Online Delivery of Pre-captured Lectures via Echo*360* for Student Learning

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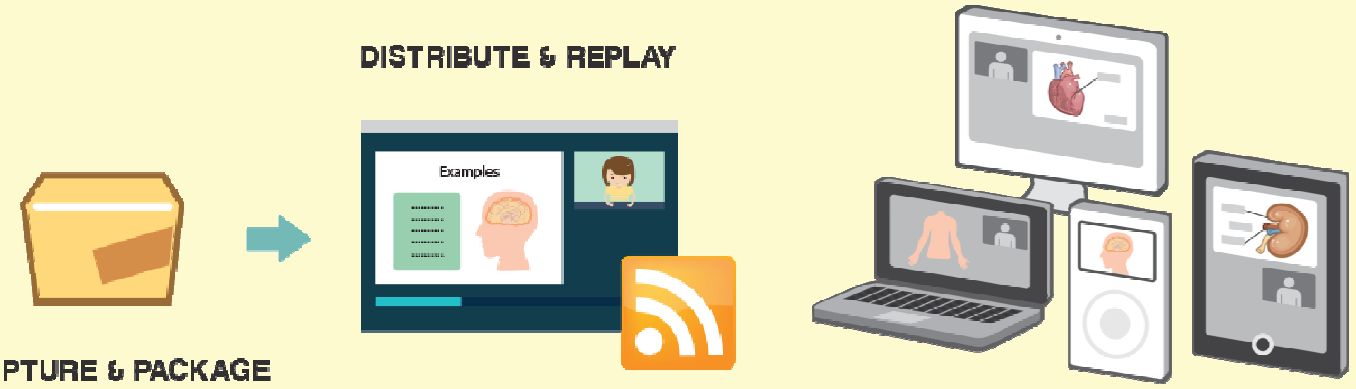
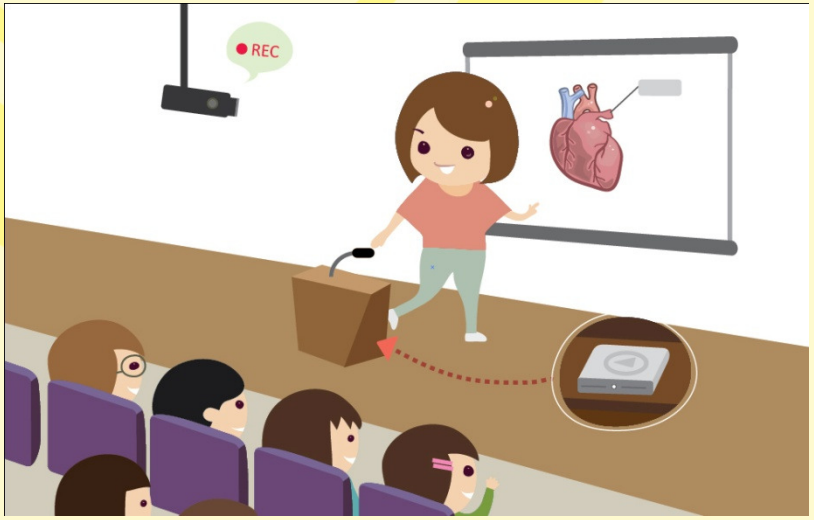


What is Echo360?

- A “playback” technology
- Making lecture content readily accessible
- Capture whatever is on your computer
- Simultaneously record your screen, your voice and classroom visual
- Publish to *Blackboard Learn* platform

Ways to do Echo360

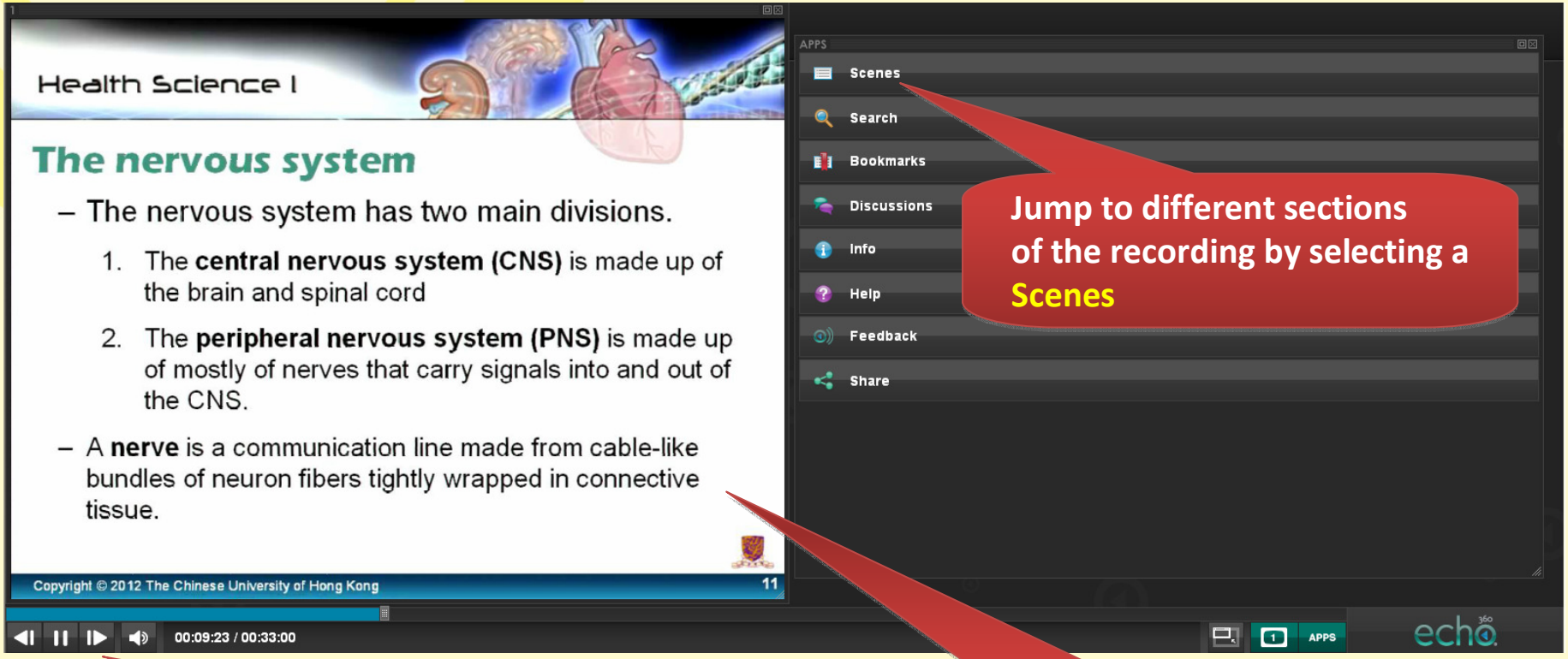
Live recording at lecture theatre



Recording in professional-grade studio

- ***Capture live lectures*** *"or"* ***pre-record in controlled setting***
- Visual and audio recordings viewed via ***rich media*** or ***vodcast files*** (desktop computer, laptop, ipad, android tablets, smart phones etc).
- Viewer can replay, skip, rewind or fast forward

An example of *streamed* lecture online



Why Echo360?

- Year 1 students from **a Master of Nursing program** (~80 students)
- Students are from **heterogeneous background**.

Pre-recordings of lectures

- All were pre-recorded lectures done at summer time of 2011
- Delivered "***after***" class
- A series of 16 lectures in the area of
  - Electrical signal in human nerve cell
  - Skeletal muscle contraction
  - Structure and function of the human heart

Extension to other 4 physiology courses

Table 1. Course information and percentage of recorded lectures in 5 first-year biomedical courses (4 undergraduate and 1 master programmes)

Course Name (Curse Code)	Student Number	Number of Recorded Lecture Hours	Total Number of Lecture Hours	Percentage (%) of Recorded Lecture
Bachelor of Nursing Science (NURS1601)	202	12	20	60
Bachelor of Pharmacy and Bachelor of Biomedical Engineering (PHAR1431)	88	11	26	42
Bachelor of Science (Human Biology & Food and Nutritional Stream) (MEDN3070)	82	8	32	25
Bachelor of Chinese Medicine (BCME1600)	32	12	20	60
Master of Nursing Science (NURS6209)	77	16	35	46

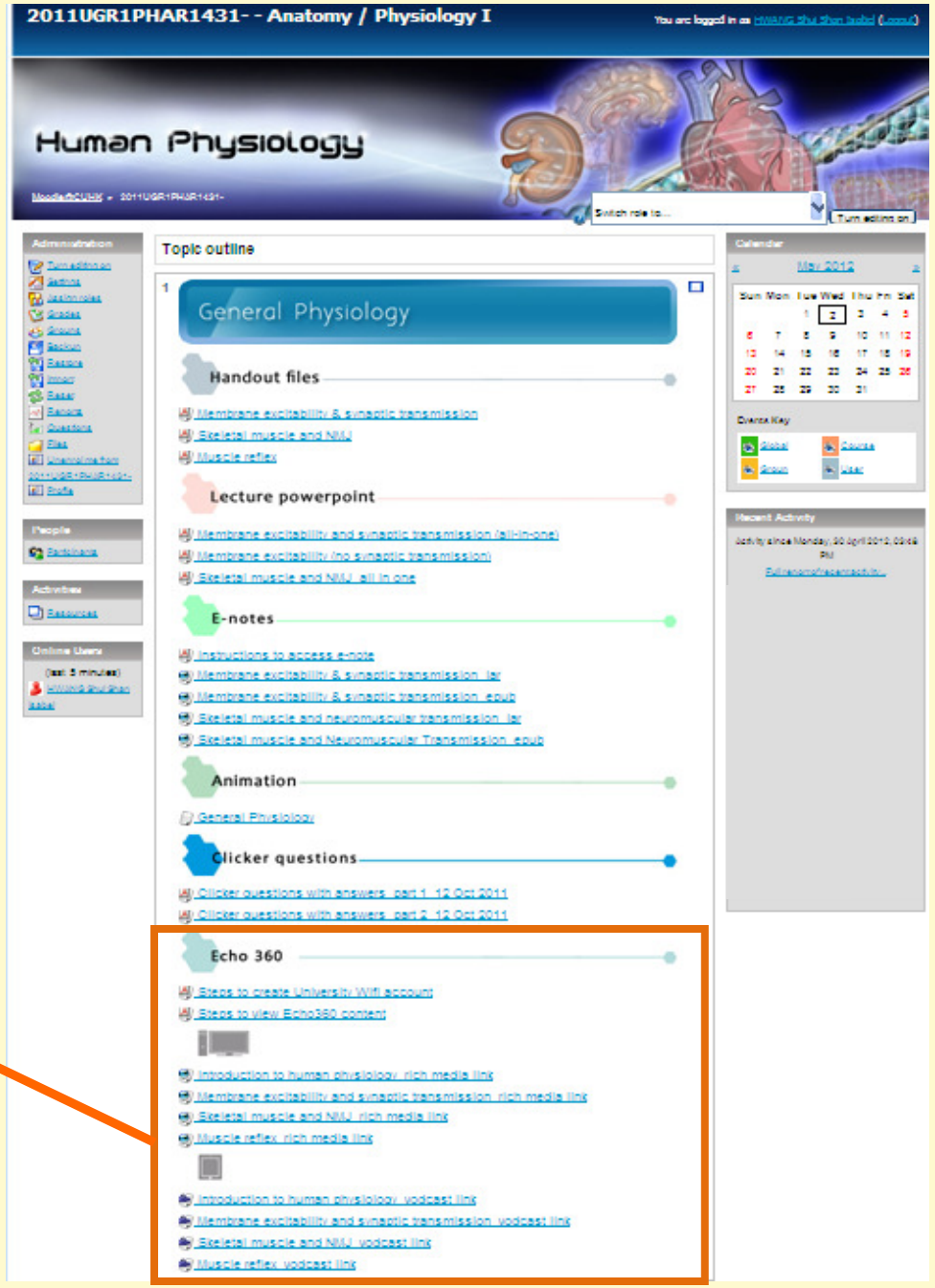
Integration of pre-recorded lectures

Echo 360

- Steps to create University Wifi account
- Steps to view Echo360 content

- Introduction to human physiology_rich media link
- Membrane excitability and synaptic transmission_rich media link
- Skeletal muscle and NMJ_rich media link
- Muscle reflex_rich media link

- Introduction to human physiology_vodcast link
- Membrane excitability and synaptic transmission_vodcast link
- Skeletal muscle and NMJ_vodcast link
- Muscle reflex_vodcast link

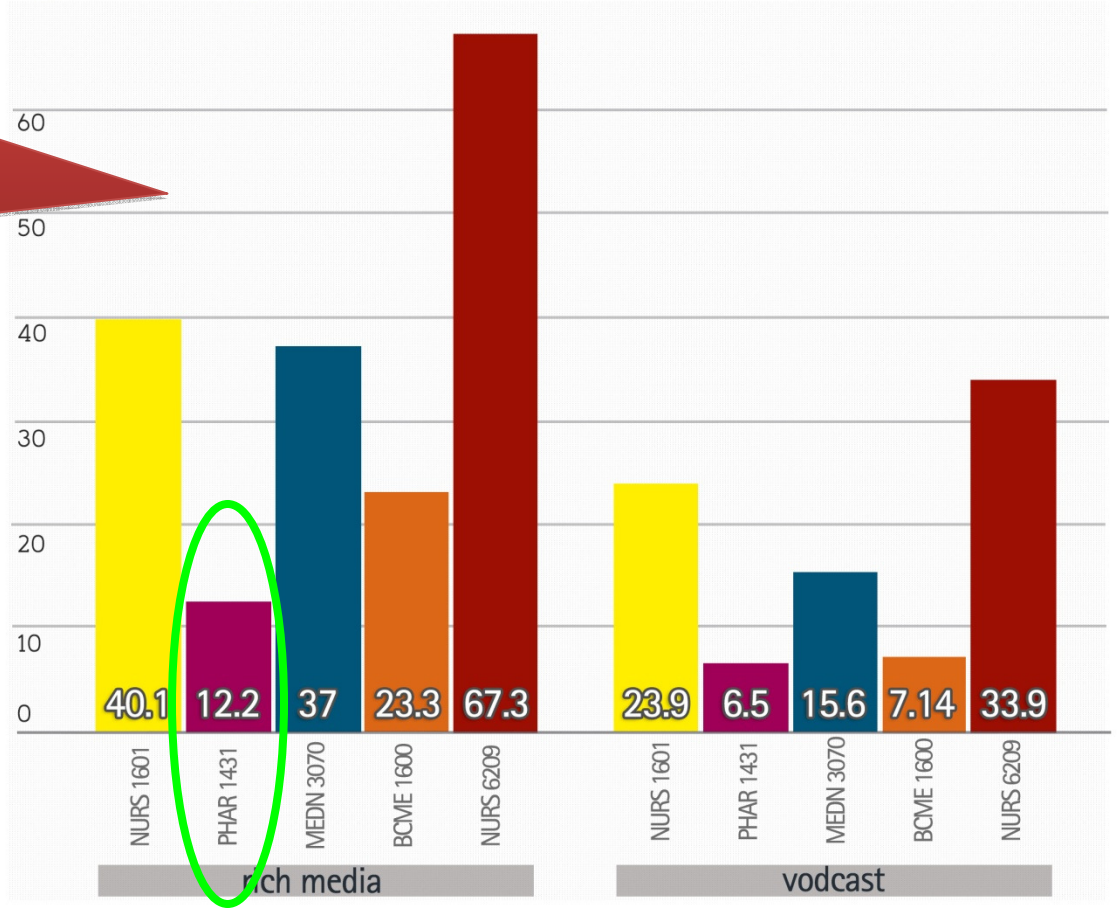


Access rate

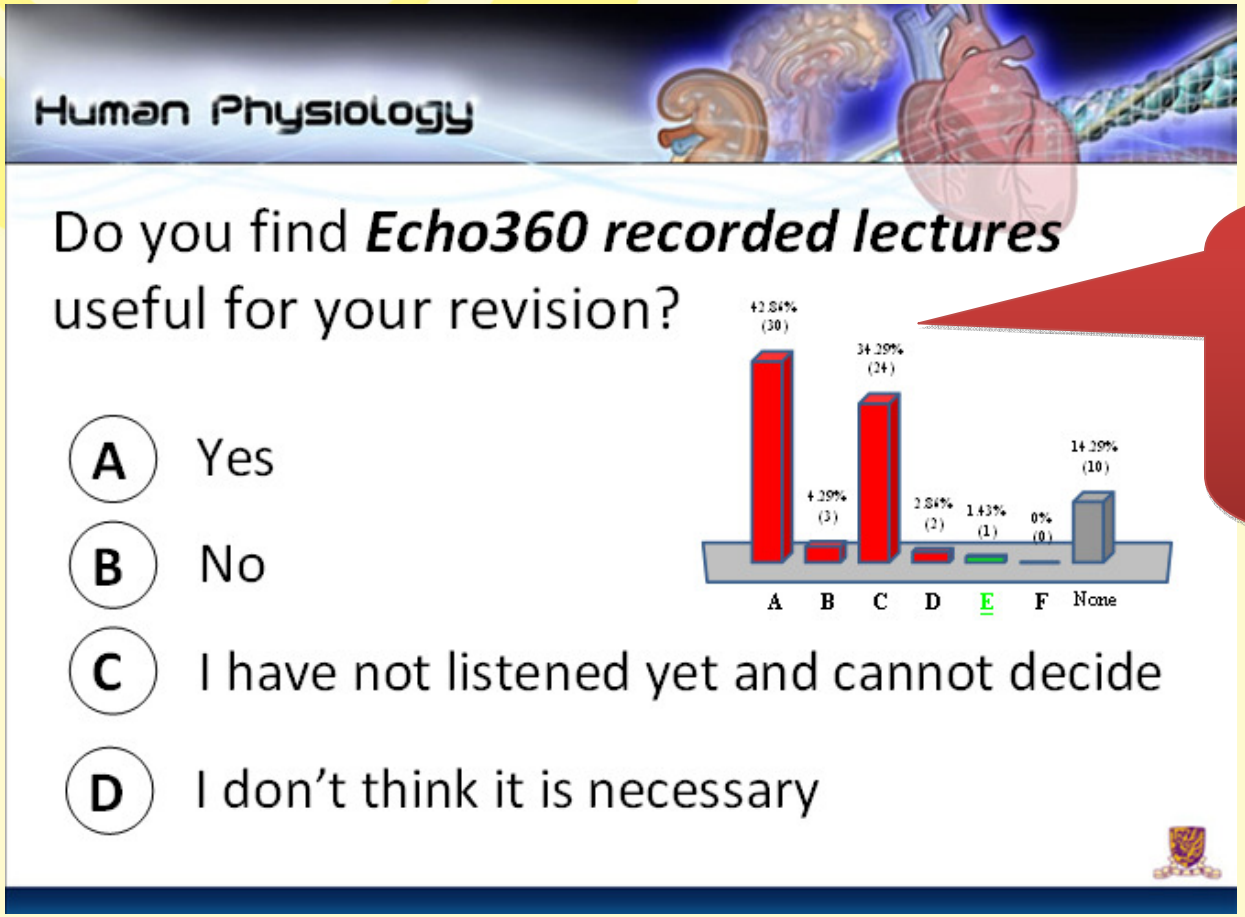
More students were using rich media links than vodcast links in the same course.

Study Findings

Figure 2. Average access rates from students of the 5 Biomedical Courses



Clicker survey: Pharmacy 2012



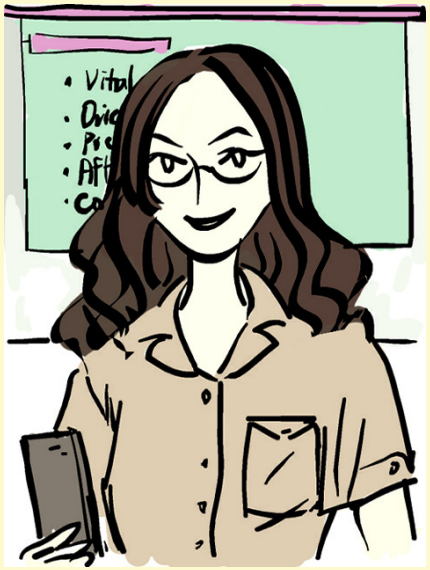
50% **responded agreed Echo360 recorded lecture is useful for self revision.**

Benefits to *Students*

- To revisit lecture recordings for
  - Missing class
  - Self revision
  - Complex concepts and ideas
  - Picking up things missed in class
  - Taking comprehensive notes after lectures
- Simple output formats allows easy viewing
- Flexible and convenient
- Students need not struggle between looking at the slides and taking notes

Benefits to *Teachers*

- Help ***reinforce*** learning objectives and highlight key concepts of a topic
- Provide self-evaluation
- Help improve teaching skills



Difficulties and suggestions?

- Uncommon amongst teachers (system's ease of use?)
- Reservation about recording their own lecture materials (copyright issues?)
- Cost issues (for pre-recording only)
- Possible effects on student attendance

Students' attendance

- Did not show a significant decrease in student attendance rate
  - **Compulsory attendance** in some courses
  - **Live lecture** still confers a number of educational **benefits**:
    - Interaction between classmates and teachers
    - Firsthand information
    - Live discussions
    - Be able to ask questions
    - Meet with others

Other applications

- Prelab talks
- Welcome videos (course introduction)
- Screen capture (demonstrate animations with a step-by-step explanation.)
- Case studies
- Distance learning course

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