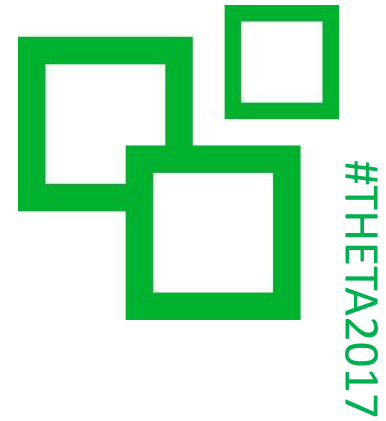


# H5P AND THE BRAVE NEW WORLD OF LEARNING INTERACTIVES



**Dr Suneeti Rekhari & Dr Puspha Sinnayah**

**Connected Learning and College of Health & Biomedicine, Victoria  
University, Melbourne, Australia.**



This work is licensed under a Creative Commons Attribution 4.0 International License



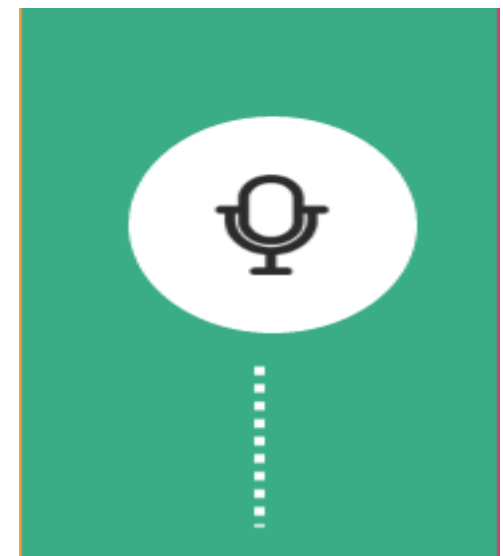
# A CASE STUDY IN FIRST YEAR ANATOMY AND PHYSIOLOGY UNITS



IDEA



DESIGN /  
PROCESS



FEEDBACK



# IDEATION

- Self-regulated learning – fostering independent learning – scaffold learning that may be done *in and away* from the classroom.
- Placement of learning technology in HE and Anatomy & Physiology education.
- **Facilitate learning by *active* participation and informal self-testing, along with formal graded testing.**
- Design and develop learning activities to promote higher level thinking, knowledge and skills.
- Recognise: Importance of individual learning styles, chunking information, active learning, assimilation of information – making sense of it all.



# CONSIDERATIONS

- Implement in Blended Learning – combination of technology enhanced tools and traditional F2F classroom practice.
- Flexibility of pace, place and time.
- Mobile friendly, easy to create and use, no plugins, no large SCORM packages...
- LTI integration with VU Collaborate (our LMS) and its learner analytics.
- No design/software experience required for academics and other content creators.
- Open source and cheap (= free!).



# CREATION



## Course Presentation

Create a presentation with interactive slides



## Interactive Video

Create videos enriched with interactions



## Timeline

Create a timeline of events with multimedia



## Drag and Drop

Create drag and drop tasks with images



## Image Hotspots

Create an image with multiple info hotspots



## Drag the Words

Create text-based drag and drop tasks



## Fill in the Blanks

Create a task with missing words in a text



## Questionnaire

Create a questionnaire to receive feedback



# DESIGN

## ➤ Key concepts:

- ✓ Interaction
- ✓ Self-regulation
- ✓ Active Learning
- ✓ Flexibility

## ➤ Key Features:

- ✓ Provide feedback
- ✓ Pedagogical process
- ✓ Problem-based
- ✓ Reflective

## ➤ Key Elements:

- ✓ Chunk
- ✓ Chunk and
- ✓ more chunk!
- ✓ Instructional text
- ✓ Target key learning outcomes
- ✓ Contextualise and link back to unit material
- ✓ 'Look & Feel'
- ✓ Did I mention chunking?



# VISUALISATION

## ACTIVITY 4

**Introduction:** The specific functions of the different types of cells in the human body is largely dependent on the organelle found within the cell. Recall that organelle are small cellular structures that perform specific functions within the cell. Taken together, the roles of the varying organelle allow each cell to function as a whole.

**To do:** Try to name the organelle shown on the flashcards and identify their major functions. Remember your answers may still be correct even if they do not exactly match the words on the card.

**Hint:** You may need to refer to your textbook (Table 3.3 will be helpful!)

**Time taken to complete:** No more than 10 minutes

Identify the organelle shown in the picture and their major functions

Card 1 of 11

Instructional text

Link to unit material

Chunked individual activity

Learning Interactive (H5P)

Feedback



# CONTEXTUALISATION

- F2F sessions: Process Oriented Guided Inquiry Learning (POGIL) - an example of an active learning approach - has been shown to significantly improve students' grades in Physiology (Brown, 2010).
- LMS modules: H5P inserted into 'activities modules' in the unit space – students to complete these pre-class, revise them in-class, practice post-class.
- Blended Approach: students exposed to H5P modules prior to attending face-to-face classes where they have opportunity to review the content in an active learning mode, employing team-based guided inquiry. Opportunity to revise and practice post-class.





# EXAMPLE

## Online Learning Interactive (H5P)

## F2F classroom activity/practice

Table of Contents > Day 3 > Morning session - Nervous System > Nervous system- Module 3- RMP and AP

Nervous system- Module 3- RMP and AP

### Nervous System- Module 3- RMP and Action Potential

Click on the blue buttons to find out more about the generation of an action potential

**The big picture**  
What does this graph show? During the course of an action potential (below), voltage changes over time at a given point within the axon.

1 Resting state. No ions move through voltage-gated channels.

2 Depolarization is caused by  $\text{Na}^+$  flowing into the cell.

3 Repolarization is caused by  $\text{K}^+$  flowing out of the cell.

4 Hyperpolarization is caused by  $\text{K}^+$  continuing to leave the cell.

Membrane potential (mV)

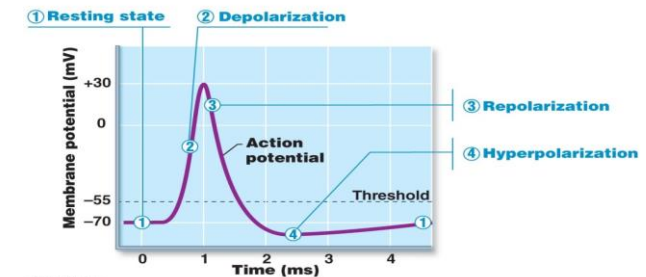
Time (ms)

Threshold

10 / 16

Download Embed

### The big picture

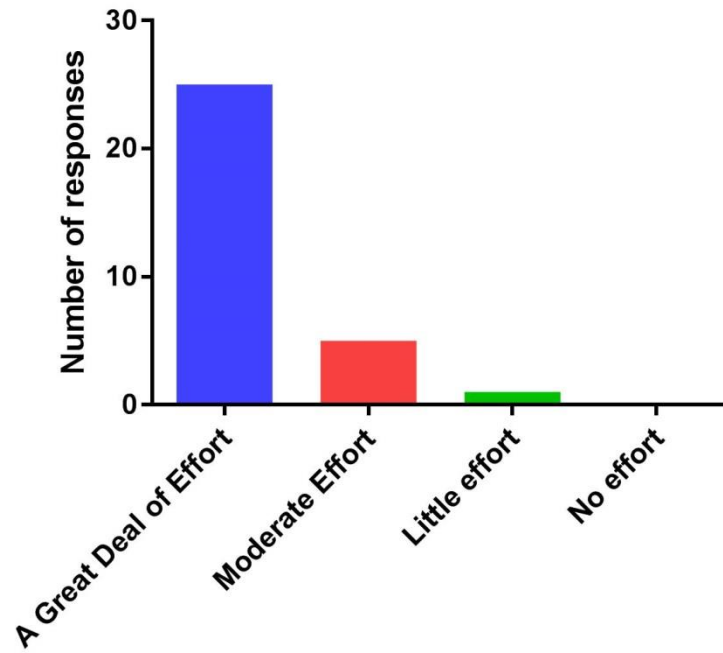


- What is the state of the membrane at phase (1)?
- Describe or name the ion channel that underlies the sharp increase in membrane potential seen in phase (2).
- What two events are necessary for the sharp fall in membrane potential seen through phase (3)? (Be as specific as possible.)
- What ion is flowing, and in which direction, to explain the changes in membrane potential through phase (4) (you will likely need the aid of your textbook to answer this question.)
- How is the concentration gradient of ions on either side of the membrane restored after an action potential?

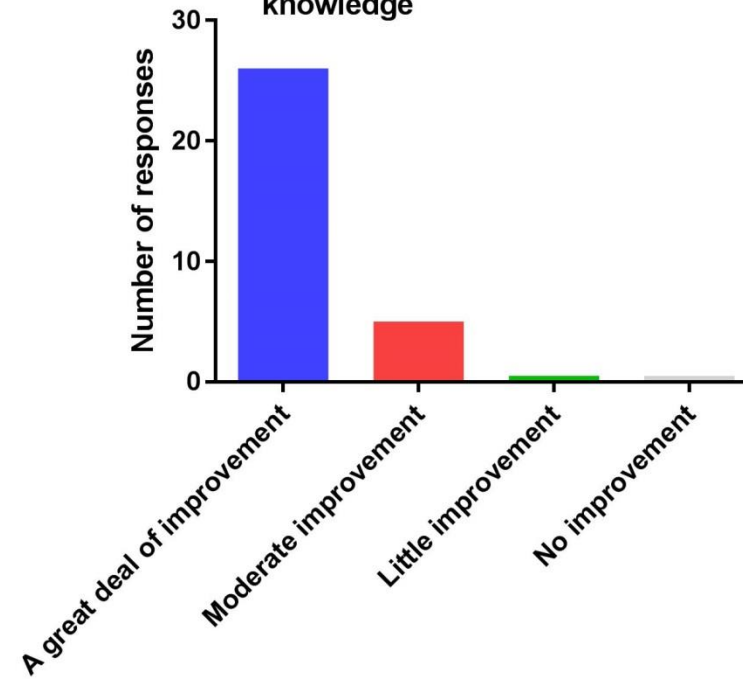


# FEEDBACK (THUS FAR)

Question 1: How Would you rate your effort while completing the on-line modules?



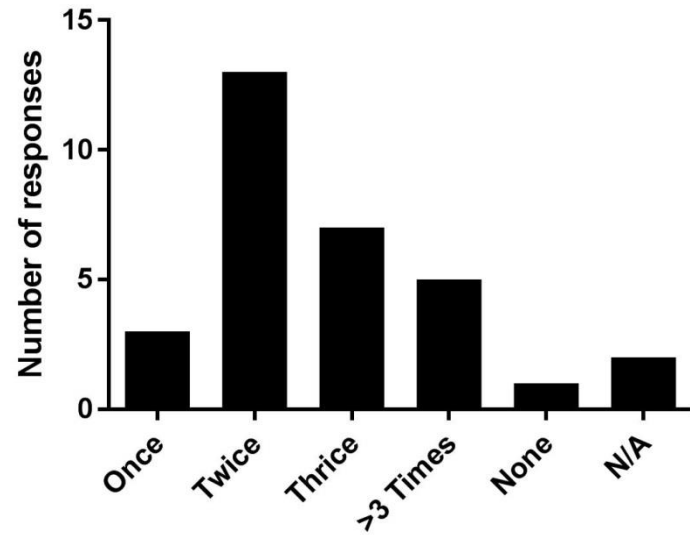
Question 2: As a result of your enrolment in this supplementary module, please indicate the level of IMPROVEMENT you made in your Bioscience content knowledge



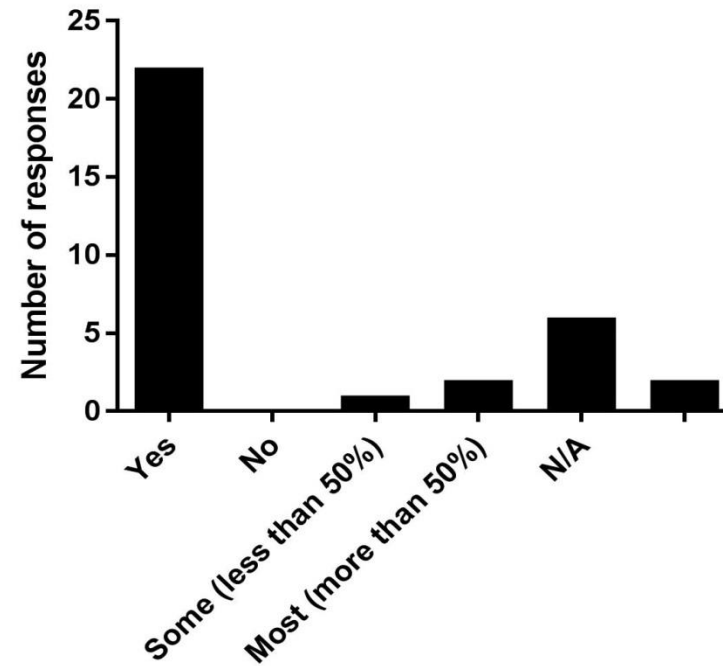


# FEEDBACK (THUS FAR)

Question 12: How often did you repeat/do these modules?



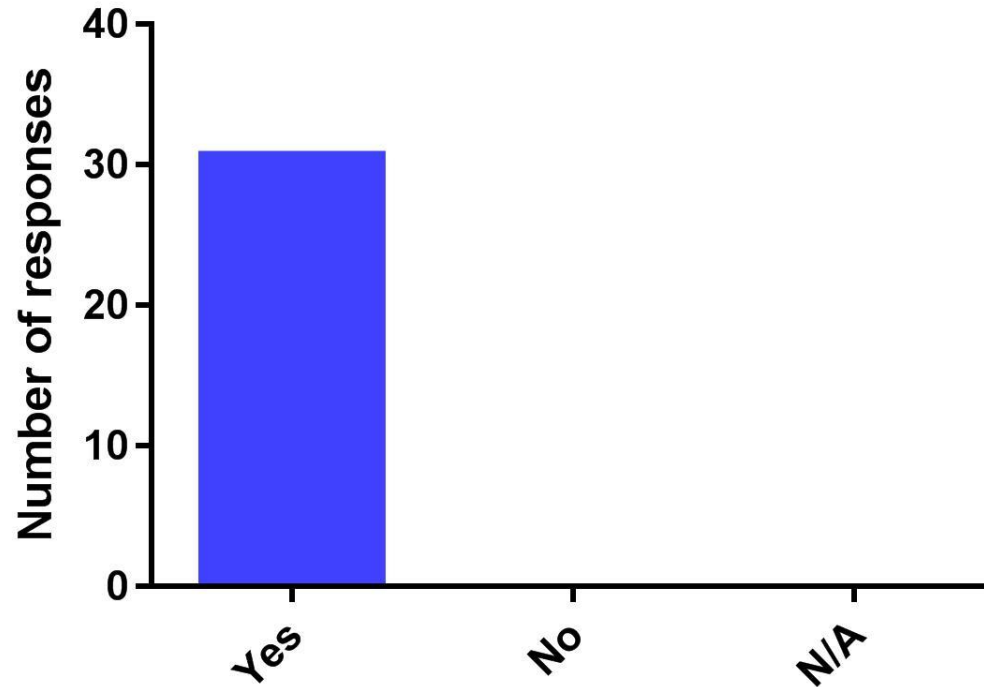
Question 13: Did they align with your unit content?





# FEEDBACK (THUS FAR)

Question 16: Will these modules be helpful in units you will study in the future?



# CONCLUSIONS

- Continue this work in the next iterations of the unit.
- Follow the principles of learning by *active* participation and finding innovative ways to achieve this.
- Design and develop learning activities to promote higher level thinking, knowledge and skills.
- Continue to meet the challenges and experiment in this 'brave new world' of learning and teaching...