Contextualised learning for pre-clinical year students with Virtual Patients

Pre-clinical year virtual patients are the vehicle to drive the patient-centred learning in BM5 Year 2 of the University of Southampton Medical School. They are interactive learning materials facilitating contextualised learning of basic and clinical sciences. Each case has a clinical scenario, presented in 3D animations or videos, and basic science-related quizzes, interactive tasks and embedded learning materials. Students can test their understanding of the basic science in a clinical context and can develop clinical skills taking the role of a doctor interacting with the patient.

Roles of Virtual Patients in the curriculum

Weekly virtual patients in pre-clinical years are to drive the learning by:

- providing a framework that will link curriculum activities taught in the week;
- helping students integrate their learning in the week;
- encouraging students to reflect upon their learning;
- helping students assess their knowledge on the topic;
- identifying areas where student understanding is insufficient and provide links to appropriate teaching and learning materials.

Key features

The key design features of the Virtual Patients are:

- Interactivity

Interactivity is the most vital part of an interactive learning material, and key features for interactivity used to promote the cognitive process with a Virtual Patient are interactive and reflective tasks, narrative storytelling of basic and clinical sciences and individualised feedback.

As a revision tool, the Virtual Patients allow students to progress at their own pace, testing their knowledge and repeating elements as necessary.

- Visual presentation of clinical scenarios

To facilitate contextualised learning, visual presentation of a clinical scenario using 2D and 3D animations and videos are used. It aims to make the patient as realistic as possible and to encourage students to see the case from the patient perspective.

- Individualised feedback

Students receive feedback on each quiz they have answered, and at the end of each case they receive computer generated feedback on how well they have performed for each learning outcome and for the overall case. Depending on their performance, when below 60%, they are presented with direct links to recommended teaching and learning materials with which they can improve their understanding.

- Contextualised learning of basic sciences

Basic science is presented in a clinical scenario, which enables students to see its relevance to clinical science.

- Data retrieval

Student interactions and inputs, questions answers and summary medical notes, are stored into a database and this enables students to exit a Virtual Patient at any time and continue it from where they have left. The recorded data are then used to analyse students' performance and to offer individualised feedback identifying the areas where their understanding are insufficient with links to relevant teaching and learning resources. From course websites, teaching staff can monitor the usage of a Virtual Patient and students' performance for each learning outcome associated to the case. They can use the information to improve student learning in the week. In the same way, from course websites students can monitor their own learning with Virtual Patients.

- Curriculum integration

Virtual Patients have been designed and integrated as part of the reviewed BM5 programme, and they provide a framework for a weekly learning.

In the presentation we would like to show examples of the Virtual Patients developed and their learning effects.