Is IT It?
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There's currently a lot of talk about the use of Information Technology in teaching at the NUS with the assumption that IT is good. I'm a strong advocate of IT in teaching, but I believe we must realise that IT is no panacea, and that not all of its use is effective.

I started using Computer Algebra Systems in my classes in 1993; I put up my first course web page in 1994; and I set up a calculus lab in 1996. I'm also very interested in language learning, and I have been following the development of language learning software closely. I'm very excited about the way computers enable us to do things we couldn't do before. Yet people are using computers to do things there was no reason for them to do in the first place.

First of all, the focus must be on teaching, not IT. A lot of courseware looks incredibly flashy, and is obviously designed by expert graphic designers and programmers. But is there a clear pedagogical goal or are they just trying to show off. For example, most language learning software allows you to record your own voice, and look at a graphical representation of the waveform. What exactly is this supposed to teach you? If you are learning Chinese and need help with the tones, you need a program that can analyse the pitch. This is totally different from looking at the waveform and requires powerful specialised programs.

Thanks to the current fascination with the web, some people seem to think that the way to be world-class is to create a course web page. I believe that the web is a great way to make information available to the students, but does any actual learning take place on the web? It's very rare that I see a web site that I believe students would learn much from.

IT shouldn't become an excuse for poor teaching. With the current talk about putting our lectures on-line, I would be praised highly by the administration if I do so. But what if my lectures were not very good in the first place? Are our lecturers so good that they are worth recording?

A sure way of improving your course evaluations is to type out your lecture notes and give them to the students. Instead, I prefer to start the semester by saying that if they want something nice-looking to read, they should buy the textbook. In the past, the university seemed to agree with me, but now the attitude seems to be that I should put the notes on the web.
At the moment, it is possible for technologically savvy people to be rewarded for doing things that the administration supports, even though the pedagogical value might be questionable. Some non-IT inclined people are often afraid of disputing the value of IT in teaching for fear of being seen as ‘backward’. Some people who are involved with implementing IT realise that this is good for their career, and are reluctant to rock the boat by questioning what is being done. Another problem at NUS is that most IT projects originate from people high up or the Computer Centre, unlike at American universities where new IT projects are usually implemented by dedicated staff members who want to use it in their classes.

Another rarely mentioned issue is the way IT changes the content of what we teach. In mathematics, computers have had a dramatic impact. Some techniques that used to be crucial are now no longer as important, while several topics that previously were beyond our reach, have now become manageable thanks to computers. Our teaching should reflect this new reality. The increased use of computers in a wide range of fields means that people need more mathematics, presenting a golden opportunity for mathematicians. But we must be open-minded, and teach the mathematics people really need, not just topics that were important when we were students.

Despite the above reservations, there is at least one productive use of IT in teaching. Over the years, I've spent more and more time answering e-mail from my students. I've now started an electronic discussion forum for my class. My answers are now available to all my students, and it's easier for me to justify spending that much time answering questions. The discussion forum is an example of how IT is only useful if it reinforces already good teaching. If you just want to scare the students away so you can spend all your time on research, then there's no point in setting up a discussion forum. It will only be of use if students feel you are approachable and helpful.

The true potential of the forum will only be achieved when it becomes not just a way for me to communicate with the students, but a way for the students to communicate with each other. I personally believe that encouraging active learning is one of the main challenges facing us here at NUS. However, for active learning to flourish at the NUS, we need a totally different attitude among students, staff and administrators.