

Effective Knowledge Acquisition and Retention in Medical Education: View From Malaysia

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The exponential rise in knowledge medical students are expected to master poses a great challenge for today's educators. For medical school leaders, the implementation of new digital technologies and teaching modalities can be a crucial component to modernizing their organization's approach to meeting this challenge. Lecturio sat down with Dr. Rajesh Perumbilavil, Deputy Dean of Academic and International affairs, to learn more about how Malaysia's Asian Institute of Medicine, Science and Technology is moving from knowledge overload to knowledge management.

Dr. Peter Horneffer: There continues to be an exponential rise in the knowledge medical students are expected to master in the basic science years. Helping students overcome this phenomenon has been one of the great challenges I have faced in the schools I have led. What is your view of this issue, and have you made any changes to how medicine is taught at your school to address it?

Dr. Rajesh Perumbilavil: There has been a paradigm shift from knowledge overload to knowledge management. The students are now trained to seek knowledge from appropriate resources and manage their own knowledge base.

Basic science facts and trivia are reserved for the relevant clinical context as must-know information, and the rest is classified under nice or desirable to know. The teaching/learning is intended to be more active with group discussions, interactive review sessions, clinical scenario-based learning and team-based learning (PBL/PAL). The clinical relevance is further highlighted in clinical skills sessions and psychomotor sessions, with relevant hands-on exercises.

Our medical school's mission statement says we EMPOWER students.

Our Mission is to empower our graduates with the knowledge, skills & values needed to deliver humanistic and evidence-based quality healthcare in Malaysia and rest of the world, with an aptitude for continuing professional development.

Dr. Peter Horneffer: Are there any other particular challenges the Asian Institute of Medicine, Science and Technology is facing, and how are you addressing them?

Dr. Rajesh Perumbilavil: The main challenge is to move away from memory-based assessments. Testing higher-order thinking skills is a challenge, as many lecturers and students are yet to move from their comfort zone of memory-based assessments.

Modified essay questions based on clinical vignette and a holistic understanding are being resisted mainly because individual disciplines feel their influence and content is diluted.

Dr. Peter Horneffer: **Based on your experience, what would be the one piece of advice you would give your peers facing similar challenges? What opportunities do you see on the horizon?**

Dr. Rajesh Perumbilavil: I would suggest what worked for me. A mix of Kotter's and Fullan's strategies. Involve the faculty and students in the curriculum planning process. After faculty development programs, including the stakeholders into the planning discussions will make them support what they helped create, with the hidden advantage of educating all and making them aware as a continuous process.

The faculty development programs should use constructivism as a learning principle and reveal examples of best practices by other universities. Examples of NBME, USMLE questions and its analysis were used. Creating workshops by thought leaders in the field helps a lot too.

Dr. Peter Horneffer: **As a Dean, how do you see the advancements in learning science, such as 'flipped classrooms', new retrieval practices, and remedial learning scenarios, fitting into modern medical education, and what role can digital platforms play in their integration?**

Dr. Rajesh Perumbilavil: This is the future and the future is now. We follow a spiral curriculum and we use flipped classrooms when the topics are revisited at a different level. We utilize the efficiency of collaborative learning through our peer-assisted learning strategies (PALs). We were early adopters when garnering the benefits of technology-enhanced education. We used Skype during PALs session for students to reach out to friends or teachers across the world to give their input. We use innovative techniques to keep medical education interesting and therefore accepted by the learners.

We use virtual microscopy and embed its utility into PBL (1, 3, 4), etc. We use a learning management system, encourage students to submit special study modules, e-posters online which even help in lateral education of teamwork, citing references, becoming

aware of the ethics and approval process by journals, conferences, etc.

Dr. Peter Horneffer: From your perspective, what do you think medical education will look like 5 years from now?

Dr. Rajesh Perumbilavil: It will be totally learner-centered. Learning will be self-directed with minimal face to face sessions. Most theoretical learning will be online, timed to the learner's pace. Real-life training will be in the virtual, simulative and industry (hospital) environments. The goal would be to produce work-ready doctors.

Our school has year five dedicated as the shadow houseman year. The students follow the housemen on rounds and ward duties to get ready for their role the following year. They refer to clinical practice guidelines and get hands-on work experience. This fits our university slogan of 'educating tomorrow's leaders.'

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