Learning the pre-clinical sciences in the pre-internet era

by Dr P Ravi Shankar

The nineteen eighties was a decade with nascent promise. India had a young Prime Minister in Mr. Rajiv Gandhi, the forthcoming telecommunication revolution was being widely discussed and a bright new future was being promised to the teeming millions. Thrissur or 'Thirushivaperur' (the town named after Lord Shiva) was a small town in central Kerala with a rich and vibrant culture. Thrissur was widely known as the cultural capital of God's own country, Kerala. In the eighties, the government medical college was a new institution having been established in the early nineteen eighties.

The old TB sanatorium had been converted to the new medical school. Mulangunathukavu where the school is located is a tongue twister for non-Keralaites. The school curriculum in the nineteen eighties was very much in the traditional mould. The first eighteen months were devoted to the study of the preclinical sciences of anatomy, physiology and biochemistry. Looking back I am surprised at the extent to which Anatomy dominated the proceedings. Four or five afternoons a week were devoted to anatomy dissection. We had Histology lab once a week and Osteology lessons every fortnight.

We had our first dissection the day after we joined the school. Students of the new intake had banded together to cope with 'ragging' by our seniors. As a new medical school ragging was less severe than in more established institutions. The dissection hall was a vast room divided into sections by wall cupboards. It was once a ward in the sanatorium which had been modified for educational purposes. The October afternoon was warm and we were distributed into groups around cadavers. For many of us this was our first introduction to a dead body. The task allotted to us was dissecting the palm. A strong smell of formalin was in the air. The heat, the smell and our apprehensions made for a dangerous combination. Some of the girls in our batch fainted. We boys were trying to put on a bold face while struggling manfully to stay on our feer.

Looking back with the benefit of hindsight I feel the palm is a difficult body structure for a beginner. The human hand is a wonderful structure but highly specialized and difficult to understand. The various movements of the fingers and especially, the thumb are complex. The palm had so many muscles that just remembering their names was difficult. In the pre-internet era there were no videos which demonstrated these movements in a simple manner.

Our classrooms had a traditional lecture theater seating and the blackboard was the main teaching aid. We had an overhead projector but faculty only rarely used the device. The anatomy teachers constructed beautiful diagrams on the blackboard. Drawing diagrams is a good method of instruction. The outline of the organ is filled in first and then the details are constructed right in front of your eyes. Today the learning portal, Khan Academy (www.khanacademy.org) uses an electronic blackboard for its video lectures and the presenters construct simple diagrams on the blackboard to explain complex topics. Our physiology teachers also used the board to illustrate different tracts, controlling mechanisms and organ structures.

I had mixed feelings about the Physiology practical especially the animal physiology section. I have always been against sacrificing animals unless we are able to obtain new knowledge from the

exercise. The simple muscle twitches, after load and preload exercises did not in my opinion generate new knowledge and I was sad at the loss of animal life. Today computer simulation software serves as an effective and humane alternative. The kymographs were covered with smoked black paper and after obtaining various traces on the shiny black surface the next challenge was varnishing the paper to preserve the tracings. The process left black smudges on the fingers and in the mess. Our seniors in the clinical years knew which exercise we had just completed. Human physiology was better but pricking their own fingers to obtain blood was a difficult and painful experience for many. Preparing a proper blood smear on a glass slide, staining it and then observing it under a microscope was an important exercise. I was quite bad at these exercises and struggled and muddled through most of them.

Biochemistry practical were interesting. We heated various solutions on gas burners and ended up having solutions of different attractive colors. During the session on urine examination we had to visit the restrooms to produce our own samples. Some of the metabolic processes and biochemical cycles were difficult to grasp. Someone rightly said that if you have to consciously carry out the various processes involved in obtaining energy from a food item, we would starve. Our body does a wonderful job of doing all this subconsciously.

We devoted so much effort and time learning the minutiae of the anatomy of the human body. We struggled with the difficult English of western textbooks. Certain concepts were very difficult to grasp. I was reminded of a sentence I had read in school attributed to the famous author and playwright, George Bernard Shaw who mentioned that school textbooks are often written by people who do not know how to write. A simple and lucidly written anatomy textbook was Clinical Anatomy by Richard S Snell. I enjoyed reading the simple description of the human body. I am a bit sad that so much of the anatomy I learned during my med school has had little practical use during my medical career. As a medical educator I am now of the opinion that an undergraduate medical student should have a broad idea of human structure and function. The details can be learned when there is a pressing practical application. Most anatomy faculty I have interacted with during my career of course, strongly disagree!

We had no mobile phones or tablets and of course, no internet. The only phones were landlines and in the hostel we had only one in the office room. The old black phone with their rotary dials was bulky and heavy. I always felt they would make a good weapon in a trained hand. We spend a lot of time reading our textbooks. In the initial year I had difficulty keeping up with the pace of the lecturers. They went through various topics so fast. Like today, girls were much more industrious than boys and usually had comprehensive notes on most topics. The option for a boy was to create a friendship with a girl to obtain a copy of her notes.

We had no discussion of the humanities, the patient-doctor relationship and other issues. During the first eighteen months we did not visit the hospital. The student association organized a film show once a month which introduced us to the work of great directors. Every year we had a college week which provided students with an opportunity to showcase their talents. I first discovered my writing abilities during a college week competition.

I feel in the pre-internet era we had many disadvantages. But we appreciated our teachers and human relationships. Talking or chatting to someone meant dropping into his or her room and talking face to face. Talking to girls went by the beautiful euphemism of 'sugar beating'. Men are supposed to ooze sugar and other sweet things while interacting with women. We had time to be with ourselves and with our companions. We were able to take time out from our busy academic schedule for other pursuits and listen to the voice of our soul. With constant connectivity (24 x 7) I believe unless we are very careful, the faint whisperings of the soul will be drowned by the discordant voices of modern connectivity!

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