Kaleidoscope: Bridging the visual gaps between terminologies and their implications in Investigative Medicine

What did/do you do?
Medical students make connections between terminologies within laboratory reports, their visual correlates and implications in Investigative Medicine while simultaneously building their own revision resource.

Who is involved?
Meenakshi Akhilesh and Imam Shaik, Newcastle University Medicine Malaysia (NUMed); All Stage 4 undergraduate medical students. The project was piloted on the pioneer batch of 20 students (2012) and currently set to involve 29 Stage 4 students (2013) for Pathology learning during the Clinical Sciences and Investigative Medicine 3 module.

How do you do it?
The session is conducted within the IT cluster at NUMed. The learning resource comprises referenced pictures/photographs collated into a Powerpoint format and arranged so as to reinforce terminologies related to haematology and renal medicine. Year four undergraduate medical students attend the two computer based one hour teaching sessions at NUMed. Each student is equipped with a personal computer (PC) and the pre-prepared Powerpoint resource which is open to editing by the individual student. The main PC manned by the lecturer driving the session is connected to wall mounted display terminals. All concepts included in the resource are an integral part of hospital laboratory reports and reflect the involvement of the organs in intrinsic as well as systemic diseases and are part of the learning outcomes for the organ system week. The resources are planned such that there is a gradual escalation in levels of difficulty. The students are thus gradually challenged to make connections and map their own route between terminologies in laboratory reports and clinical diagnosis. The last few pictures are unreferenced and provide students with the opportunity to test their comprehension and application, and the lecturer to test and teach high order learning. While the lecturer driving the session imparts techniques related to identification of commonly encountered pathognomonic structures/terminologies used for diagnosis, students can make notations and additions into their Powerpoint slides to enhance their own understanding. A second lecturer moves between students to help them with identification issues and queries that arise during the session.

Why do you do it?
Students often display difficulties in making connections between pathology terminologies, their visual correlates and their implications in patient care, especially in recent times when pathology learning has moved away from 'pots' and 'microscopy'. This simple yet inexpensive innovation was planned to replace these methods to ensure closure of loops between pathology teaching in the preclinical years and the application of these concepts to the ever expanding role of Investigative Medicine in the Stage 4 undergraduate medical curriculum. The intended sessions were planned and perceived as a hybrid between the didactic lecture and small group syndicated learning with the following objectives
* to steer students towards acquiring important terminologies from laboratory reports
* establishing visual connections between those terminologies, the diagnosis and the disease process
* train students to build resources towards independent revision sessions as part of self-direction
* increase their ability to self test recognising their own abilities.

---

Coherent Curriculum themes:

- Student engagement

Other keywords:

IT, senior medical students, Pathology
Kaleidoscope: Bridging the visual gaps between terminologies and their implications in Investigative Medicine

Does it work?

All the students showed willingness to attend the sessions, both of which were optional. They participated with enthusiasm, displayed eagerness to learn and freely asked questions as the session progressed from simple and elementary pictorial references to more complex interrelated concepts. Students readily made their own notations on pictures and comfortably typed out the lecturer’s explanations in their own style in an effort to build resources towards independent revision sessions. 90% of students felt that the level of difficulty and the pace of the session were optimal and facilitated a smooth learning curve. 10% of students felt that the content could be spread over two separate sessions. Students observed that the concepts learned during these sessions could be translated into better understanding of other topics related to renal medicine and haematology. It was also noted that students answered most number of questions correctly within the haematology topic during the progress examination.

The lecturers noted that the sessions created a relaxed atmosphere within the class where the transfer of information moved from being hierarchical to interactive and flexible. Students progressed comfortably from level to level and were able to successfully mind map when challenged with the test and teach portions of the resource.