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How to learn better during the June holidays and beyond

To improve academically, students should focus on the 'how' of learning, and not just the 'what'

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Ever since I was in Primary 5, the June holidays had always seemed like a humorous misnomer. While it was a welcome respite from school, June always felt more like a "studying break" rather than a "holiday".

This year, the pressure for parents and students to make the best of the mid-year break is likely to be heightened, with June coming on the heels of a limited in-person schooling disruption that saw a rapid shift to full home-based learning.

But the pressure to make the June holidays productive has always been present, especially for students who fared poorly during the first half of the school year.

Some parents may want their children to revise intensively and engage in extensive "drill and practice". This is understandable and some of this may be necessary, but it is likely to be limited in overall effectiveness.

LIMITS OF "DRILL AND PRACTICE"

Why so? Consider a student who engages in repeated practice, trying his hand at as many questions as possible. There are two points to make about this approach.

First, some improvement will be observed, but is the student really learning? Is he understanding concepts better, or merely becoming more familiar with procedures?

Familiarity with procedures often provides students with an illusion of understanding that is shattered once they face non-routine questions during exams. "Drill and practice" cannot truly provide the deeper conceptual understanding students need to tackle these increasingly common questions.

Second, if a student is not performing well despite already putting in reasonable effort, getting him to study more may not be an effective solution.

Sub-optimal performance may be due to sub-optimal learning habits; getting students to go through more content material may not help if they still process it in the way they did previously. In such cases, the root cause of underperformance will not be tackled and will continue to surface.

To help students perform better, we need an approach that can help students attain deeper conceptual understanding, tackle sub-optimal learning habits, and learn more efficiently. In other words, we must go beyond the approach of learning more, and understand how to help students learn to learn better.

IDEA WHOSE TIME HAS COME

In his book How We Learn: Why Brains Learn Better Than Any Machine... For Now, cognitive neuroscientist Stanislas Dehaene writes that "learning to learn is arguably the most important factor for academic success".

In Singapore, "learning to learn" is an idea that is gaining ground. In March, the National Institute of Education launched its Science of Learning in Education Centre to develop effective learning methods and tools for students based on multidisciplinary research.

Separately, the National University of Singapore has brought the science of learning directly to students through a "Learning to Learn Better" elective module.

I had the privilege of being a teaching assistant for this module, and have experienced first-hand the power of these strategies. My only regret was not being able to learn them earlier in life.

But my juniors need not have this regret – they can learn to learn better from a much younger age.

How can they do so? I will suggest three strategies – based on insights from the science of learning and my experience – that parents can use to guide younger students to learn better, and older ones can employ directly.

Of course, an individual's personal learning situation should be evaluated first before deciding whether any particular strategy is suitable; teachers should be consulted if necessary.

THREE STRATEGIES

First, students should actively reflect on what they are actually doing when they work on practice questions. More specifically, they should conscientiously think about the reasons behind the steps they take when attempting holiday homework or practice questions.

Practice still matters when learning new concepts or preparing for examinations, but it should be done meaningfully, not mindlessly.

In Small Teaching: Everyday Lessons From The Science Of Learning, Dr James M. Lang writes that while repeated practice does lead to a minimum competency level, it "won't help us grow and improve unless we pause at least occasionally to reflect on what we are doing, why we are doing it, and whether alternative pathways might exist".

One question I like to ask to reflect on what I am learning or practising is: "What if I changed this aspect of the question/task?" Attempting to answer this question forces me to consider the concepts involved in more depth, and often surfaces gaps in understanding that I did not know existed.

Second, students should actively make connections between the different concepts they are learning about. For instance, when revising a particular chapter, they should try to articulate how different concepts within that chapter are linked to one another. Separately, when they are taught new content, they should actively reflect on how the new knowledge is related to what was taught previously.

From the science of learning perspective, making connections is key to the act of learning itself. But for a more practical perspective, consider how students often say, "Why didn't I think about it?", when they finally see the solution to a question; quite often, what they are saying is that they were not able to connect the dots between various ideas, connections that were key to unlocking the solution.

Thus, getting used to making connections would arguably help students do so more easily during exams, putting them in a better position to tackle tough questions.

Third, when planning their study schedule, students should space out their revision for each subject strategically over the holidays (and during term time).

In How We Learn, Dr Dehaene noted that "decades of psychological research show that if you have a fixed amount of time to learn something, spacing out the lessons is a much more effective strategy than grouping them". He saw how experiments have demonstrated that "you can multiply your memory by a factor of three when you review at regular intervals, rather than trying to learn everything at once".

Given how students here are already so squeezed for time, this strategy is definitely worth considering.

These three strategies are just a few that the science of learning has revealed; a quick Google search on "how to learn better" will yield more. In the longer term, in order for its benefits to reach all students, "learning to learn better" must be formally integrated into our national curriculum and pedagogy. School leaders, teachers and curriculum planners must all come on board.

To this end, the 2017 launch of the Singapore Teaching Practice (STP) continues to be a promising development. This is a portal for educators to share teaching practices; according to the Academy of Singapore Teachers website, the STP model "draws on Singapore educators' beliefs about how students learn and teachers teach".

As an aspiring teacher, I hope to see "learning to learn better" become a key thrust of our education system some day.

When they learn to learn better, students can build stronger academic foundations, do better for their examinations, and be more equipped for the life of unlearning and relearning that awaits them.

And who knows, with students learning more efficiently, more time could be freed up for them to rest and relax – more time for them to enjoy the June holidays they very much deserve.

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• We welcome contributions to the Sunday Views column. Write to us at stopinion@sph.com.sg