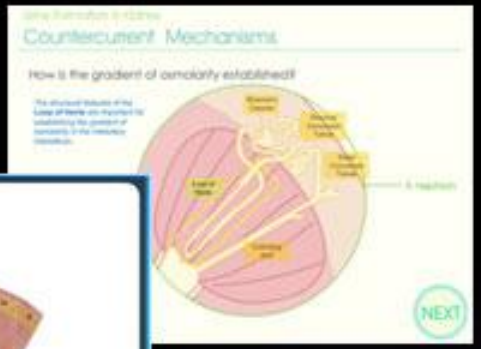
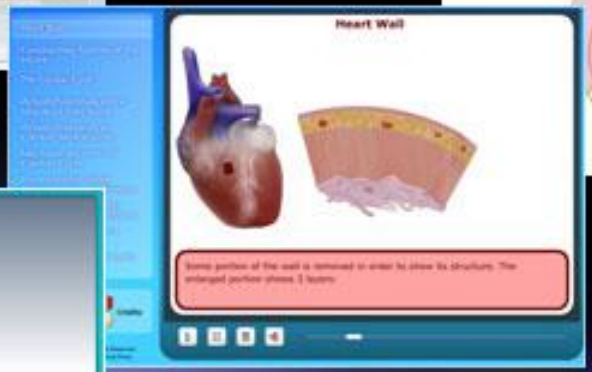
E-Learning tools for Nursing Students

By Dr Isabel Hwang
School of Biomedical Sciences





Source of funding

1. Courseware development grant (2007-2008)

   General Physiology

2. Courseware development grant (2008-2009)

   Cardiovascular Physiology

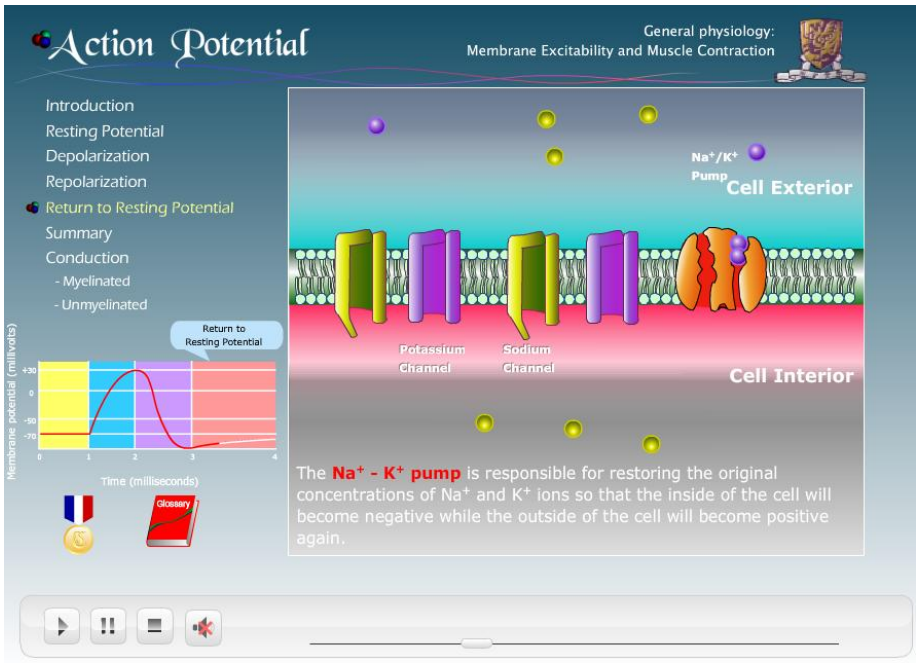
3. Courseware development grant (2009-2010)

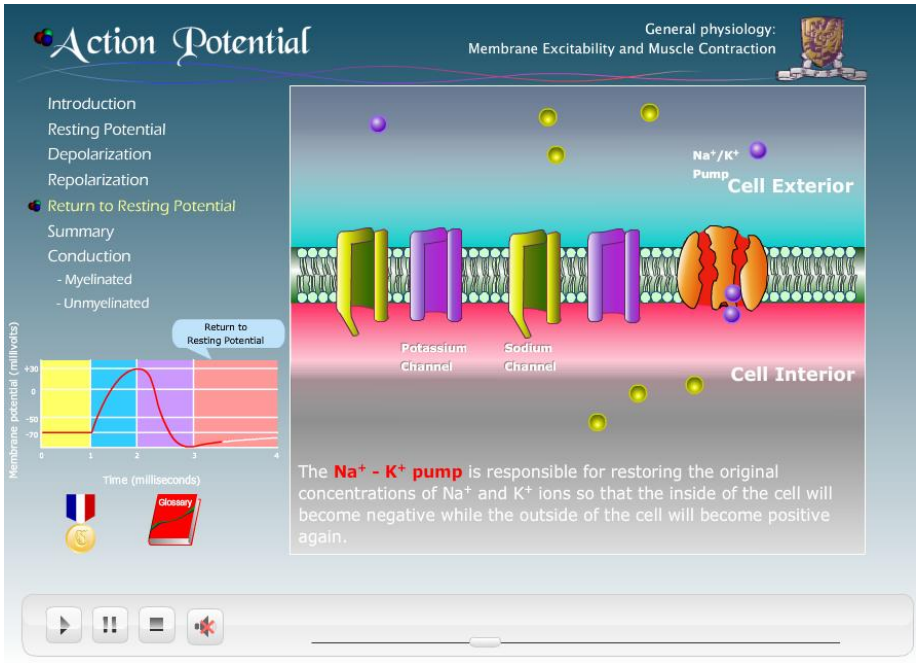
   Renal Physiology

Features of animation materials used

- Simple interface
- With sliding bar or buttons for students to pause, to rewind or to skip pages/ sections
- Some were structured according to topics/ with glossaries/ with narrations

Snapshots of the animations

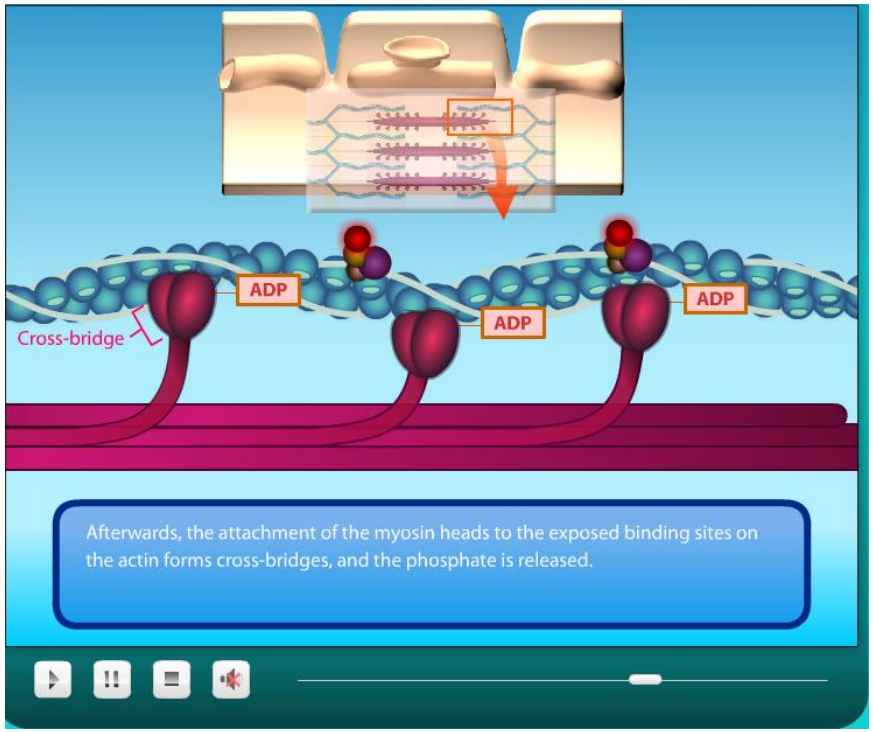


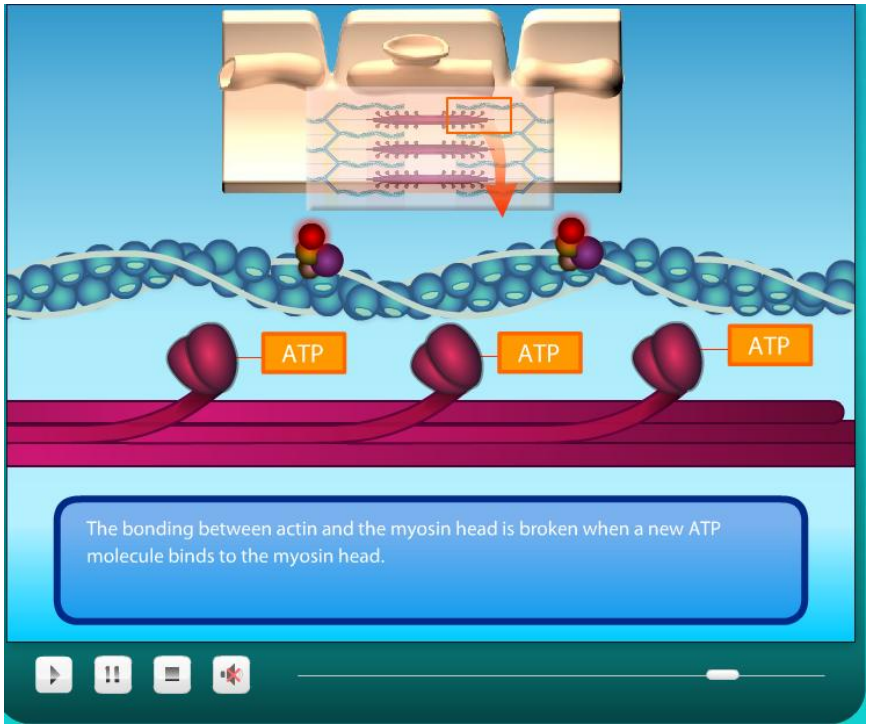


(**Action potential generation**)

By Dr Isabel Hwang
School of Biomedical Sciences

Snapshots of the animations

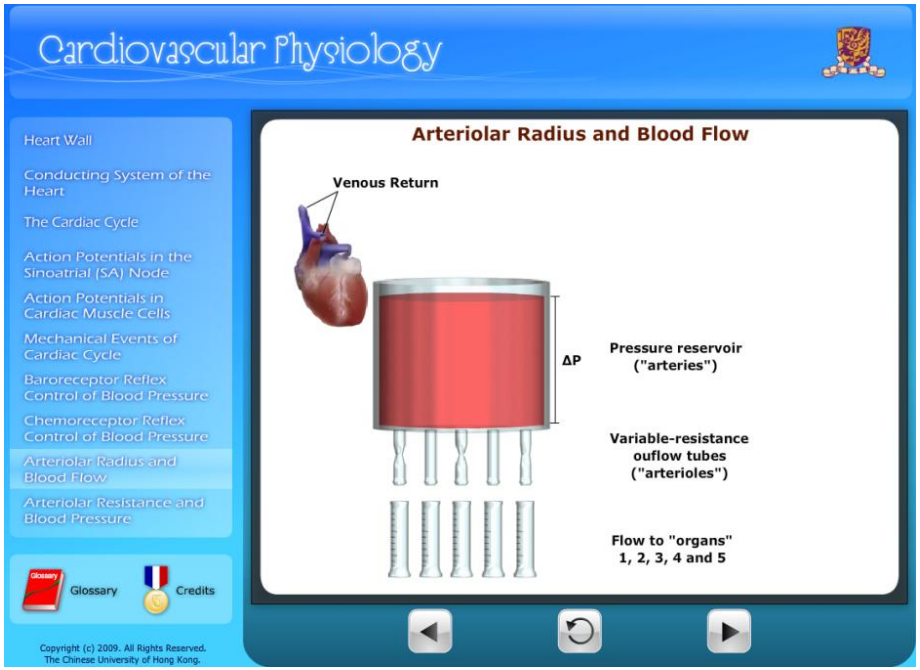


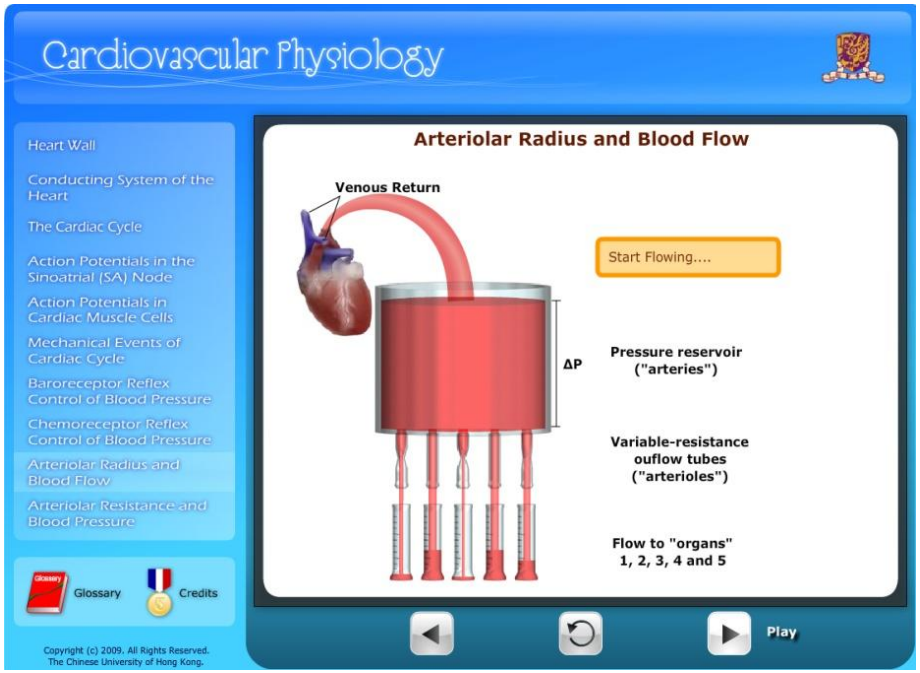


(Skeletal muscle contraction)

By Dr Isabel Hwang
School of Biomedical Sciences

Snapshots of the animations

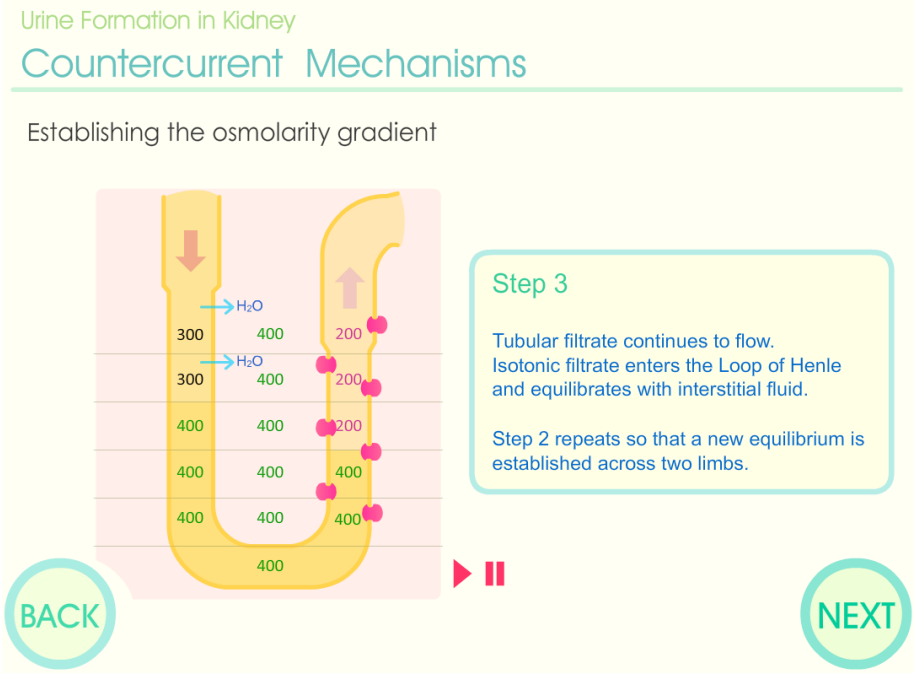


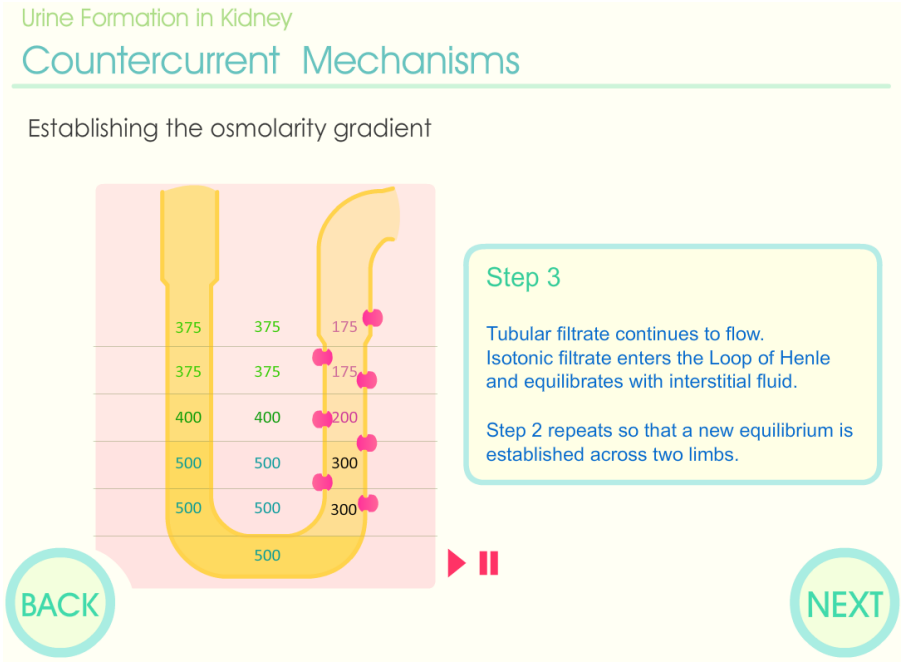


(Distribution of blood flow)

By Dr Isabel Hwang
School of Biomedical Sciences

Snapshots of the animations





(Countercurrent mechanism)

By Dr Isabel Hwang
School of Biomedical Sciences

Student survey – basic information

	1st survey	2nd survey	3rd survey
Date	September 2008 (2008-2009)	September – October, 2009 (2009-2010)	April 2010 (2009-2010)
Student background	**Nursing**, pharmacy, Chinese Medicine & Medicine	**Nursing**, pharmacy, Chinese Medicine & Human Biology	**Nursing** & Chinese Medicine
Number of surveys distributed	269	320	236
Topic of animation	Action potential & Skeletal muscle contraction	Action potential & Skeletal muscle contraction	Cardiovascular physiology

Student survey – quantitative data

Question item	(2008-2009) Action potential (AP) & Skeletal muscle contraction (SMC)			(2009-2010) Action potential (AP) & Skeletal muscle contraction (SMC)			(2009-2010) Cardiovascular physiology		
	Mean (5-point Likert scale)	Number of replies	Response rate	Mean (5-point Likert scale)	Number of replies	Response rate	Mean (5-point Likert scale)	Number of replies	Response rate
The animation are able to explain the concepts clearly	**3.92**	245	91.1%	**4.07**	220	68.8%	**3.94**	113	47.9%
The content on the animations on the whole improved my understanding towards	**3.82 (AP);** **3.79 (SMC)**	245	91.1%	**4.05 (AP);** **4.00 (SMC)**	219 (AP); 218 (SMC)	68.4% (AP); 68.1% (SMC)	**3.90**	113	47.9%

Student survey – qualitative data

The animations were interesting/ could stimulate students' interest (survey data: mentioned in 11 replies in 2008-2009 & 8 replies in 2009-2010)

The animations improved understanding (survey data: mentioned in 10 replies in 2008-2009 & 5 replies in 2009-2010)

The animations provided clear illustration on the subject matter (survey data: mentioned in 16 replies in 2008-2009 & 24 replies in 2009-2010)

The animations were difficult to access (survey data: mentioned in 13 replies in 2008-2009 & 10 replies in 2009-2010) and were slow during running (survey data: mentioned in 8 replies in 2008-2009 & 1 reply in 2009-2010)

Main comments

- **The comments could be grouped into 3 categories:**
  1. Affective function (good graphics)
  2. Cognitive function (easy for students to understand)
  3. Their first choices of learning materials (paper-based or animation-based)

Thank you for your attention.