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Talking the Talk and Walking the Walk: Teaching History at NUS

Associate Professor Brian P. Farrell
Department of History

Sometimes talking the talk and walking the walk seem like two contradictory goals, particularly when it comes to teaching history. Ours is a content heavy subject. There is simply no substitute for reading. So how do we maintain rigour and standards on the one hand, yet inspire enthusiasm about the subject among an often large number of students on the other? My answer is not to compromise either one for the sake of the other. These *CDTL Briefs* in which we share views on teaching often wind up recycling very widely accepted maxims, and I am not going to forego that here. We all agree students learn best from each other. We all agree it is better to inspire curiosity than to spoon feed content. We all agree problem-based learning is more challenging than didactic teaching and so on. But I too rarely notice anyone paying due attention to an unavoidable reality: we are the teachers, they are the students. My approach to teaching starts from accepting this fact.

To work from that starting point, I try always to be guided by three notions. First, the line between teacher and student is fluid and permeable at all levels. Though this may be more obvious in a graduate seminar than a level-one tutorial, it is always there. When I want to learn more about something, I teach it. Second, my students want a teacher, not a group leader. They want a teacher who will challenge them, motivate them and not bore them especially. Above all, students want someone who can persuade them that this is a subject worth exploring, and then let them do so. But as teachers, we need to give students some ideas about how they might do so effectively. Finally, I try to bear in mind that not all my students will engage my course with the same level of ability and motivation no matter what I do. Over the years, I have found that students respond to a teacher who not only wants them to learn for themselves but is also willing to teach, not just grade assignments. In other words, the challenge is always to reconcile things that seem to want to move in different directions on the surface.

That apparent tug of war surfaces every time you meet students. No one is going to want to listen or discuss if they are not interested. But no one, even mildly motivated, is going to be interested unless there is some challenge that requires students to stretch themselves. So I try to resist the temptation to play to the gallery. Making sense of history is hard work but that is also the reward. Everything I say and do is an effort to persuade my students to accept that reality and seek that reward. Let me cite three examples to make this more concrete.

First, how often do we hear the question, “Am I on the right track?” Students quickly learn not to ask me that question, because my answer is always the same, “What right track? This is not a treasure hunt.” Instead, I ask students to present a credible, thoughtful, evidence-based interpretation and take their seats at the table of discussion. What is a credible interpretation and what is not? Well, that is what students are here to learn for themselves with my assistance. Second, I put my money where my mouth is. All good university history teachers problematise the topic of the day and discuss a variety of interpretations regarding any given topic. I always add my own opinion because I think my students deserve to know my views on the issues facing us. Students also need to know those views are never set in stone. We can all reconsider our interpretations as we learn more, read more widely, consider different issues and engage different theses. But students deserve to know that just because I respect the need to engage all interpretations does not mean I give them all equivalent value. Finally, I lay particular stress on evidence-based clarity in interpretation and explanation. I expect it in assignments and I try to provide it in seminar, tutorial and lecture. If you cannot be clear, you cannot engage.

All these seem rather far from any touchy feely rhetoric about providing student-centred learning. But that is exactly what it is. I see every module as a collection of different components, and I use each one in a different way. The idea is to provide a problem-based, question driven and participatory learning experience—one that sparks students’ interest and curiosity in the subject as a whole. It takes an entire module to do that. So, sometimes I take the lead and on other occasions I push students out in front. This rests on a crucial assumption: my students are independent adults who will make up their own minds about what they want, what they need, what they will do and how they will take advantage of their time here at NUS. But some will do this more effectively than others. So I set them all a challenge and get them started. Then I nudge them to join me up front and make them walk the walk by justifying that they need to stretch or gain nothing of value. I think the fun comes from knowing that students have stretched themselves, grew, overcame challenges and not just endured. My teaching philosophy is to groom my students to discover how wonderful it is to be able to join the endless discussion in their own right, because they did the hard work everyone must in order to do this. If I were to meet them ten years later, I do not really care whether they still remembered the content I discussed, but I would care very much that they can use their critical faculties to make sense of history for themselves and others. I am their teacher, not their uncle. ■

Teaching: Share Your Passion and Have Fun

Associate Professor Milagros Rivera
Head,
Communications and New Media Programme

Most excellent teachers seek to stretch their students' minds, encourage them to be critical thinkers and attempt to develop students' communication skills. The question is *how* we accomplish these.

In the annual feedback exercise, my students usually compliment my mastery of the subjects I teach, although they complain that I am too strict in the classroom—no texting, no phones ringing, no talking. However, the two most common observations throughout their feedback refer to how passionate I am about the courses I teach and how funny I am. I find the former observation accurate and the latter amusing because I do not consider myself all that funny. In fact, very few people in Singapore get my jokes!

I have been teaching for almost 14 years and have found that my passion for the subject only became obvious to my students, when I learnt to relax and truly have fun when I am teaching. I can get a class of 450 students excited about new media theory or policy at 8 a.m. Despite the unearthly hour, students will be there even when I webcast the lecture.

While subject mastery is important, what I have found is that 'connecting' with students makes all the difference in the world. So in this paper, I would like to share with you some things that have made a huge difference in my teaching. To be sure, these techniques have not only made a difference in my feedback scores, but more importantly, they have allowed me to truly enjoy my teaching experience.

In my view, the first day of the semester is the *only* time we have our students' absolute and undivided attention. So when I hold my first class, I always tell students a little bit about myself. I show them interesting pictures of my trips and tell them about my teaching experiences. During this brief introduction, I make an effort to present myself as a person and not a professor. I feel that it is intimidating enough for any first year student to sit in a lecture theatre with 450 other young people who are equally scared. So I think this is a good use of class time. When I finish, students know a bit more about me and feel more at ease. I know this because they always comment extensively about the first class in their feedback.

Second, I regularly 'talk' to students through email. These messages are seldom long, but they are conversational, informal and always informative. Such attempts at communicating with students help them feel connected to me, even if we have never spoken in person.

Third, I make eye contact with my students from the first day of class. Yes, even in a large lecture one can make eye contact with some students! I continue to nurture this relationship with my students throughout the semester and they become my feedback mechanism. I even notice it when some students miss class or switch seats. When that happens I make sure I let students know. They are usually a bit spooked, but generally pleased that I recognise them.

Fourth, no matter how large my class is, I make it interactive from the very first day of the semester by using a 'game' that requires students to not only talk to each other but move around the lecture theatre. The exercise lasts about five minutes during which the lecture theatre is in absolute chaos. However, students are so taken aback by this ice-breaker that they are really excited about the class when the exercise is over. After I calm them down, I discuss the exercise's pedagogical objective and officially begin the lecture. Students' demeanour is 100% different from then on—they never expected such an unorthodox start in a class this size—and they are hooked!

The catch of doing something fun and out of the box on the first day of class is that it builds students' expectations. So while I never repeat the chaos of the first day, I do have at least one interactive moment in each class. This interactive moment can be either formal (they write an answer to a question and then discuss it with their neighbours) or informal (they only have a discussion with their neighbours). Either way, this exercise only takes between four to seven minutes and when I go around the room asking students to share their answers, I am never disappointed.

My teaching style is not inconsistent with a disciplined classroom. On the contrary, I have absolute control of my class. By creating activities that encourage interaction and connection between students and lecturer, students cannot sit passively at the back of the room and become disengaged. Instead, students learn to express themselves better and pay full attention to the lectures. This frame of mind allows students to enjoy the learning experience even if the class starts at 8 a.m. ■

Taking Charge of Learning—Ownership, Learning and a Conducive Environment

Dr Robin Loon
Department of English Language and Literature

Teaching in Theatre Studies presents very specific challenges not open to other disciplines in the faculty: namely, there is a crucial practical aspect in some of the modules. In theatre studies, the teaching covers the three main learning domains: cognitive, psychomotor and affective. It has always been a challenge to map all three domains over one another to produce the theatre studies student who is able to assess, criticise and apply concepts (sometimes in physical terms).

Of course, theatre studies is not restricted to performance and showmanship. In my recent role as director of the 2007 graduation production, I have had to ask all my 24 students to perform in a professional capacity (either as cast or production crew) knowing full well that they are at best at the apprentice stage. The aim of the module, TS3103 "Play Production", as with many other theatre studies modules, is not merely to ground students in sound theatre theory, but also in the practice of theatre. More importantly, through the doing, and in this case, the doing in a controlled professional context, I hope to help students acquire life skills which include time management, task-specific research, people management and a sense of company—all important work ethics and skills that will serve students well after they graduate and enter the work force. For the cast, I chose to work with a group of ten actors in an ensemble style so that there will be minimum demarcation between principal and secondary players in the performance. This was useful in enforcing a sense of company—each and every member was responsible for the quality of the final performance. For the production crew, my co-instructor (the producer) gave students a choice of roles. They could decide whether they wish to be in design, marketing, publicity or other aspects of production work. We put students through the paces of organising production meetings, balancing budgets and many instances where they would be required to brainstorm ideas, solve problems and more importantly, deal with the public. We demand that students step out of their comfort zone and struggle with this new professional persona.

What I have found to be effective in motivating students to learn is to appeal to their sense of self-worth. By this, I mean appealing to students to push themselves to excel and better themselves instead of the teacher pushing them. Very often, I find myself offering rudimentary instructions but always giving students the option to approach me should they require help. I believe that one of the first steps in improving oneself is to know when to ask for help. Instead of getting students to follow my instructions, I ask them to plan their own strategy and approach to a particular project: whether it is creating a role on stage, drafting out a marketing proposal or doing a mock-up of a lighting plan. What is crucial is that students present the plan and be open to critique from their peers, the producer and me. This inculcates a great sense of collaboration where the self is no longer fore grounded; the project and the task becomes the centre. In this situation, students become less self-conscious and more task-oriented. They learn to take and make criticism less personally and are on their way towards becoming more professional. Students have to learn to negotiate across different personalities in order to persuade their peers that their ideas are sound and effective. This forces students to be concise, focused and goal-oriented. I have found that students tend to falter initially as they were unable to overcome their desire to be validated by their peers, thereby becoming too deferential to public opinion. With more practice and more meetings and presentations, students become more steadfast (i.e. not only eloquently defending their ideas but also graciously accepting criticism). All students take ownership of their own projects while also taking responsibility for the larger production at hand. Students become increasingly capable of handling micro and macro objectives, traversing between the two with great ease.

In this module, the producer and I stress PROCESS and not product. The final presentation (i.e. the show itself) constitutes only 20% of each student's final aggregate. This being a play-production module, any final written theory examination would not meet the pedagogical needs of such a module. We have made the continual assessment of this module 100% and also transparent to students. At the onset the students are told that they will be evaluated on other qualities including resourcefulness, creativity in approach, collaboration and cooperation, crisis-management and problem-solving skills. It is extremely important to make this clear to students so that they can approach this module with a different mindset from the other academic/theoretical modules.

Finally, what counts is the student. Student-centred learning—more learning less teaching—should always focus only on the development of students' critical and practice skills. Ethics, values and professionalism can only come about with trial and error, and risk-taking in an environment that is as real as possible yet providing a safety net to students. Ironically, students are most likely to take big risks when they feel safe enough to do so. I think as teachers, this is the kind of environment we should provide for students. We need to offer students the most conducive environment and support for them to learn. Watch them as they fly, catch them when they fall. ■

Can Computer-aided Instruction Effectively Replace Cadaver-based Learning in the Study of Human Anatomy?

Associate Professor Bay Boon Huat
Department of Anatomy

The mere mention of the word 'cadaver' elicits vivid images of medical students meticulously and painstakingly dissecting a preserved human body under the tutelage of anatomy lecturers in a laboratory setting. Cadaveric dissection, the paradigm of anatomy teaching since the Renaissance and at one time "an almost universal expectation of medical courses" (McLachlan & Patten, 2006, p. 244), is in the process of being replaced by other methodologies in the teaching of human anatomy. This is due to a significant reduction in the amount of time allocated for the anatomy curriculum. The move towards an integrated curriculum in many medical schools has led to a reduction in the time given for lectures and practical classes in basic medical sciences.

The Cadaver as a Teaching Tool

Cadaver-based learning includes the actual dissection of cadavers by medical students under the supervision of qualified instructors and the study of prosected specimens where individual structures in the human body have been dissected and displayed by skilled dissectors. The benefits of cadaveric dissection or prosection are that it helps students observe the three-dimensional relationships between different anatomical structures and comprehend anatomical variations, encourage peer- and group-learning, and inculcate in students a professional attitude right from the start of medical school (McLachlan & Patten, 2006). In fact, one entire issue of the scientific journal, *Clinical Anatomy*, was solely devoted to the role of anatomy education in furthering the development of medical professionalism.

My first dissection class in medical school has been deeply etched in my mind. And having taught anatomy for a number of years, I have found that handling different parts of the human cadaver in the laboratory is an unforgettable experience not only for medical students but also cherished by students in pharmacy, nursing and life sciences taking the "Human Anatomy" module. Every first year student at the Yong Loo Lin School of Medicine has to take a pledge during the first laboratory session at the dissection hall to treat the once living human body with dignity as he or she uses the cadaver to further his or her professional goals.

One of the primary concerns in cadaver-based learning is the difficulty associated with acquisition of enough cadavers for teaching (Bay & Ling, 2007). Except possibly for Thailand, most countries in the rest of Asia do not have a large body donor programme, with unclaimed bodies being the main source for anatomical dissection. On top of that, the use of cadavers in "Human Anatomy" requires close supervision of students and there is presently a worldwide shortage of qualified anatomists. Anatomy teachers have a high teaching commitment and given the current emphasis on research for faculty promotion and tenure, it is not surprising that many graduate students would rather not become anatomy teachers (McCluskey, Carmichael & Kirch, 2005). It is also a known fact that anatomy teachers have a far larger number of student contact hours than those in the other basic science disciplines.

Other disadvantages of studying anatomy using cadavers include (a) the emotional impact on students as some may feel overtly anxious about this experience while others may become desensitised and develop a detached attitude with regard to death, and (b) health and safety issues for those exposed to chemicals such as formalin used during the process of embalming and the possibility of being afflicted by infectious and transmissible diseases (McLachlan & Patten, 2006).

Computer-aided Instruction (CAI)

With the advent of web-based technology coupled with the rapid increase in the availability of educational software and information databases through the Internet, computer-aided instruction (CAI) is becoming an important component of the medical curriculum. (McNulty, Espritu, Halsey, & Mendez, 2006). However, some anatomists argue that no matter how sophisticated a software package may be, images are still projected on a two-dimensional screen, whereas in cadaver-based learning, students develop a dynamic three-dimensional mental image of the human anatomy (Rizzolo & Stewart, 2006). Detractors of CAI firmly believe that even if computer-simulated dissection in a virtual environment should become available in the future, it can never replace the precious experience that a student will have using a cadaver.

Conclusion

Even within the anatomist community, the traditionalists and modernists differ in their views as to whether cadaveric dissection is a necessity in the learning of gross anatomy. In a survey of 112 professional anatomists, Patel and Moxham (2005) found that practical lessons using cadaveric dissection or prosection ranked higher than living and radiological anatomy, e-learning, didactic lectures alone and the use of anatomical models. It is therefore highly unlikely that CAI can effectively replace the “intellectual, educational experience afforded to medical students by cadaver dissection and even prosection” (Paalman, 2000, p. 2).

However, many would agree that given limited human resources, CAI, if integrated into the anatomy curriculum as supplements, can certainly complement and enhance the quality of cadaver-based learning. Having gone through a cadaver-based learning programme as a medical student, I personally subscribe to this view point. In a study at the University of North Carolina, Granger *et al.*, (2006) showed that an interactive human anatomy web-based programme increased the quality and efficiency of instruction in the anatomy dissection laboratory. McNulty *et al.*, (2006) also reported that in an anatomy curriculum where dissection is still a core component, students who used CAI as a supplement fared significantly better in the anatomy examination than those who did not use computer resources.

Finally, although CAI resources are increasingly being incorporated into the medical curriculum, I certainly would not relish the thought that my attending surgeon has learnt his or her human anatomy entirely from a computer!

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A Perspective on Medical Education

Dr Loh Kwok Seng
Department of Otolaryngology

Traditionally the teaching of medicine has followed the principle of apprenticeship. Through a long and often arduous process, knowledge and skills are imparted to students by getting them to work under a more experienced doctor for a particular period of time. Once a student has reached a predetermined level, he begins his practice and continues to gain experience. In time, if the student so decides to teach, he takes on disciples and imparts to them skills and values based on his own learning experience.

The master and apprentice method of teaching and learning has served medical education well. There is, however, a realisation that teaching medical students is no longer a random process where we conduct lessons in the way we were taught years ago. Thus, there are questions whether the master and apprentice method is still relevant in the modern era where one can choose from a variety of teaching methodologies and tools.

I do not consider the master and apprentice method an erroneous philosophy in teaching. However, it is only one method, not the only method. The key to medical education lies in being flexible and most of all, being able to critically appraise the different ways in which information can be conveyed and absorbed. In the final analysis, the key to medical education lies in learning through experience and is hence, a lifelong process.

In medical education, gaining knowledge is but only one small component which is perhaps the easiest to achieve. For example, getting students to list 20 causes of hepatomegaly is no challenge to our undergraduates who have had extensive practice in the art of organised thinking from young. Helping students understand how to distinguish these 20 causes is slightly more complicated but still easily accomplished. However, what will stand out at the end of the day is a medical student who, when confronted with a patient, is able to distinguish the most likely cause of hepatomegaly from the 20 potential causes. This remains the greatest challenge in medical education. As long as this aim can be achieved, the teaching method used is really irrelevant.

For example, when teaching students about venepuncture, there is no better way for them to learn than getting students to perform the real procedure itself. The rate at which students learn increases exponentially when they get to perform the same procedure repeatedly on different patients. Yet the reality of healthcare services in the modern world has drastically reduced such opportunities for our students. As a result, vivid descriptions, digital media, videos and even simulation by mannequins, are used to improve the learning process. These tools have their strengths and merits in the teaching process; they help engage students in learning the accepted method of performing a venepuncture.

Every teacher has a different style of teaching. Some use didactic sessions very well because they have thought about the objectives they want to achieve and are able to present the information concisely. Others may be comfortable and experienced enough to conduct a teaching session in an interactive style with little or even no digital illustrations. Yet others may want to utilise simulators to bridge the gap of reduced clinical material available to students in the modern era. All these methods require the teacher to give careful thought to the learning objectives and prepare the lessons well.

In summary, I continue to advocate that every physician who engages in the education of medical students must firstly be prepared to learn how to teach. He must be able to appraise the various methods of teaching and not be swayed by what is 'fashionable' in the teaching community. If the teacher is familiar with methods which are useful in achieving the desired learning outcomes repeatedly, he must not shy away from these methods but keep improving on them even if others consider them archaic. As much as we are eager to embrace the new, we must not neglect the wisdom of the old. ■

Excuse Me, Are You an Excellent Teacher?

Associate Professor Tan Ern Ser
Department of Sociology

When I was asked to share my teaching philosophy and what I think are the qualities of an excellent teacher, my first concern was that I would end up saying things that are rather cliché and have probably been rehashed countless times by many others. Anyway, I will let the readers judge for themselves.

For instance, it should not surprise us that an excellent teacher would put in more than 100 percent commitment into designing, preparing and delivering a module even if he has been teaching it for the umpteenth time. Without doubt, an excellent teacher is one who gives top priority to teaching. By this, I mean that the time he spends on the entire process (i.e. preparation, delivery and student consultation) is never residual time but dedicated time.

An excellent teacher updates his module's contents proactively and keeps abreast with the latest trends and developments in his field while paying adequate attention to the fundamental concepts and ideas in the literature. Being an active researcher would certainly help keep his module's contents fresh, ideas exciting, assignments challenging and delivery passionate.

However, while constantly beefing up his materials, an excellent teacher should ensure that his module is pitched at the right level and kept manageable for students. This means neither dumbing the contents down nor overwhelming students with information. An excellent teacher should make sure that the module has sufficient breadth and depth.

An excellent teacher is neither a tech-fanatic nor a tech-dinosaur. He would use the latest technology to aid his delivery, but only if it facilitates or enhances learning. After all, it is the substance, not the form that matters.

He does not practise spoon-feeding, but provides enough leads to facilitate student learning and sufficient information to motivate students to go beyond what is covered in lectures and tutorials. While he encourages individual effort and some healthy competition, he also emphasises teamwork and collaboration.

He is pre-emptive in his approach to module administration, anticipating problems before they appear. This may involve ensuring sufficient copies of the textbook and course pack for sale to students or that e-journal articles, media resources and course materials are made accessible to students ahead of time.

An excellent teacher keeps track of what is happening on the ground. He is responsive to students' queries and questions, and is quick to reply emails and address students' concerns. He gathers feedback on a regular basis through various means, but mainly through an open-door policy and interactions with students. While he has a game-plan for reaching out to students, he is flexible enough to make necessary adjustments and modifications along the way. After all, a game-plan is only as good as its effectiveness in achieving its objectives.

An excellent teacher comes across as genuinely friendly, compassionate, understanding, caring and nurturing. He puts students at ease, affirms them and brings out the best in them.

He is real and does not put on a show. His students regard him as firm but fair, someone who provides honest, even if negative, feedback with the intention of building up, not tearing students down. He is therefore not just a nice guy without any strong convictions or someone who tries too hard to please by being politically correct.

The bottom line is this: an excellent teacher knows in the final evaluation (I am referring to his own self-evaluation) that teaching is neither about putting on a good show nor about winning a popularity contest. Rather, teaching is about developing in students an ability to think critically and creatively, and a passion for lifelong learning. Of course, an excellent teacher would also desire to see his students become good and active citizens with positive self-image, humility, solid morals and a genuine concern for the well-being of fellow human beings. ■

The Empirics of Teaching Quality

Associate Professor Willie Tan
Vice Dean (Academic),
School of Design and Environment

Introduction

In 2005, I was asked by a persuasive colleague at CDTL to do a 'simple' preliminary study on whether class size (n) affects teaching student feedback scores (F). Intuitively, the answer is yes. I have taught both large and small classes for many years, and know for sure there is a difference. But the issue was *how much* of a difference, which is an empirical rather than a logical question.

Naively, one could model the relation as:

$$F = \alpha + \beta n + \eta; \qquad \beta < 0 \qquad (1)$$

or more generally, $F = f(n) + \eta$ where $f(.)$ is a nonlinear function, α is the intercept and β is a parameter. Since only one independent variable is involved, the error term η will be too large, and the model becomes of little use. The model needs to be extended to include three vectors of characteristics that is:

$$y = f(\mathbf{e}, \mathbf{t}, \mathbf{s}) + \eta \qquad (2)$$

where y is student performance (not to be conflated with quality of student learning), **e** is a vector of environmental or structural variables (e.g. class size, type of model, level and field of study), **t** is a vector of teacher characteristics (e.g. age, gender and qualifications) that may possibly reflect teaching quality and **s** is a vector of student characteristics (i.e. academic ability and socio-economic factors). As before, $f(.)$ may be a nonlinear function to improve the fit and exploratory data analysis suggests that $f(.)$ is nonlinear.

In this paper, I shall elaborate on how this model measures teaching quality. However, I shall sidestep the discussion on complex technical issues so that non-technical readers may hopefully obtain an intuitive grasp of the problem.

Design

Technically, nothing in equation (2) compels us to adopt a particular research design. However, the large number of variables rules out an experiment designed to control a subset of variables. In other words, η will be large, and attempts to control variables by matching or otherwise still leaves a large noise.

Hence, a regression model with important modifications was adopted. First, the dependent variable, student performance, was replaced by student feedback scores (F) because there was no systematic data on student performance or the quality of student learning attributable to a teacher. A better way to find out whether there were any value-added inputs from a teacher is to employ a before-and-after measure using the standard scores of student performance. This proxy raises a number of important issues of which three are hotly debated partly because of unintended consequences:

- F may measure populism or 'personalism' rather than teaching performance because students tend not to or are unable to evaluate beyond teaching style. For instance, there are doubts that students can adequately assess the quality of teaching materials and assessment methods (e.g. quality of examination papers)
- teaching quality may shift (dilute) towards the 'median voter' to reduce the gap (i.e. welfare loss) between students' expectations and actual teaching quality. For example, if there are only two ice-cream sellers on the beach, both will set up near the centre to maximise profit. The same reasoning applies to political strategies. Left and right wing political parties tend to support 'middle way' policies to maximise votes. The choice is not between the state and market, but among what other political parties offer and
- "measurement by fiat" (Cicourel, 1964, p. 33) where even F (as measured by student feedback forms) is mismeasured, resulting in low correspondence between concept and measures.

Second, mismeasurement of the dependent variable is only part of the story. Equally serious is the absence of data on student characteristics (**s**) so that the model becomes:

$$F = g(\mathbf{e}, \mathbf{t}) + h(\mathbf{s}, \eta) \qquad (3)$$

where the unknown function $h(.)$ is the new noise term comprising random disturbances and a vector of student characteristics. Note that **s** and η are unobservable. In some studies, **e** is presumably 'held constant' by conducting intra-institution research to reduce the complexity in equation (3), but this approach is not persuasive at the university level because of large variations in environmental variables (e.g. class size).

Finally, teaching quality as measured by teacher characteristics (**t**) is likely to correlate with student characteristics (**s**) and the ordinary least squares estimator is inconsistent (biased) *even for large samples*. Better teachers tend to attract better students—this is what parents already know and why parents send their kids to good schools. At the university level, there is reason to believe that students look to seniors for information before opting for their modules.

Empirics

Based on equation (3) above and a sample of 1983 data points, I have found that three basic determinants of F are worth noting, namely:

- class size
- field of study and
- type of teaching activity.

This regression result confirms our intuitive judgment that class size matters (see also Ehrenberg; Brewer; Gamoran & Willms, 2001), *F* differs across faculties (i.e. disciplines), and the type of teaching activity (e.g. lecture or sectional teaching) has experiential effects.

Some variables not found to be important included:

- the type of module [whether a module is a General Education Module (GEM)]
- module level (1–6)
- teacher's gender and
- number of years of teaching.

The finding on the number of years is consistent with the research by Goldhaber and Brewer (1995), and Rivkin, Hanushek and Kain (2005) who said that certification and number of years of teaching do not matter beyond the initial years. Perhaps one is jaded by teaching the same thing year after year, and is no longer young and energetic or fails to bridge the generation gap. To be sure, this is just a tendency.

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The Centre for Development of Teaching and Learning (CDTL) engages in a wide range of activities to promote good teaching and learning at the National University of Singapore, including professional development, teaching and learning support, research on educational issues, and instructional design and development.

contributors

Brian P. Farrell
Milagros Rivera
Robin Loon
Bay Boon Huat
Loh Kwok Seng
Tan Ern Ser
Willie Tan

advisor

Daphne Pan

editor

Teo Siok Tuan

layout

Ma Lin Lin

Comments, suggestions and contributions should be addressed to:

The Editor, *CDTL Brief*
Centre for Development of Teaching and Learning
Central Library Annexe, Level 6
National University of Singapore
10 Kent Ridge Crescent
Singapore 119260

Tel: (65) 6516-3052
Fax: (65) 6777-0342
Email: cdtpost@nus.edu.sg
http://www.cdtl.nus.edu.sg

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