driven by “reverse causality”. In other words, extremely high out-of-study hours could be in conjunction with low student performance, simply because weaker students tend to devote more time to study in a bid to catch up.

While we cannot tell which of the two potential explanations is the reason, there does seem to be evidence suggesting that too much study time could result in lower student performance.

The moral of the story? Study hard, but do so in moderation.

• Kelvin Seah Kah Cheng is a senior lecturer in the Department of Economics, National University of Singapore (NUS).

• This is a monthly series by the NUS Department of Economics. Each month, a panel will address a topical issue. If you have a burning question on economics, write to [stpinion@sph.com.sg](mailto:stpinion@sph.com.sg) with “Ask NUS” in the subject field.

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