Development of ‘virtual lab’ to teach basic principles of pharmacology
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INTRODUCTION
- Pharmacology is an experimental science that uses a wide range of techniques to provide important skills in the analysis of research data relevant to the study of the effects of drugs on humans and model systems.
- The aim of this project is to transform relatively dry subject matter into an engaging online presentation to supplement face to face teaching which provides immediate feedback and promote active student learning experience.
- This unique approach allows the full exploitation of the pedagogic advantages of the interactive online material (Bonakdarian et al., 2010).

PROJECT OVERVIEW
- The focus of this project was to create ‘virtual lab’ to teach basic principles of pharmacology and give students some familiarity with laboratory studies.
- The ‘virtual lab’ introduces students to use of an organ bath during the study of the effects of drugs within isolated animal tissues and covers basic concepts needed to understand the interactions between drugs and their target receptors.
- This computer-based teaching session involves the use of an organ bath simulation package which has been developed using Adobe’s Flash CS6 to create interactive web content and learning modules designed to work with PCs, Macs and tablet devices.
- Articulate eLearning software tools will be used to put together the content of online workshop material for the simulation experiment and this will include narrated PowerPoint presentation and interactive quizzes which are designed to provide immediate feedback.

REFERENCES

RESULTS

![Fig. 1 A screenshot showing easy to use pull-down menus to conduct interactive computer simulated pharmacological experiments.](image)

![Fig. 2 A screenshot showing simulated responses to increasing concentrations of an agonist drug displayed in real time. Students will be able to perform simple calculations needed to achieve desired drug concentrations and interpret concentration-response curves.](image)

CONCLUSION
- The software is designed to be embedded into the MyUni system, making upgrading and troubleshooting less time consuming and easily handled by existing staff.
- Both formal and informal student surveys will be conducted to evaluate the web-based learning resources including the formative and summative online assessment materials.

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