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WHAT SOCIETY NEEDS ARE PEOPLE WHO ARE PROFICIENT AND NOT JUST EXAM-SMART

Learn for competence, not grades

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The thinking that we can help anyone to learn dates back a long time. The words of John Locke come to mind: "That the difference to be found in the manners and abilities of men is owing more to their education than to anything else, we have reason to conclude, that great care is to be had of the forming children's minds, and giving them that seasoning early, which shall influence their lives always after."

For some students, studying maths seems relatively easy, and they seem to understand the content quickly. For others, it takes more effort and time. Other students may find it very easy to learn languages or science. To put it another way, the time it takes for a student to become proficient in a subject will vary.

> When proficiency becomes the focus, teaching and education move from measuring students' performance on examinations to maximising the learning for the individual student.

This time to learn is a proxy for aptitude. In a traditional class, what is fixed is what the students need to learn as well as time. In this fixed time, different students learn in different extents, and that is what gets measured by traditional examinations.

If we look at a population of students, this learning function is likely to be normally distributed. In a traditional class, if all students receive the same instruction, their performance will be correlated with this aptitude, and the performance will be normally distributed.

This is a very substantial, thought-provoking and indeed striking observation that gets at the heart of learning and education.

However, what society and the workplace are interested in is the competence of students, not just how well they learnt in a fixed amount of time. Ensuring that students are competent and proficient is a more important approach to education and learning than grading them on a curve.

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An individually directed learning approach can produce students who reach a desired competence level, either by personalising the instruction or changing the time required to learn.

The learning and practice of medicine provides an example. Obviously, what we as patients want are competent doctors. In the setting of learning medicine — and I would dare say of most occupations — the goal is competence, not ranking.

In a medical school like ours, the emphasis is not just on rating students, but on producing proficient practitioners of medicine. It matters little that they did better than their peers if they do not achieve the skill and competence to practise. The focus moves from grading performance relative to peers to learning to attain competence.

MASTERY LEARNING

Benjamin Bloom, a well-known professor of education, argued that when students are individually coached and tutored, they perform much better than those who attend a typical classroom and receive regular classroom instruction.

This implies that under the right settings, most students have the latent potential to perform at a very high level, including those who in a normal classroom setting would wind up in the lower part of the grade curve. This may be why students in Asia and Singapore go for individual tutoring.

Medical students learn best when they are part of the clinical environment and are therefore individually

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In a study by Prof Bloom, testing, assessments with feedback and examinations were used as tools for learning and not as tools for grading.
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mentored and tutored. To do that, we embed students in clinical care teams, that is, doctors and nurses who take care of patients. In this setting, the medical students are engaged in watching and learning both the science and art of medicine.

In addition to medical knowledge, they learn the culture of medicine and how to apply their knowledge to diagnose and manage patients. Having good bedside manners, knowing how to elicit a patient's history, understand their complaints, properly perform an examination or interpret tests — these are all essential to diagnosing, treating and managing the patient.

It is also essential for young doctors to learn communication skills, not just with patients and their families but with the whole medical team working on behalf of the patient.

The learning happens not in isolation, not from books and not just from the main physician or consultant on the team, but from other members, senior students, house officers, resident physicians, registrars, nurses and indeed the entire milieu.

This kind of learning is more than individual tutoring; it includes a living experience by being part of a team that is managing patients.

This kind of solution does not necessarily work with all kinds of learning. But different instructional solutions focusing on competence have been developed and used in many spheres.

Prof Bloom proposed a partial solution: Mastery learning. It means building an approach using questions, testing and feedback until students master the content of a particular subject. In other words, the focus is on helping students gain competence rather than on seeing how they are functioning relative to other students.

Prof Bloom and his group conducted a study comparing three groups: Regular classroom instruction, mastery learning, and tutoring. As expected, the students with individual tutoring performed best, but the mastery learning class also did much better than the group with only regular classroom instruction. Seventy per cent of the students in the mastery class performed at the same level as the top 20 per cent of the regular class.

> In labour-scarce Singapore, focusing on raising the great majority's competence level will count more than counting their exam results.

This is indeed a very remarkable performance. In this case, testing, assessments with feedback and examinations were used as tools for learning, not as tools for grading.

The big difference is that the objective was for the entire class, not just a subset, to learn for mastery. In other words, it is focused not on individual grading where some students get an A and others a C, but on having everyone reach competence.

In labour-scarce Singapore, focusing on raising the great majority's competence level will count more than counting their exam results.

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