

Transformation of medical education over the years – A personal view

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I. INTRODUCTION

Over the years, medical education has invariably changed. When faculty meet to discuss the performance and attitude of young doctors, the question of what had happened to medical education often arise, intuitively pointing fingers to changes in medical education as the root cause of the problem.

Three significant changes were evident. The first was transformation of the traditional curriculum where there was clear demarcation between preclinical and clinical years to a revised curriculum with integration of the basic sciences and clinical training. The second was the shift from the teacher centric didactic teaching style to a student centric framework, incorporating a wide array of instructional and assessment methods. The other important transformation was the emergence of Innovation Technology (IT) in medical education and the healthcare environment. This article represented personal reflections on the transformation in Medical Education over the past 4-5 decades, through the lens of a clinician, how in my personal opinion, these changes may have affected the educational outcome.

II. UNDERGRADUATE TRAINING

In the traditional curriculum, in preclinical years, medical students who had to learn basic sciences such as anatomy and embryology, would be left struggling to find the relevance of the teaching to subsequent medical practice. In adult learning theory, understanding the relevance of the subject played an important role in retention of knowledge (Knowles, 1984). Thus the change to an integrated curriculum incorporating science

and clinical should be was a move in right direction. In the 70s' if there was a curriculum, it was very opaque to the students and the clinical teachers. Since, there was no "declared curriculum", clinical teachers and students focused on teaching/acquiring medical knowledge in the "real world", the clinical environment. Resources were limited, students were dependent on the recommended standard and reference textbook. The clinical teachers were an invaluable resource for knowledge and skills. Tutorials were infrequent and usually held in large groups. Small clinical group were assigned to one tutor for the whole posting. This was really valuable as the tutor knew the group's strengths and weakness and worked along students to improve the gaps. Tutors had high expectation that the students must know the patients in the ward. Everything seen in ward was deemed to be of learning value. There was no structured teaching on how to gather history or communicate with patients; no practice course on clinical skills. While in clinical posting, students observed the house officer at work. From the house staff, students learn how to clerk a patient, order the investigations and to carry out the immediate management. Learners very much depended on serendipity, observations and reflection to enhance their learning experience. Learning was opportunistic and depending on enthusiasm of the students and staff in the wards. This resulted in autonomous learning. This informal learning was critical to enhance the tacit knowledge. As the students spent majority of the time immersed in the real clinical environment, students observed, and had time to reflect on the experience. Experiential learning and reflection are important in deep learning and better understanding, retention of knowledge and critical to professional practice (Kolb, 1984; Mann, Gordon, & MacLeod, 2009). Experiential

learning in a rich clinical environment with the high index of unpredictability might have also resulted in the better resilience of the students in unpredictable real life situations in the healthcare environment.

Over the last 3 decades, there was a shift to more structured curriculum with emphasis on a transparent curriculum. This was the era where many learning theories were conceptualised and thus curriculum development to facilitate learning. Teaching methods evolved from didactic to more interactive, blended teaching and encompassed both team based and problem based learning strategies. I was curious while problem based learning and team based learning facilitate group of students to learn together and leverage on each other's strengths, there is little activity to promote interprofessional learning.

Assessments were diversified from pivotal on knowledge and clinical skills to include wider competence such as communication and professionalism. Assessments were mapped to the transparent curriculum. Unfortunately, from students' perspective, the education outcome was primarily focused on passing the examination. Assessment drives behaviour. Thus the learning styles of the medical students focus on what was helpful to pass the OSCE examination, to ensure the checklist was ticked to optimize the scores. Students now differential the experience in ward to learning and non-learning value. The richness and authenticity of the clinical environment was "adulterated". While the move to include more core competencies was laudable, creating a divide between learning value and non-learning value had reduced the exposure of the students to the "unpredictability" in the clinical environment. Would this "education environment" be preparing the new graduates well for their role in postgraduate years 1?

III. POSTGRADUATE TRAINING

Whilst the transformation was happening to the undergraduate education, there was a quiet front in postgraduate education for period of time, with only minor changes observed. It was only in the recent 10 years that postgraduate training underwent rapid changes.

School of Post Graduate Medical Studies was established in 1970. Back then, specialist training did not begin with medical graduation. Doctors were tested in the real world clinical environment before they embark on pursuing a career in specialist training. There was the local Master Examination which was helmed by Joint Commission of Specialist Training (JCST). Initially, there was no structured curriculum. Training was time based. After an individual completed a stipulated months of clinical

attachment with apprenticeship style learning and passed the required clinical examination, you could practise as a specialist. It was not until 1990s that an advanced training program was formalised. The 3 years advanced Paediatrics training was started in 1991. Over the years, a formal curriculum and other requirements besides medical knowledge and clinical skills were slowly introduced. Paediatrics moved from Basic Specialist Training and Advanced Specialist to seamless training in 2008. During this period the training committee had seen a need to move from time based to competency based training. The medical community had observed that time based training, in face of the new environment and new generation of learners might not be optimal to train the future specialists. Some clearly needing more time in training. Hence, the move to competency based outcome.

In 2010, Ministry of Health made a decision that specialist training to be aligned with Accreditation Council Graduate Medical Education International (ACGME-I) standards. That was the beginning of a concerted effort to adapt the 6 ACGME competencies as the desired outcomes for specialist training. Besides clinical skills and medical knowledge, communication and interpersonal skills, professionalism, practice-based learning and improvement, and system-based practice were introduced to the curriculum. These changes may be challenging but recognised as were important aspects of holistic education of a healthcare professional whom life- long learning and improvement is critical to quality medical practice.

The other change was the shift from faculty centric to learner centric. In particular, the emphasis on feedback by residents on the teachers and the program performance, had resulted in concerns among the clinical educators who queried the usefulness and accuracy of these feedback and the concern that faculty/program would be doing what's favourable in the learner's perspectives instead of focusing on the right thing to do for the residents.

IV. MOVING FORWARD

In an era where change is a predictable constant, and with the healthcare environment getting increasing complex and rapidly changing, transformation in medical education is inevitable. The healthcare standards and the health of the nation hinged on the outcome of medical education. For past decades, demographic and disease pattern had changed. IT had made the learning/teaching different and the ability to memorised huge chunks of data, no longer essential. With emerging epidemic of chronic disease related to lifestyle, the focus of training should shift to meet the needs of future generation with anticipatory and community rather than hospital care.

Healthcare providers must be cognizant and be able to use IT freely. Diagnostic tests revolutionised the high dependency on clinical skills in physical examination in the past. Thus, changes in the curriculum and teaching methodology to train future ready healthcare providers is necessary. Methods of assessment must be in tandem to nurture the right behaviours.

Note on Contributor

Dr Chay graduated from University of Singapore in 1976. She been practising in field of Paediatric Medicine since 1979. She also has leadership roles in Medical Administration and Education.

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Declaration of Interest

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