Redesigning a Traditional Medicine Lecture into an Interactive Online Learning Module

Patrick de Permentier[1] and Lila Azouz[1,2]
[1]School of Medical Sciences, [2]Faculty of Medicine

Phase 1 Medicine lectures traditionally involve the delivery of content with minimal discussion or interaction. The "Histology of Blood" lecture introduces fundamental concepts that are transferable to various courses. We wanted to provide students with the opportunity to actively learn the content and review it at any point throughout Phase 1.

The one hour Medicine lectures were redesigned into a 35 minute online activity that included five online interactive lessons and an introductory video providing clear expectations and learning outcomes. We used several instructional strategies and multimedia learning principles to reduce cognitive-load and increase student interaction. We incorporated multimodal elements that included drag and drop activities, short quizzes, images, narrated slides with animation, and YouTube videos.
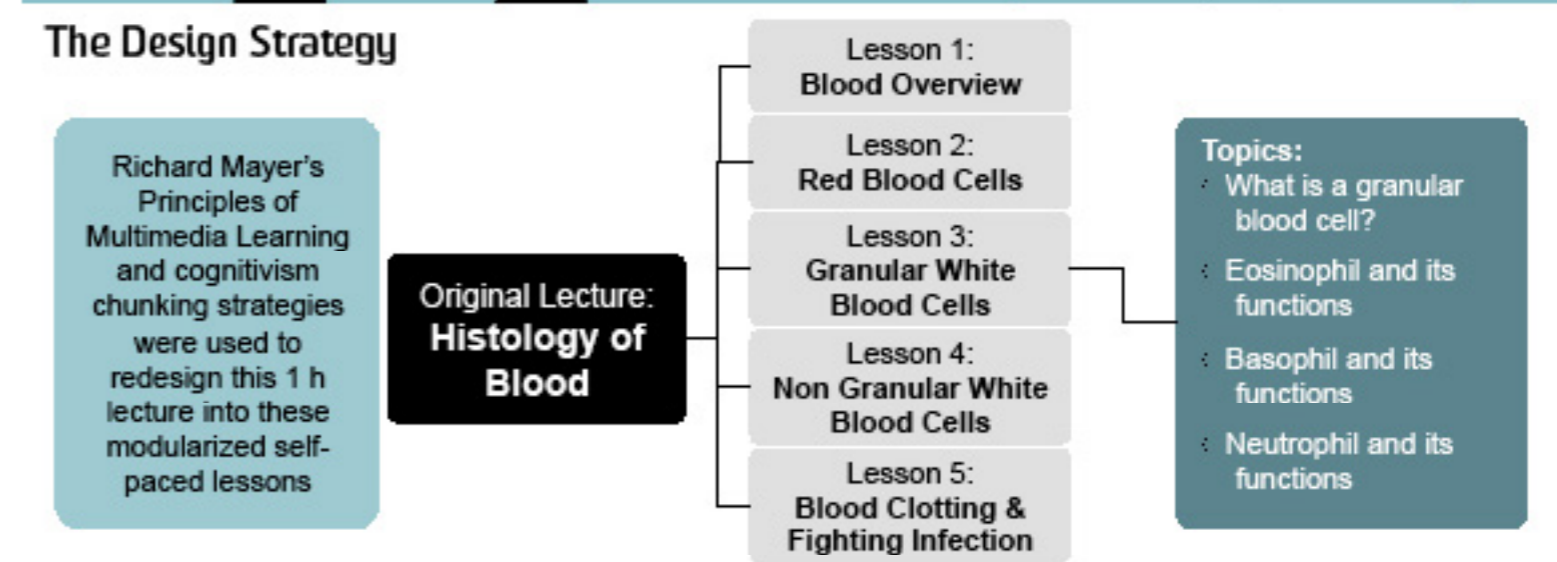
This online activity was incorporated into the eMed timetable to encourage completion within the scheduled program. We reviewed data from Moodle analytics on student engagement and access that revealed a 77% completion rate (1551 views). Students provided feedback on the effectiveness of the online activity through a Moodle survey. Comments such as "the ability to rewind and take notes" and "short, concise and well-structured" demonstrate a high degree of overall satisfaction. Students were also given the opportunity to make suggestions for future iterations. These comments ranged from "more questions" to "provide answers after repeatedly getting it wrong".

The advantage of having interactive online learning modules is that the student can continually return to this material for reinforcement and revision purposes. It also provides the lecturer with time to clarify areas of difficulty and misconceptions and thus enhance student comprehension.

Reference:

Richard E. Mayer & Roxana Moreno (2003) Nine Ways to Reduce Cognitive Load in Multimedia Learning, Educational Psychologist, 38:1, 43-52, DOI: 10.1207/S15326985EP3801_6

UNSW Australia
Learning and Teaching Forum October 2015
Blended Learning: Past, Present and Future
Never Stand still — Learning and Teaching Unit

Redesigning a traditional Medicine lecture into an interactive online learning module

The Transformation

FACE TO FACE → ONLINE

The Design Strategy

Richard Mayer's Principles of Multimedia Learning and cognitivism chunking strategies were used to redesign this 1 h lecture into these modularized self-paced lessons

Original Lecture: **Histology of Blood**

- Lesson 1: Blood Overview
- Lesson 2: Red Blood Cells
- Lesson 3: Granular White Blood Cells
- Lesson 4: Non Granular White Blood Cells
- Lesson 5: Blood Clotting & Fighting Infection

Topics:
- What is a granular blood cell?
- Eosinophil and its functions
- Basophil and its functions
- Neutrophil and its functions

These online modules were created using Adobe Presenter, examples provided below:

Drag & Drop Activity | Animated Narration | Matching Assessment

Results and Future Direction

77% student completion rate

1550 student online activity viewing

Student Feedback
"the ability to rewind and take notes"
"Short, concise and well structured"

Next Steps
Develop more pre-lecture online activities & include more face to face discussions

Patrick de Permentier[1], and Lila Azouz[2],
School of Medical Sciences[1], Faculty of Medicine[1,2]