Medical Education: Ways & Means (Part 2)

By Professor Chee Yam Cheng

In Part 1, Prof Chee discussed medical education and practice from Osler's perspective, expectations of the physician, clinical reasoning, and creative thinking (EQ and IQ). He continues in Part 2:

PBL

The "hybrid" curriculum of PBL sessions in addition to lectures has been tried elsewhere. In a recent paper[6], the tutors of such a curriculum found six problems among the students. These were (1) "mini lecturing" - researching only one learning issue, preparing a summary sheet and delivering a didactic presentation usually resulting in limited group discussion (ii) "family feuds" - dysfunctional group dynamics involving "passive members," "dominant personalities," "strongly independent learners", "coasters" and "non-attendees". (iii) "Speedy Gonzales" - rushing through PBL cases with the objective of reaching the "right answer" quickly or finishing early", (iv) "just scratching the surface" - performing superficial research on one small segment of the case; (v) "feed me" - building frustration with tutors who are not content experts and (vi) "doubting Thomases" - not "buying into" the process of PBL, or expressing a preference for didactic lectures by stating that PBL demanded "too much time" and "too much work."

If many of our medical students lack the problem-solving and interpersonal skills needed to participate in tutored and PBL sessions, it would be no surprise. However PBL provides an experiential learning environment, in which communication skills and learning can take place. In a recent speech to new fellows of the Academy of Medicine, I emphasized the need for them to develop their emotional intelligence or EQ[7]. So with PBL, it would mean a head start on EQ development and use of the right brain.

Technical training is easy compared to developing emotional intelligence. Our entire system of education, till recently, is geared to cognitive skills. Purely cognitive abilities are based in the neocortex, the "thinking brain". But with personal and social competencies, additional brain areas come into play, mainly with circuitry that runs from the emotional centres - particularly the amygdala - deep in the centre of the brain up to the prefrontal lobes, the brain's executive centre. Learning emotional competence the PBL way retunes this circuitry.

For intellectual skills, the classroom is an appropriate setting and simply reading about or hearing a concept once can be enough for someone to master it. Strategic thinking and computer programming can be effectively taught in this mode. For behavior change, life itself is the true arena of learning. Learning to approach people positively instead of avoiding them, to listen better, or to give feedback skillfully - is a more challenging task than simply adding new facts to old. Emotional learning demands a more profound change at the neurological level : both weakening the existing habit and replacing it with a better one.

PBL CASE-WRITING

Should PBL as a means of teaching medical students locally prove beneficial, there is yet another step forward with PBL. It is PBL case-writing[8]. A new elective course titled "Experience in PBL Case-writing" was created for American third and fourth year medical students with the first cohort of students at the Indiana University School of Medicine enrolling in September 2000. In this elective, students work in groups of two or three to write instruction-quality PBL cases. Cases are objective drivers and are based on cases of real patients. The course had three objectives. (1) To provide students with an opportunity to acquire, use and refine communication skills that should prove helpful in their careers. (2) To facilitate students' acquisition of those skills and attitudes related to lifelong learning and (3) to provide students an opportunity to research in depth one particular area of medicine from the molecular area of medicine to the whole individual, and where appropriate, the demographic and socio-economic impact of the disease in question.

So by all means attempt PBL locally. The authors[3] note the need for considerable logistics. I note the need for tutors versed in PBL and the need for proper teaching material. I also note the lack of evidence that PBL does improve knowledge base and clinical performance[9,10] over existing teaching methods.

RESIDENCY TRAINING

Should residency training be competency-based? Professor Donlin Long, from the John Hopkins University School of Medicine, who has been an HMDP visitor many a time to the National Neuroscience Institute Singapore thinks so and he advances his proposals in his paper titled "Competency-based Residency Training : The Next Advance in Graduate Medical Education."[11] To better ensure that new physicians have the competencies they need, he proposes the replacement of the current approach which specifies a fixed number of years in training, with competency-based training, in which each resident remains in training until he or she has been shown to have the required knowledge and skills and can apply them independently.

It is true that locally we have adopted a time-based approach to ensure that experience is gained as a doctor matures, with competency measured by the certifying opinion of the doctor's training director or supervisor. However that is changing as STCs (Specialty Training Committees) opt to modify the current 3 + 3 years of Basic & Advanced Training to 2 + 4 or 4 + 2 years or longer or shorter duration. The difficulty remains that no system of examination or training presently guarantees a competent, ethical practitioner.

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Professor Long refers to Rasmussen's education theory as one appropriate to the medical paradigm because it attempts to explain situations where rapid decisions have to be made, often without all the definitive information desirable. Rasmussen's theory has three steps. The first is the acquisition of skills and these can be learned before the full theoretical knowledge required for their practical application is known. The second phase of educational experience is that the student follows rules that constitute appropriate responses to most situations most of the time. More and more rules are learnt. According to Rasmussen, most individuals never proceed beyond the use of rules. In the third phase - that of "knowledge-based practice" in which the required solution is derived from broad experience and is not directly related exclusively to specific information that is available in the current situation, all master clinicians have achieved this final phase.

The logical extension of competency-based practice, is outcome assessment as a basis for certification and re-certification.

CONTINUING EDUCATION

There is little doubt that doctors need continuing education to remain viable in their vocation. The practice of medicine has changed dramatically in the past decade and will continue to change faster and even more dramatically in coming years. Many forces on the medical scene demand a new way to envisage health-care. These include rapid advances in bio-medical knowledge and its application to the practice of medicine; the changing expectations of physicians as effective communicators and team members; enhanced awareness of the role of physicians in disease prevention; incorporation of evidence-based medicine, accountability, and financial incentives into daily medical practice; changing work environment as more care moves to ambulatory settings; and the use of CME (continuing medical education) as evidence of competence for medical practice when granting medical re-licensure, hospital privileges, specialty re-certification, professional society membership and recognition for selected other professional activities.

The Association of American Medical Colleges in a recent paper presented their New Vision of the Professional Development of Physicians.12 How do adults learn? It is back to problem-based and practice-based learning. They stress the need for change because the purpose of learning is behavior change in the doctor and his patient. We now have a plethora of clinical practice guidelines but a gap exists between what we know and what we implement. Physicians build and refine their understanding of ways to care for patients. They take on new responsibilities that demand new learning and they direct their own learning. Optimal CME is highly self-directed, with content, learning methods and learning resources selected specifically for the purpose of improving the knowledge, skills, and attitudes that physicians require in their daily professional lives that lead to improved patient outcomes.

The Association has listed out seven action steps and also defined six core competencies for CME educators and the Association has committed itself to the leadership role to create the best learning systems for the professional development of physicians.

Perhaps we can learn something from them. ■

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