LEARNING TO TEACH ONLINE

Watch the video
http://bit.ly/d18ac5

CASE STUDY

Medicles: User generated online medical tutorials

Featuring: Chris Gillett & Chris Bailey, University of Bristol

|	
Context	- A series of online medical mini-tutorials that can be completed within 20 minutes, - Designed to help students develop knowledge and revise through self-assessment
Description	- Students may monitor their performance in comparison to other students, and keep a record of which tutorials they have completed - Tutorials may be designed and submitted to the website by medical students from all over the world - All tutorials are peer reviewed by senior medical students and doctors prior to being released, to ensure accuracy and validity of content
Technology	- The Medicles website was created with customised Wordpress blog software

Written by Simon McIntyre

Aims and overview

This case study examines the use and benefits of online user generated self-assessment learning objects in Medicine. Two medical students from the University of Bristol developed a free online website called Medicles, which allows medical students from all over the world to develop and share mini-tutorials on a wide range of topic areas. This case study examines how the Medicles system works, and discusses the benefits that user generated learning resources can offer.

What is Medicles?

Medicles is an open access website that offers 'bite-sized' online tutorials and self-assessment for medical students. The site is free to access, and has been designed with ease of use in mind. Students may read brief PDF files outlining key concepts within a wide range of topics, and then undertake different styles of interactive tutorials. All of a student's results are recorded in their own online profile, and they may track their progress, analyse areas of weakness in their knowledge, and compare their performance with other students who are using the website.

All of the content on the site is developed by students, and registered users can use the built in tools on the website, to create and submit their own interactive tutorials. All submissions are peer reviewed by both senior medical students and doctors to check accuracy and relevance before inclusion in the site.
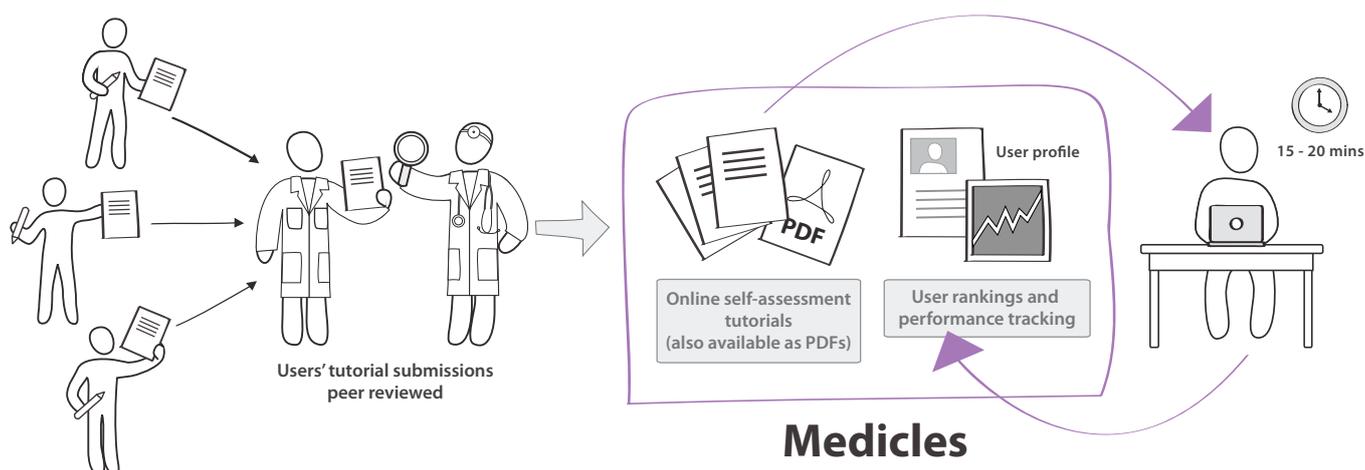
*Medicles is free and open to medical students from all over the world. The self-assessment activities are designed **by** students **for** students, and the built in statistical analysis features enable learning progress to be easily monitored. The aim of the website is to provide students with a fast and easy way to revise important information, and to help medical students from around the world to develop their own online tutorials, identifying gaps in each others' knowledge and developing and sharing learning materials to address them. All content on the website is peer reviewed by senior medical students and doctors to ensure accuracy.*

Case study outcomes quick summary

Key benefits

- *Medical students are able to freely access the considerable library of online interactive tutorials in their own time as often as required*
- *The brief format of the activities means students can revise quickly*
- *The website's ability for self-assessment and performance tracking enables students to build a comprehensive picture of their strengths and weaknesses in different knowledge areas*
- *The process of developing content is highly reflective. As the content is developed by students, it is often focused upon topics that students have struggled to understand during their study. In this way students are helping to 'fill knowledge gaps' for their peers*
- *By developing a tutorial for inclusion in the site, students have the opportunity to develop a more thorough understanding of the subject matter than if they were just learning it passively*
- *Knowledge is easily shared between a potentially large number of contributors from different medical disciplines, institutions, and countries, breaking traditional institutional boundaries. Contributors are also given credit for their material on the website*

Key issues to consider

- *Encouraging busy students to take the time to develop content can sometimes be difficult*
- *Accuracy, quality and relevance of user generated tutorials are of key importance. The peer review process of submitted material is crucial, so the good will of reviewers to donate their time is of consideration*
- *It was important that technology did not become a barrier to students using and submitting content to the website. Therefore careful attention had to be paid to the development of the site to make it as easy to use and 'tech-free' as possible*

Motivation for adopting an online teaching strategy

Chris Gillett and Chris Bailey are students within the University of Bristol's undergraduate medical program. As a part of this program, they were able to undertake an <u>elearning SSC elective</u>, which focused on students developing online tutorials which would be used in the Hippocrates website, an open access learning resource for medical students *(refer to the episode '<u>Hippocrates: Online medical tutorials - Case study</u>' for more information).* Having seen the potential of online tutorials for learning, Gillett and Bailey decided to continue the development of their own online tutorials independently of the university by creating the Medicles website.

Planning

The following were key considerations in the conception and planning of Medicles:

- *Reflecting upon their own learning experiences as medical students, Gillett and Bailey recognised that the full length tutorials that were available (typically forty-five minutes to an hour), while effective for introducing new information in a comprehensive manner, took too long to complete when students just wanted to revise content*
- *Similarly, the existing online multiple choice style quizzes that were currently available, while quick to complete, lacked the depth of analysis that students required*
- *Therefore Gillett and Bailey wanted to develop an online self-assessment strategy that was relatively quick to complete (around fifteen to twenty minutes) but that provided a level of teaching suitable for revision of topics students had studied previously*
- *In order for the resource to be effective, the ability for students to both self-assess and analyse their performance over time were important.*

Teaching

At the time of publication, content was available for twenty-seven different medical categories, including Cardiology, Ophthalmology, and General Surgery. The following describes typical use of the website:

- *Each self-assessment tutorial comprises a PDF file including important notes, diagrams and key areas of knowledge that will be tested, which can be downloaded or printed for future reference*
- *Once a tutorial is selected, students can choose to start a countdown timer if they wish, which is set to the average time required to complete the questions*
- *Students then proceed to answer the questions on screen, in formats such as short answer, diagram labelling and filling in missing words or phrases*
- *Students can register to create a Medicles account, which enables them to track their performance in key areas of medicine, identify strengths and weakness in their knowledge, and compare their performance with other medical students*
- *Students can rate tutorials, and share them with friends or colleagues via social media*

Contributing to the website

As previously mentioned, the Medicles website allows students to develop their own interactive tutorials. The concept of a community of learners was central to the development of this process. The following are key considerations that were taken into account when designing the tutorial submission process within the website:

- *As quality and relevance of the user submitted tutorials to the medical curriculum is of prime importance, Gillett and Bailey provide students with an online guide to designing content, and a page on the website*

that explains the <u>process of creating a tutorial and peer review</u>

- *It was important that students did not have to have knowledge of complex technologies (such as Adobe Flash for example) to create their tutorials. The online submission process is step-by-step and requires no specific technical knowledge*
- *Registered students are able to choose from a range of different formats, and can create their entire tutorials through easy to use online forms within the website*
- *As users who create tutorials are able to use images and video, it is important for them to understand how issues such as copyright relate to any images or media they use in their tutorials. As any infringing material would mean a tutorial is rejected, the Medicles website provides <u>resources and information about copyright and creative commons</u> in relation to the creation of tutorials.*

Conclusion

We hope that this case study can inspire you to consider using user generated resources or self-assessment in your own teaching and discipline. Creating and maintaining a wide range of self-assessment tutorials in a constantly changing field such as medicine can be incredibly challenging. By creating a community of learners who have the opportunity to develop and share their own learning materials with their peers, it can be easier to maintain the currency of such a learning repository, and can be beneficial for students as they are exposed to a wider range of different ideas and resources.

Additional information

Medicles website
<u>www.medicles.co.uk</u>

Additional reading*

Gomez-Albarran, M., & Jimenez-Diaz, G. (2009). <u>Recommendation and Students' Authoring in Repositories of Learning Objects: A Case-Based Reasoning Approach</u>. International Journal of Emerging Technologies in Learning (iJET), 4.

Anderson, R.P., & Wilsona, S.P. (2009). <u>Quantifying the Effectiveness of Interactive Tutorials in Medical Library Instruction</u>. Medical Reference Services Quarterly, 28(1). 10-21.

Sullivan, M. E., Hitchcock, M. A., & Dunnington, G. L. (1999). <u>Peer and self assessment during problem-based tutorials</u>. The American Journal of Surgery, 177(3), 266-269.

Note: Some readings are held in subscription only databases. In most cases accessing the link from your institution's network will enable access.

Acknowledgements

For more Learning to Teach Online, visit the COFA Online Gateway

To find out more about the Learning to Teach Online project, or to view the video component of this episode, please visit the COFA Online Gateway.

www.online.cofa.unsw.edu.au

VISIT COFA ONLINE GATEWAY ▶

Simon McIntyre
LTTO Project Leader
s.mcintyre@unsw.edu.au
Phone +61 2 8936 0631

Karin Watson
Co-Project Manager
karin@unsw.edu.au
Phone +61 2 8936 0631

Search for COFA Online on:

About the project

The Learning to Teach Online project is a free professional development resource designed to help teachers from any discipline, whether experienced in online teaching or not, to gain a working understanding of successful online teaching pedagogies that they can apply in their own unique teaching situations. It hopes to encourage dialogue, discussion and the sharing of ideas about online learning and teaching across disciplines and between institutions around the world.

About COFA Online

COFA Online is an academic unit at the College of Fine Arts (COFA), The University of New South Wales (UNSW), Sydney, Australia. It has been innovating online pedagogy, academic professional development and effective online learning strategies since 2003.

About The University of New South Wales

UNSW has an enrolment of approximately 40,000 students, and is the leading international university in Australia with over 10,000 international enrolments from over 130 nations. UNSW was also ranked as the top university in 2009 in the Australian Government Learning and Teaching Performance Fund for the quality of its teaching.

Australian Learning and Teaching Council

Support for this activity has been provided by the Australian Learning and Teaching Council Ltd, an initiative of the Australian Government Department of Education, Employment and Workplace Relations. The views expressed in this activity do not necessarily reflect the views of the Australian Learning and Teaching Council.