



Online Pre-Laboratory Talks Supported by Echo360 - A Flexible Self-Learning Environment

*09-12 Teaching Development Grant funded project

*Team members:

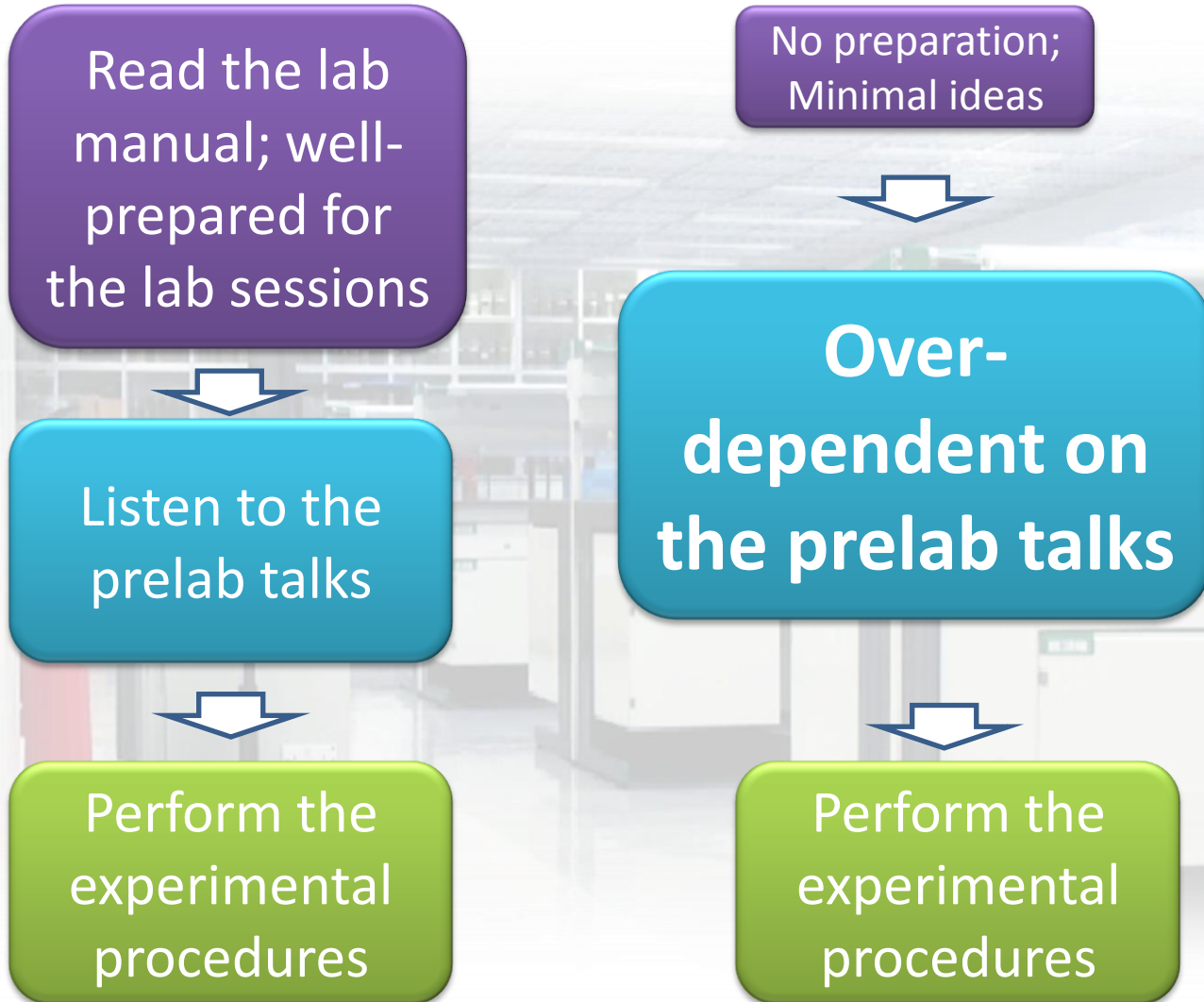
- Dr. Lawrence Chiu (PI)
- Dr. Cherry Chow (Co-I)
- Dr. KC Chung (Co-I)
- Alice Leong (Project coordinator)

Presented by Cherry Chow
Biology Programme, School of Life Sciences

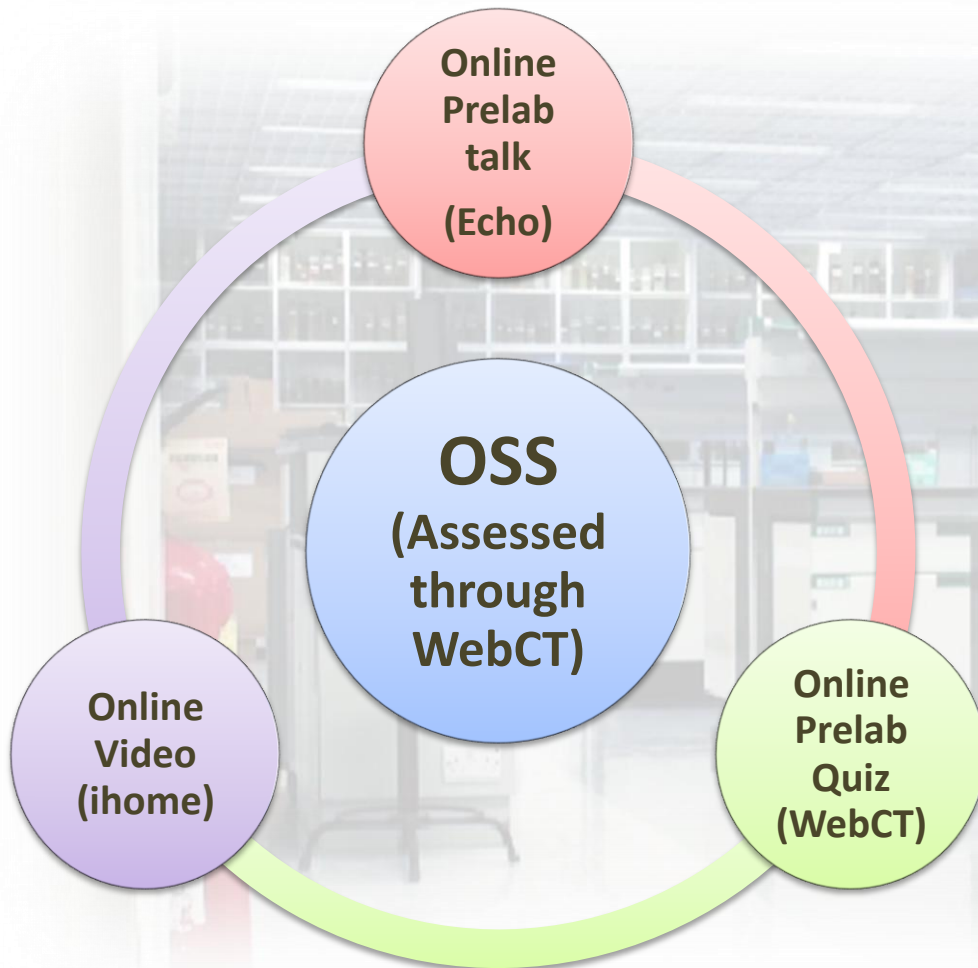
Purposes of Laboratory Classes

- To **learn** and **practice** experimental techniques
- To **apply** knowledge and theory in laboratory studies
 - Kinesthetic learning through **active participation** and **hands-on experience**
- **Pre-lab talks** are important for :
 - Reminding the students **background knowledge**
 - Providing **guidance** for experimental procedures so that the students can **perform the lab safely**

Problems



Our Solution: Online Self-learning System (OSS)



- Objective: To ensure that students **understood** the theories and the experimental procedures **before** attending lab classes
- End-of-term Survey for evaluation and improvement

CUHK 2011-12Term1 - 2011UGR1BIOL3413AL01X1

Your location: Home Page > Prelab learning materials and quizzes > Lab 1 > BIOL3413 - Lab 1 - Presentation

MAY 19, 2011 9:50:00 AM - THE CHINESE UNIVERSITY OF HONG KONG - FI CHIU BUILDING, ITSC TRAINING ROOM 103 - LEONG, ALICE HAU YI
BIOL3413 - Microbiology Laboratory

Microbiology Laboratory

Exercise I: Basic Microbial Techniques

- Safety Rules and Regulations
- Introduction
- A. Fundamental Microbial Techniques
 - (i) Aseptic Technique
 - (ii) Sterilization by Autoclave
- B. Use of Light microscope
- C. Staining Techniques and Microscopic Observation

Prepared by Dr. CM CHOW
Narrated by Jessica Leung

Lab Coordinator:
Dr. CM CHOW (Cherry)

Applications

Exercise - Basic Microbial Techniques

NOIII

00:00:07 / 00:14:14



2011-12Term1 - 2011UGR1BIOL3413AL01X1

Your location: Home Page > Prelab learning materials and quizzes > Lab 1

[BIOL3413 - Lab 1 - Presentation](#)
(same login name and password as those of WebCT)

[Aseptic Technique & Gram Staining \(Low Quality\)](#)
Demonstration Video

[Aseptic Technique & Gram Staining \(High Quality\)](#)
Demonstration Video

[\[1\] Safety & Aseptic Technique](#)
The PDF of the prelabtalk

[Reminder for Lab 1SV](#)
NEW
Bring the hardcopy to the lab session

[Aseptic Technique & Gram Staining \(Low Quality\)](#)
Demonstration Video

[BIOL3413 Lab1 Prelab talk Quiz](#)
You should finish the quiz before the lab session
Read the instructions herein before start

[BIOL3413 Ex 1 report 2011SV](#)
NEW
Bring the hardcopy to the lab session

And then add a few drops of Gram Iodine and let it sit for 1 minute

CUHK BIOLOGY

Aseptic Technique & Gram Staining

"Courseware" to revise the basic concepts of aseptic technique and the flow hood used in research laboratories.

CUHK.edu.hk

BIOL3413 Lab1 Prelab talk Quiz

Demo Student

Started: September 3, 2011 12:03 PM

Questions: 10

Finish Save All Help

Instructions

You should

1. Finish answering
2. "Save all" (save your answers)
3. "Finish" (for submission & grading)
4. View your submission (see the marks you earn, the answers and feedback!)
5. Redo the quiz if you want!

1. (Points: 10)

Which of the following is NOT an appropriate behaviour during laboratory class?

- a. Wear gloves while using flame
- b. Wash your hands before using the washroom during the lab
- c. Clean your lab area with the appropriate disinfectant before and after each use
- d. Wear long trousers, shoes and lab coat
- e. Be concentrated

Time 12:02:16

Allowed -----

Remaining -----

Question Status

Unanswered

Answer not saved

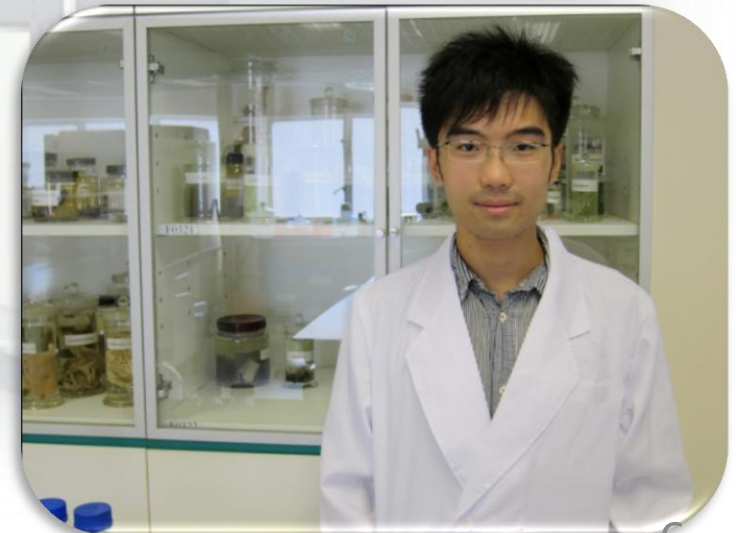
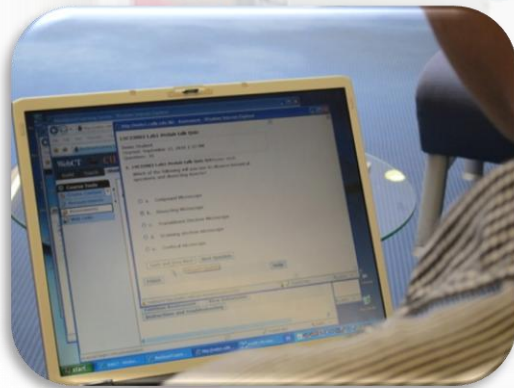
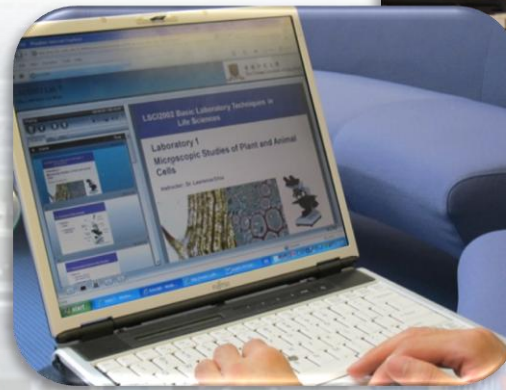
Answered

1	2	3	4
6	7	8	9

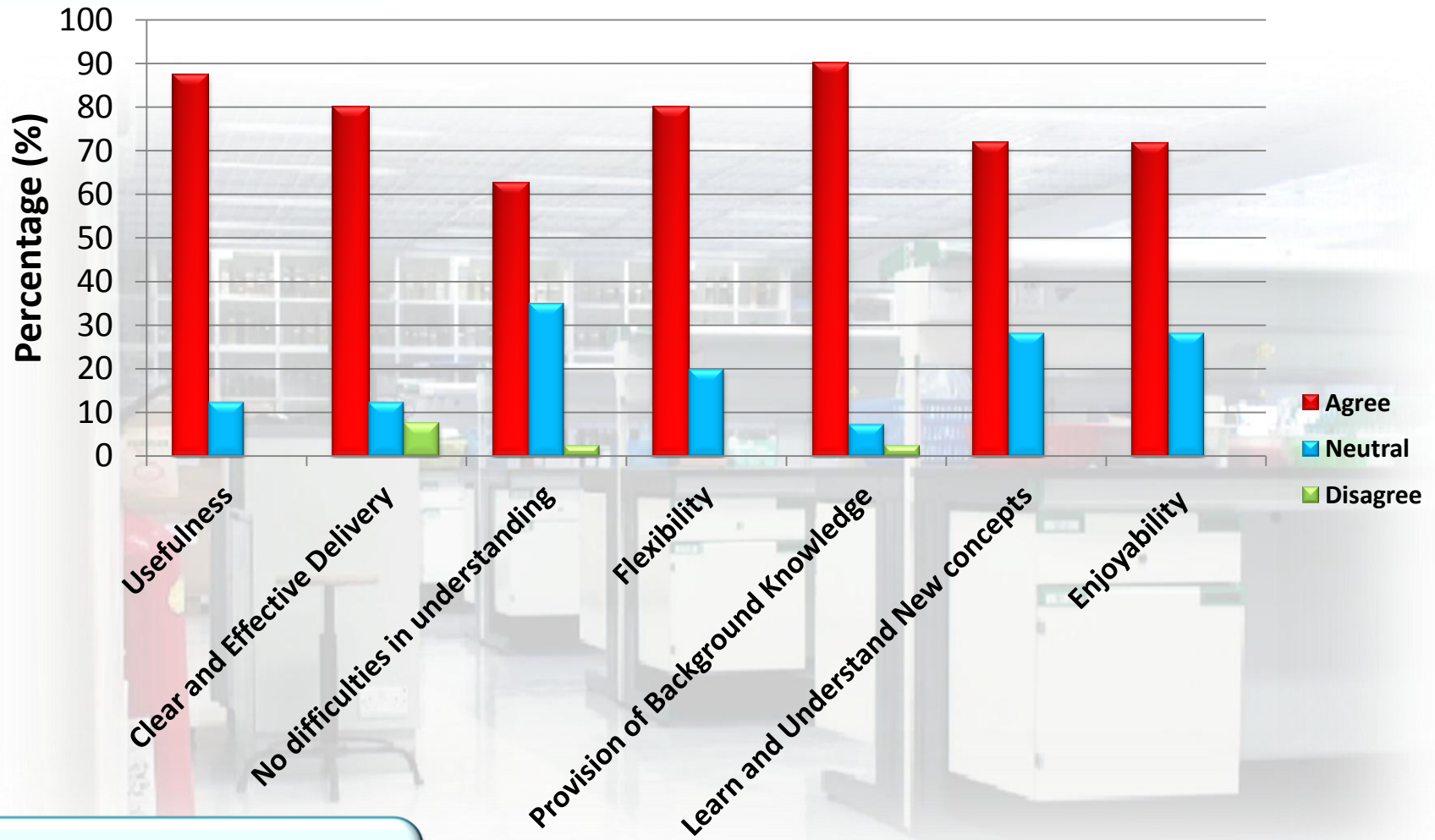
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Before each lab...

- Students have to study the pre-lab talk and answer the questions on WebCT



Student's Satisfaction to OSS for BIOL3413 Microbiology Lab (2011-12)



**Students'
Feedback**

n= 43 (54% response rate)

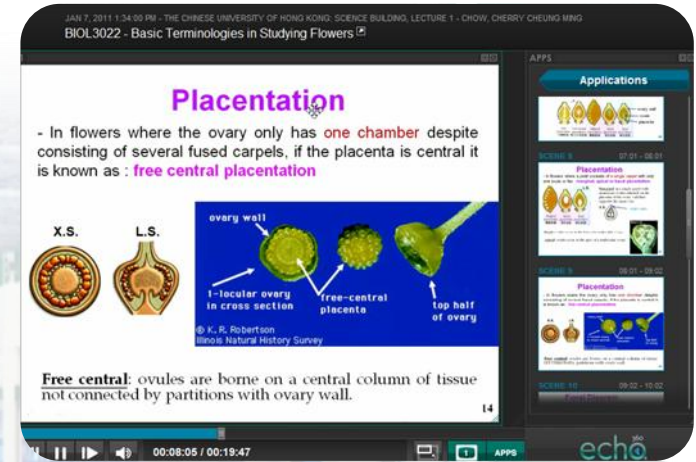
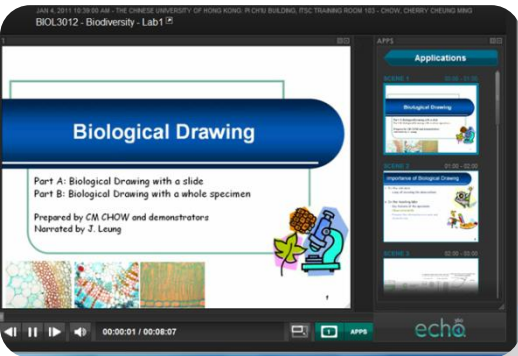
Our Coverage

■ 1st and 2nd year laboratory courses:

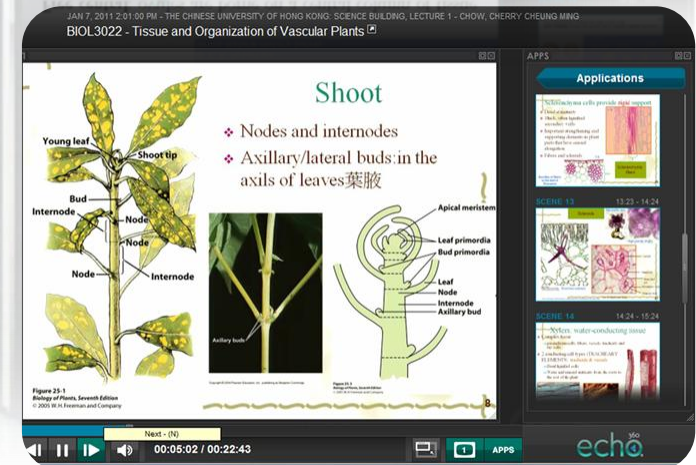
Year1	LSCI2002 (co-organized with BCHE)* Basic Laboratory Techniques in Life Sciences BIOL2213 Ecology Laboratory
Year2	BIOL3012* Biodiversity Laboratory I BIOL3022* Biodiversity Laboratory II BIOL3413 Microbiology Laboratory BIOL4012 Field and Environmental Biology

*Compulsory Course

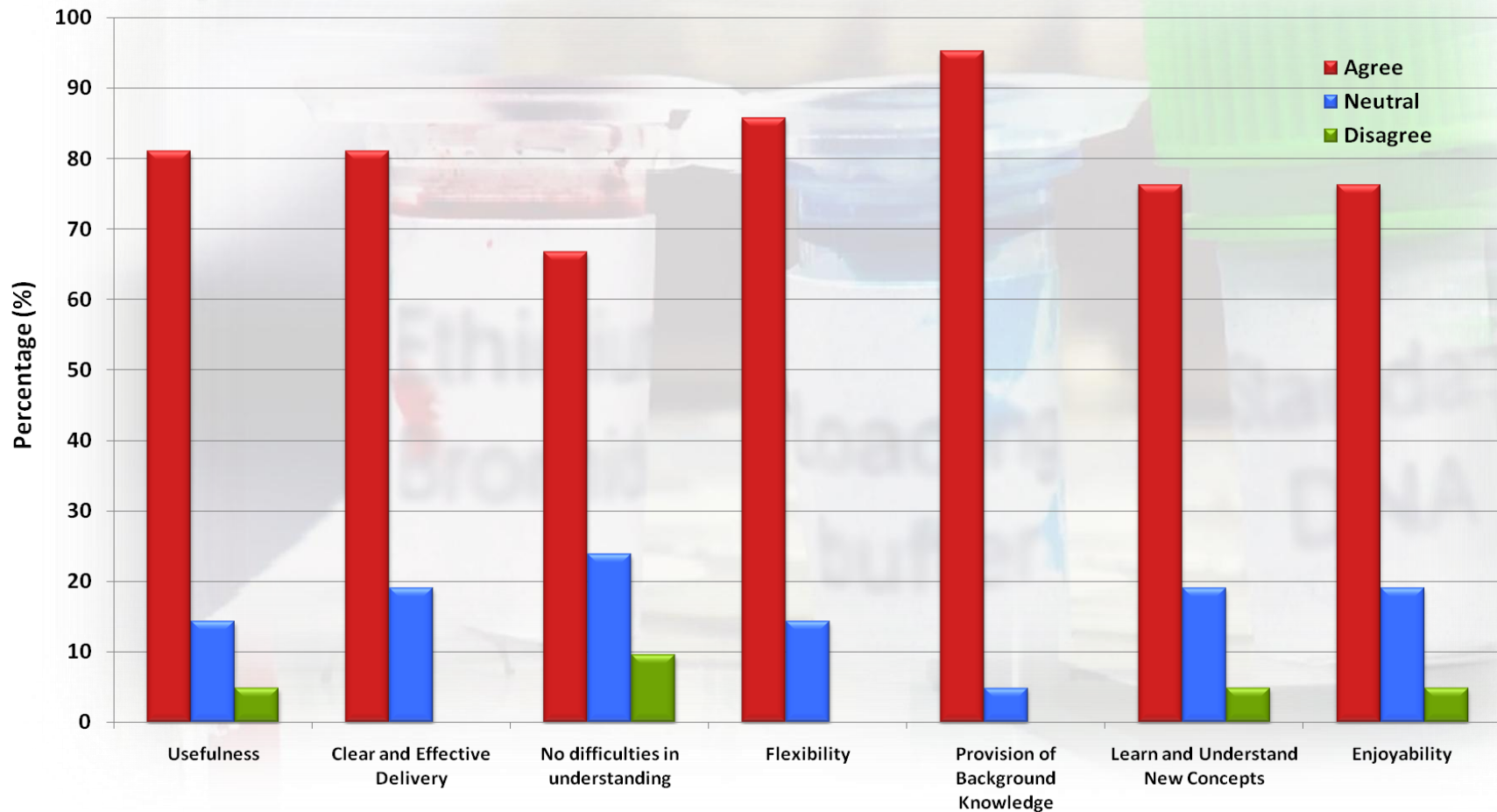
OSS for factual information: BIOL3012 & BIOL 3022 Biodiversity laboratories



- Self-learning materials that are **NOT** covered by the lab sessions
 - Rules e.g. Biology Drawing
 - Definitions and explanations of new terminologies
 - Online/ Class Quizzes



Student's Satisfaction to OSS for BIOL3022 Biodiversity Lab (2010-11)



OSS for Large Classes: LSCI2002 & BIOL2213

- **Broad based admission**
 - Over 150 students
 - Multiple sessions
 - Heavy workload for teachers
- **OSS fully launched 10/11**
 - LSCI2002 Basic Laboratory Techniques– 4 Labs
 - BIOL2213 Ecology Laboratory– 5 Labs
 - Hosted through echo360
 - WebCT pre-class quizzes

LSCI2002 Basic Laboratory Techniques in
Life Sciences

Laboratory 1
**Microscopic Studies of Plant and Animal
Cells**

Instructor: Dr. Lawrence Chiu



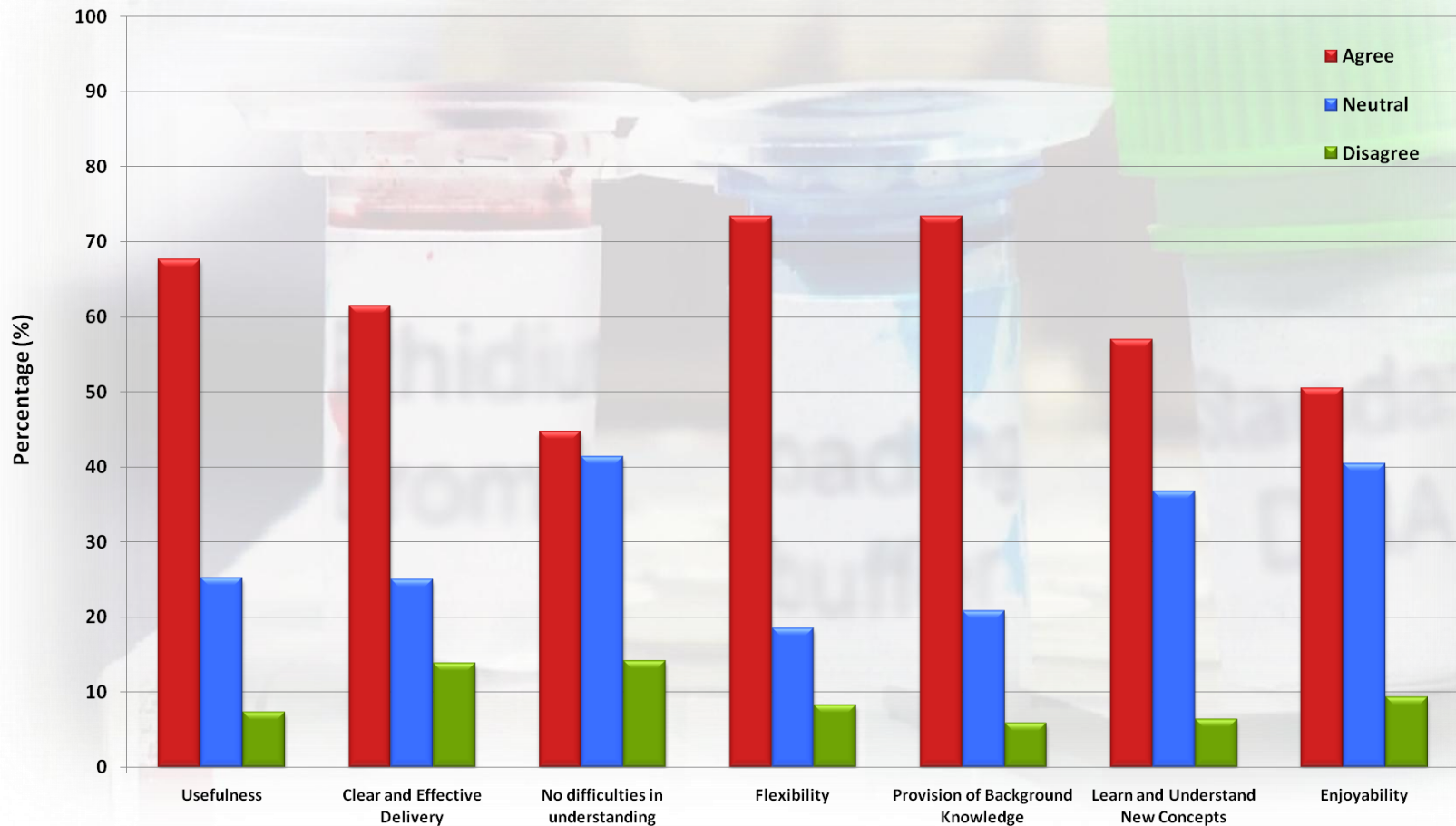
BIOL 2213 Ecology Laboratory

Lab 5 Behavioral Ecology



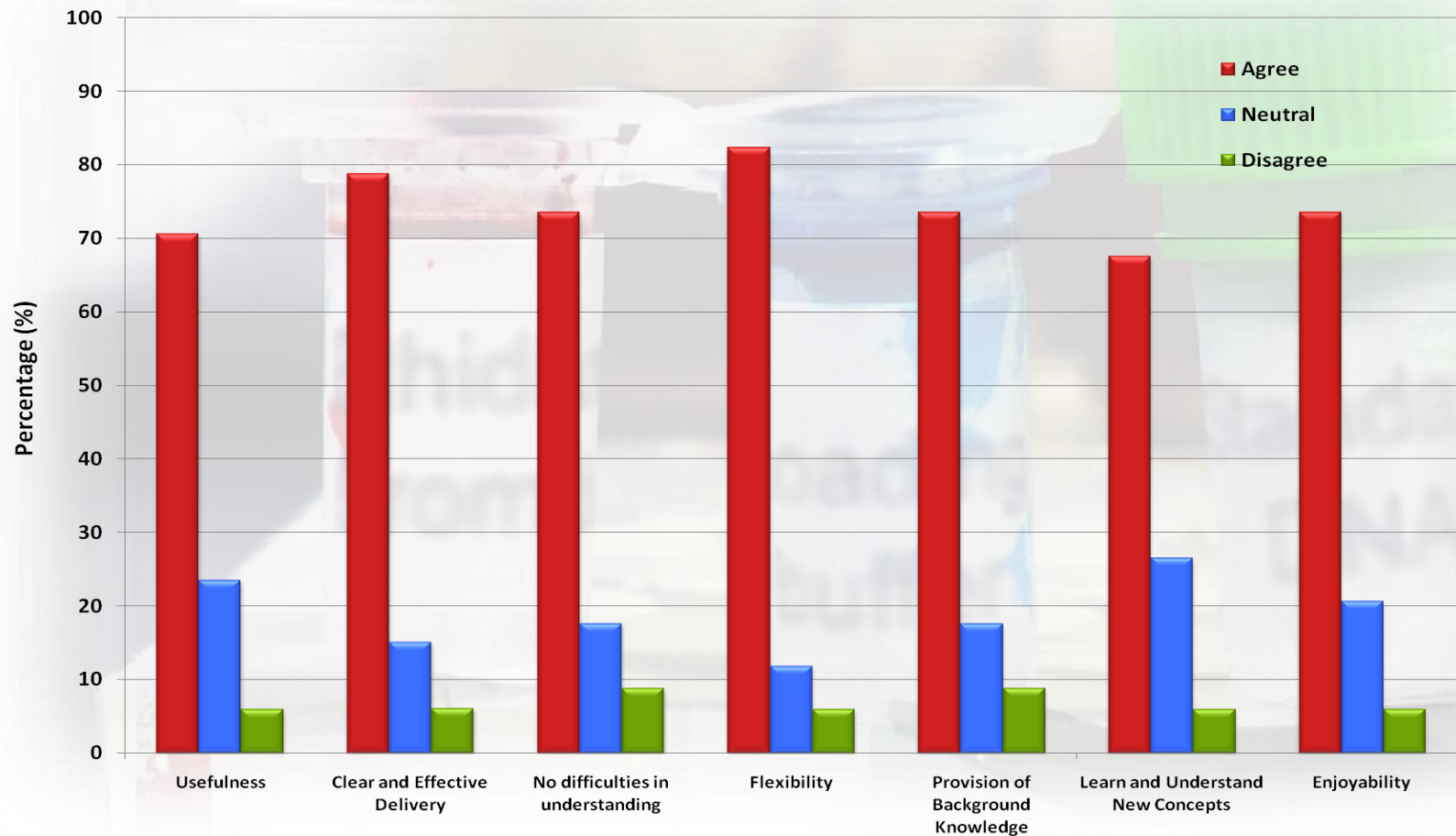
Student's Satisfaction to OSS for LSCI2002 Basic Laboratory Techniques (2010-11)

Overall Level of Students' Satisfaction to OSS for LSCI2002



Student's Satisfaction to OSS for BIOL2213 Ecology (2010-11)

Overall Level of Students' Satisfaction to OSS for BIOL2213



Videos: BIOL3413, BIOL3022 & BIOL 4012

- BIOL3413

- Videos for demonstrating experimental procedures



- BIOL3022

- Videos for showing the habitats of the organisms
- Videos for guiding the dissection procedures step-by-step



- BIOL4012

- Tutorial for revision on the identification of animal species before field trip

OSS: elevating teaching quality by...

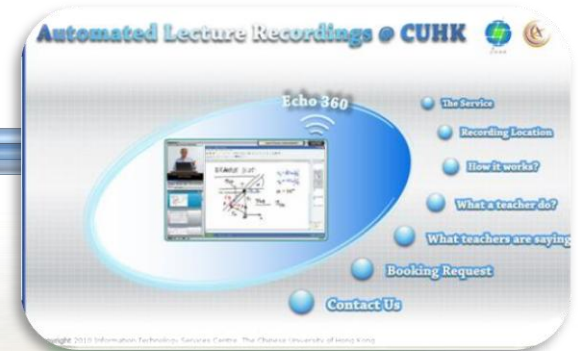
- Providing motivation for student to learn
 - more interesting **multimedia** learning material
 - grade contributing **quizzes**
- Encouraging more **active involvement** of the student in the lab sessions
- Saving more class time for **discussions** on students' enquiries
- **Synergistic cooperation** between instructors and students in the preparation of the project
- More importantly...
 - Encouraging **self-motivated learning** towards a **life-time learning** habit



Our Experience with Echo360

Preparation

- Video-recorded the pre-lab talks performed by instructors
 - **Booking request: SCL1 (FREE!)**
- Developed the **scripts** according to the recorded videos
 - Instructor-students effort
- Recording by **native English speaker**
 - **Booking request: ITSC Training Room 103, Pi Ch'iu Building (HK\$500/hr)**
- Echo-hosted version available
- Editing through **ITSC**
- The audio-equipped presentation is ready on the **internet** for students!



Benefits from the features of the **echo360 system**

- Convenient production of the **audio-equipped pre-lab presentations** hosted on the internet as flash videos
 - vs Streaming capacity of other hosting method, e.g. ihome
- Flexibility – **Self-pacing learning**
- Capability – **Unlimited replays** for clarification and revision
- Possibility in **mobile learning** – Podcast
 - Audio and video of the presentation can be downloaded into mobile devices

From this experience...

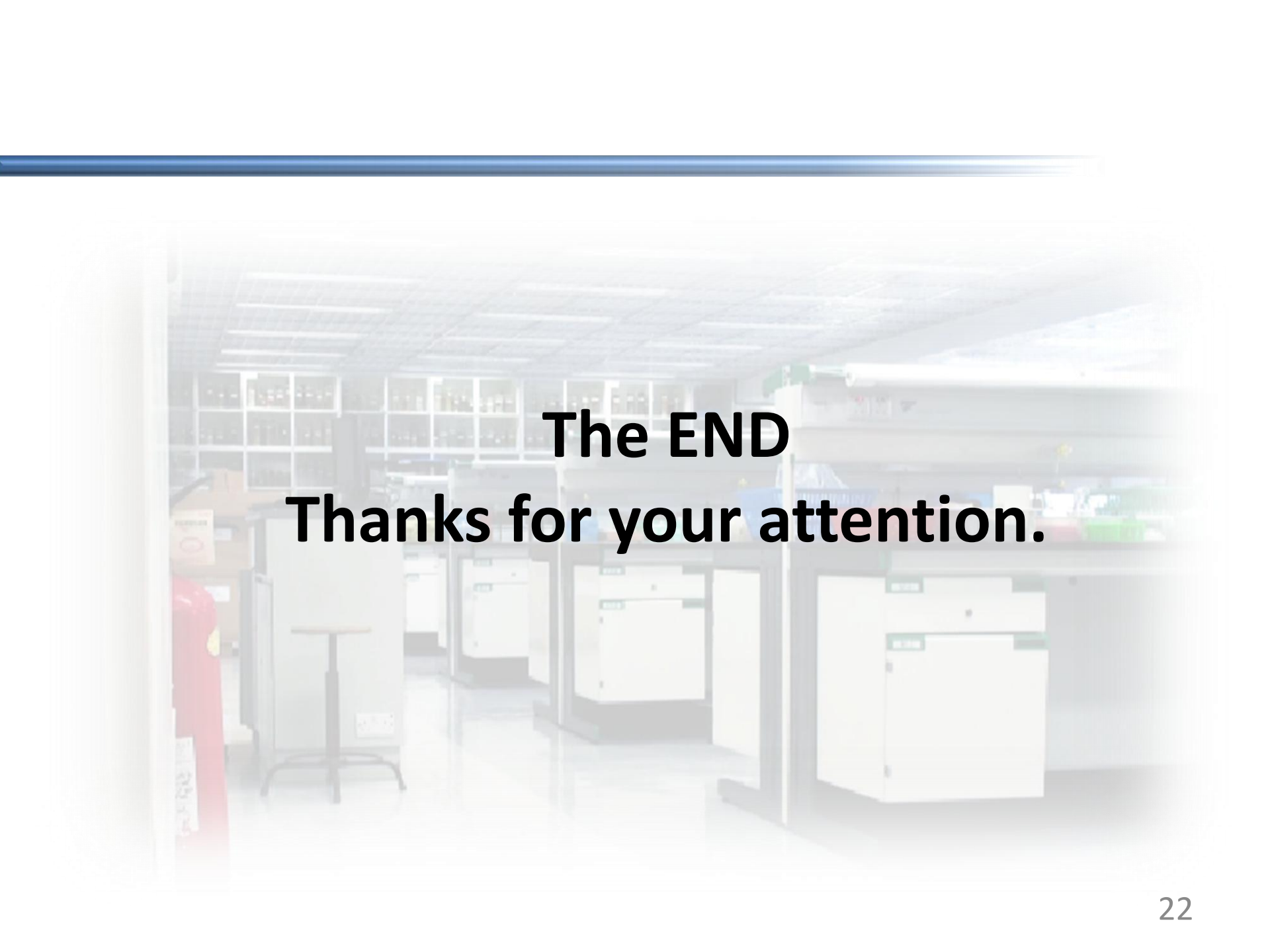
- **Positive feedback** was received from the students
- echo360
 - Pros: Convenient way to prepare online pre-lab lectures
 - Cons: Limitation on streaming capacity
- The learning in laboratory is **more efficient** with OSS
- We feel that this teaching and learning method would suit other Departments and Programmes with laboratory courses as well

Showcase

BIOL 2213 Ecology Laboratory

Lab 5 Behavioral Ecology





The END
Thanks for your attention.