UNIVERSITY OF OXFORD

www.ctl.ox.ac.uk

@CTLOxford

GUIDING SELF-DIRECTED LEARNING WITH ONLINE RESOURCES

BENEFITS

- Students reinforce their learning with a quiz, which is not assessed so they are free to try and fail without judgement.
- Students can learn at own pace.
- Share information for which there is no time in class.

TIPS

- Involve students in the design of online resources to develop a teaching resource that is both relevant and accurate.

TOOLS USED

- VLE (WebLearn)
- Quizzes

Abstract

Online resources can significantly help students with their independent learning. This case study demonstrates how a well-structured online resource serves as a guide when students are required to study more topics than could possibly be covered in the classroom. This particular use of an online quiz allows for different levels of student engagement and enables learners to return to it whenever they feel the need to. Its potential is not limited to the field of Medical Sciences, but similar eLearning resources could be used across disciplines.

eLearning resources help cover broad syllabus

In the first two years of medical sciences studies, students need to acquire core knowledge across a broad syllabus. Since tutors can only teach a limited number of topics in detail, students need to read into many aspects of the syllabus themselves. While self-directed learning is an important study skill in tertiary education, medical students in years 1 and 2 are often bewildered by where to start reading.

> **"The eLearning resource encourages students to read more deeply into the topic."**
>
> **- Max Brodermann**
> Second year medical student

Max Brodermann, medical student at Hertford College, and Professor David Greaves, lecturer at Hertford, set up a bespoke online resource in the Virtual Learning Environment (WebLearn) (Figure 1) to support self-directed student learning that encourages exploration of topics beyond the fact-based syllabus of undergraduate medicine. Their vision is to provide a consistent, integrated online learning resource for all medical students that is appropriate for where they are in their six years of medical school training.

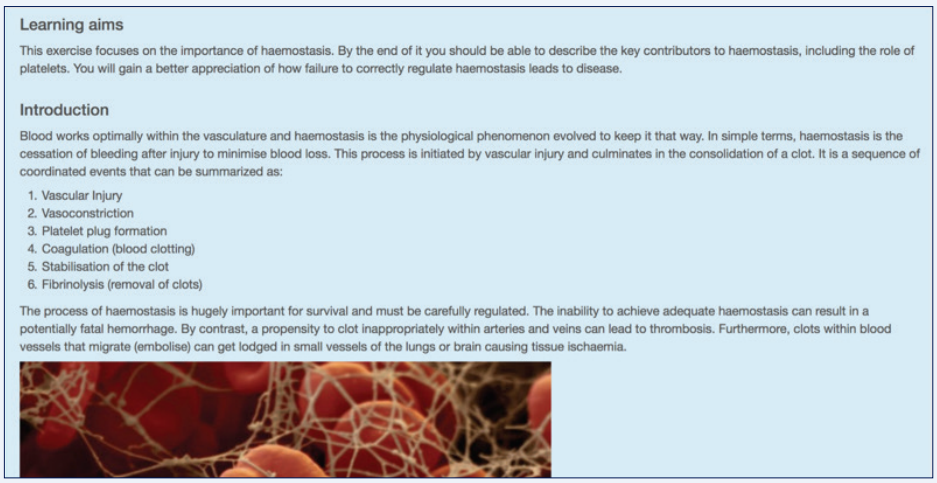

Figure 1: Screenshot of the landing page in the VLE (WebLearn).

Making it easy to learn basic core material online

Mr Brodermann and Prof Greaves started working towards a standardised format for online resources with a course on blood clotting (haemostasis). This topic is relevant to several modules of undergraduate medicine and biomedical science.

The eLearning resource is designed to take about 20 minutes to complete and contains different approaches to revise basic core material, encouraging students to read more deeply into the topic. The key features of this resource are:

1. a multiple-choice questionnaire (Figure 2),
2. a list of key facts, clinical relevance and classic papers,
3. a ‘fun fact’,
4. descriptions of mechanistic insights gained from cell and molecular biology,
5. an interactive exercise and
6. a section where students think about their own (potential) research paper.

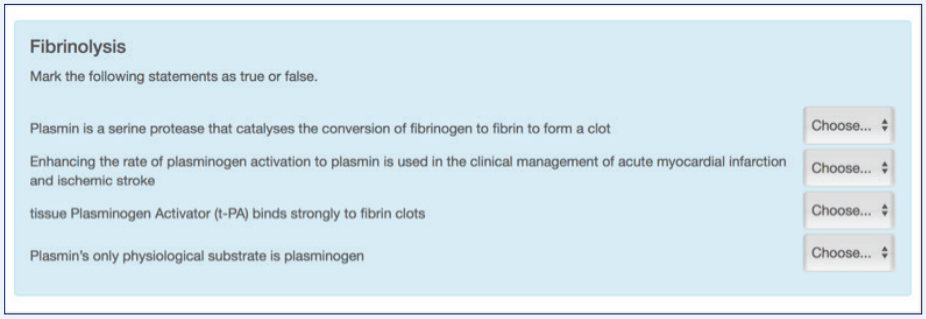

Figure 2: Screenshot of one of the multiple-choice questions.

eLearning resource for a successful learning outcome

Each of the steps listed above serves a particular purpose during the students' learning journey. The first step is to answer a multiple-choice question (MCQ) on each of the sub-topics on blood clotting, followed by detailed explanations of why each answer is correct or incorrect (Figure 3).

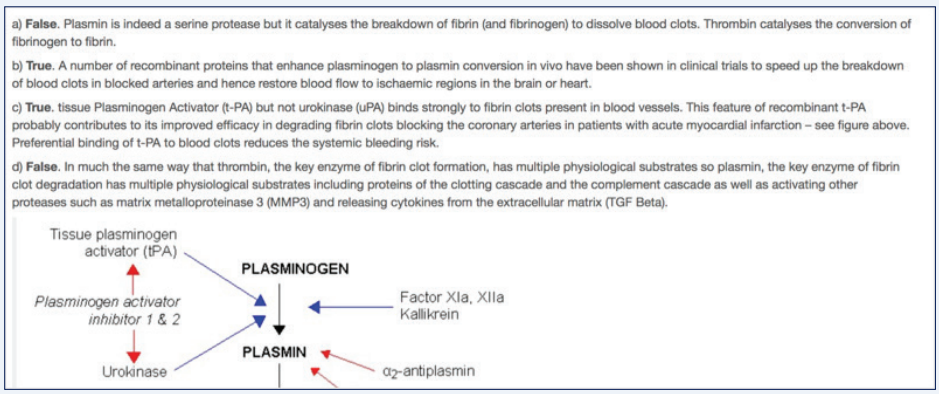

Figure 3: Screenshot of the explanations for the right and wrong answers.

Each section then lists key facts, clinical relevance and classic papers with links that lead directly to original research papers (Figure 4). Reference to classic papers is missing from many undergraduate lectures, so including key original studies that long pre-date the digital publishing era is one of the greatest features of this eLearning resource. This part of the resource also guides their reading of primary research.

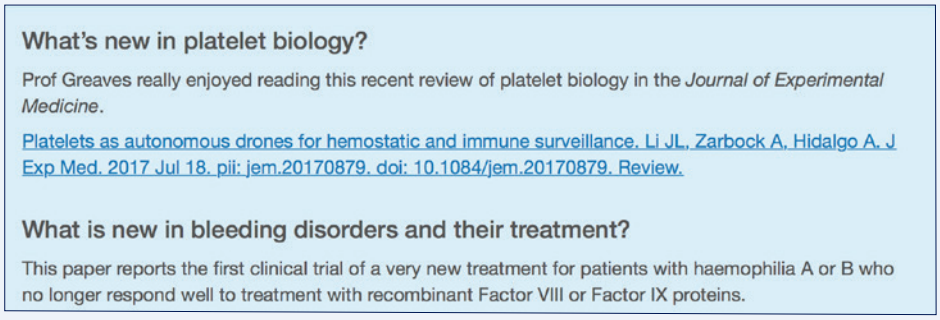

Figure 4: Screenshot of the section with links to the PDF version of classic research papers.

> "There is an appetite amongst current pre-clinical medical students for this type of teaching support."

– Max Brodermann
Second year medical student

The fifth part serves to bridge the gap between basic science and clinical medicine. Questions are accompanied by clinically relevant details and there is a section where students are given clinical presentations of three patients alongside three lab test results and asked to try and match them up. This is designed to make students think about real life presentations.

The eLearning module ends by prompting students to read further. They are asked to indicate relevant titles and to provide one or two recent thoughtful reviews in the topic area.

Impact

Students find that this online resource is a great, efficient way of conveying concise and relevant information. They particularly appreciate the inclusion of classic papers throughout and novel papers at the end of the test which they can use as evidence in essays and exams.

Mr Brodermann and Prof Greaves are convinced that this style of eLearning can be applied across the first and second year Oxford Medicine syllabus. Since there is an appetite amongst current pre-clinical medical students for this type of teaching support, they are currently looking at recruiting 4th and 5th year clinical students to use this resource as a template to expand the provision of high quality online self-study modules.

Next steps

- Find out more about how you can use technology to enhance your teaching at **www.ctl.ox.ac.uk**.
- Contact our team of learning technologists at **contact@ctl.ox.ac.uk**.
- If you are based within Medical Sciences, contact **msdlt@medsci.ox.ac.uk**.

Image credits: Header image by Peter Hudston; Student working on computer by Brooke Lark; Students by Brooke Cagle; Student with VR headset by Robbie Brock CC BY-NC-SA

OxTALENT winners

Joint Runner up, OxTALENT 2018 award for Innovative Teaching and Learning with Technology. The text and images in this case study have been adapted from Max Brodermann and Prof David Greaves' entry for the OxTALENT competition.

www.ctl.ox.ac.uk

@CTLOxford

UNIVERSITY OF OXFORD