Impact analysis of using OpenCourseWare to flip the classroom – TMU examples

Hsu-Tien (Marian) Wan
Office of Biomedical Informatics
Taipei Medical University, TAIWAN

Acknowledgement:

Taipei Medical University (TMU)

Learning Technology in TMU

誠樸 · 閎懷 · 卓越 · 創新

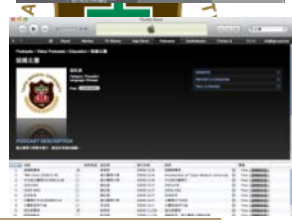
Blended Learning Environment

- In-class
- E-learning
  - synchronous
  - asynchronous

- IRS
- Self-recording tools
- E- classrooms

Tele-Conferencing
Webcast

LMS
Podcast
OCW



TMU OCW Site

- Installed on 2007/7

- Ubuntu 4.1.2
- Python 2.4.4
- Zope 2.9.6
- Plone 2.5.1
- eduCommons 2.3.1

http://ocw.tmu.edu.tw

2014/2: 82 courses

臺北醫學大學
TAIPEI MEDICAL UNIVERSITY

Current Status in TMU

- Colleges & programs
  - 7 colleges
  - 13 undergraduate programs + 24 graduate programs
- Students
  - Mostly medical or health science majors
  - Approx. 6000 students/year
  - Unders vs. graduates: 2:1
- Courses
  - *More than 1400 courses/semester*
  - *Center for General Education:* >250 courses/semester

Courses Using Opencourseware in TMU

- Undergraduate course
  - TMU: Basic Computer Concepts
  - Harvard: Computer Science E-1
  - Since Fall, 2007
- Graduate course
  - TMU: Health information systems to improve quality of care in resource poor settings
  - MIT: Innovative in Global Health Informatics
  - Since Spring, 2012

Basic Computer Concept [Course Topics]

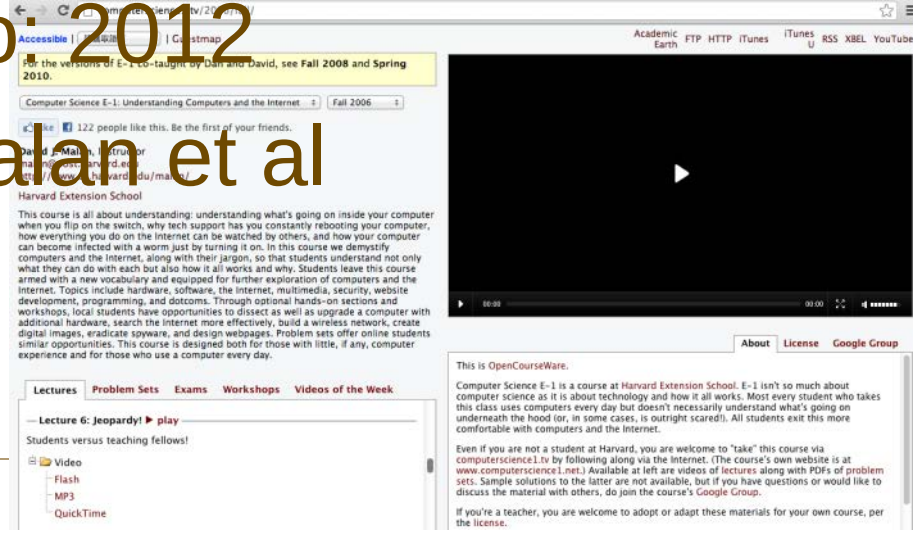
Introductions to:

- Numbering system & binary logic
- Programming language & data structure
- Multimedia
- Network & WWW
- Computer hardware
- Operating system
- Network security

Computer Science E-1: Understanding Computers and the Internet

誠樸 · 閎懷 · 卓越 · 創新

- Harvard Extension School
- Filmed in Cambridge, Massachusetts
- First videos: September 2006 – January 2007.
- Newest updated video: 2012
- Instructor: David J. Malan et al

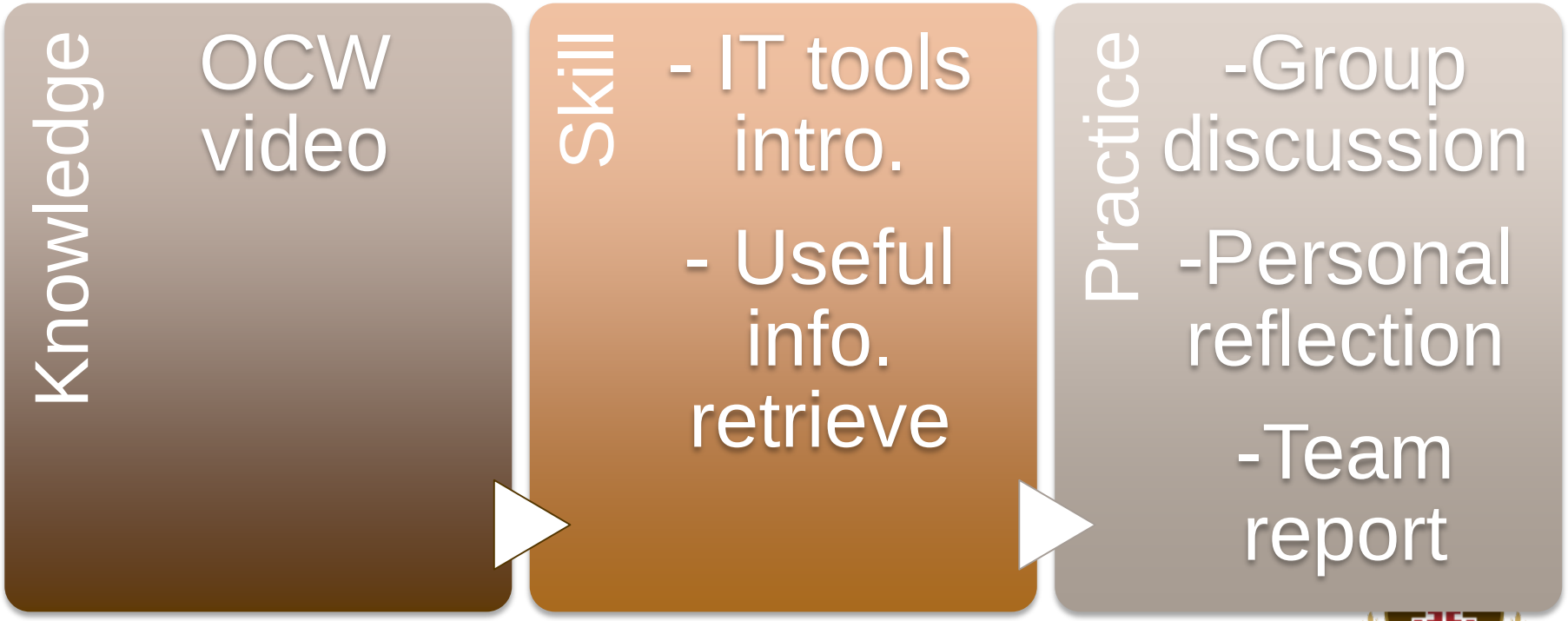


Why E-1?

- Full video content in 2007
- THE “Harvard”
- Fits for entry-level undergraduates
- Practical enough
- Interesting

Photo: E-1 video screenshot

Basic Computer Concept [Flipped classroom design]



Basic Computer Concept [schedule]

誠樸 · 閎懷 · 卓越 · 創新

Topic	Practice
Introduction to the course	Platform function
Hardware (2 weeks)	Info. retrieve
Software	Personal reflection
Internet (2 weeks)	Team discussion
*Surprise	Team discussion
Multimedia	IT tools try out
Security (2 weeks)	Team discussion
OpenCourseware	Personal reflection
Team Project Presentations	Team report + peer review

TAIPEI MEDICAL UNIVERSITY
1960
臺北醫學大學
TAIPEI MEDICAL UNIVERSITY

Platforms & Tools

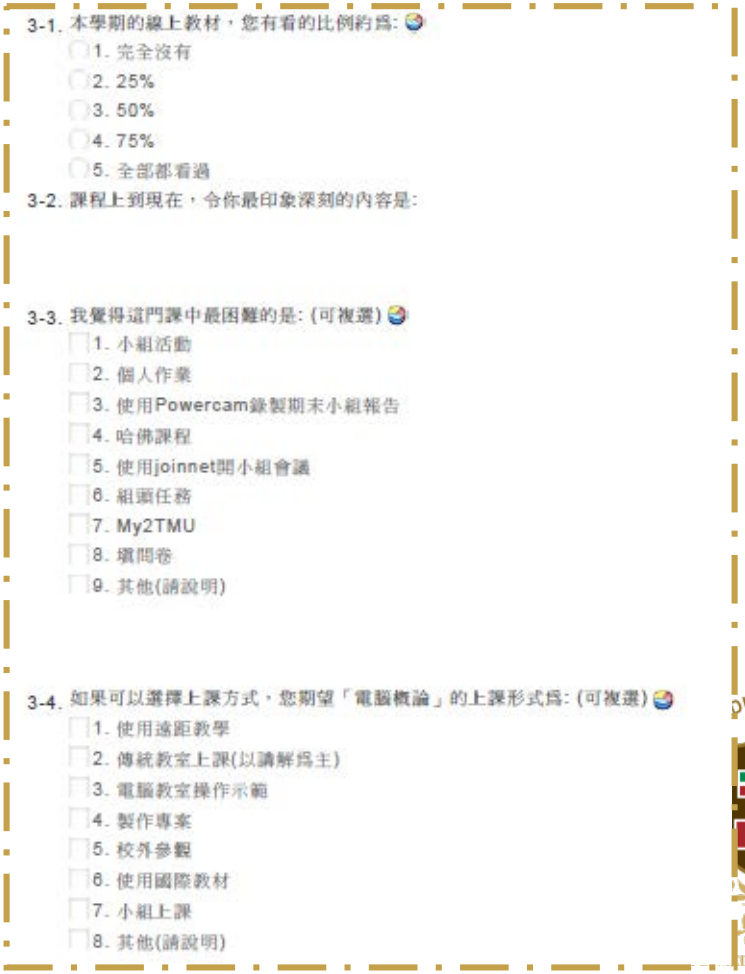
- Asynchronous LMS: MyTMU, My2TMU, XMS
  - Lecture notes & homework
  - Quiz
  - Survey or Vote
  - Forum
  - Wiki
- Synchronous LMS: JoinNet®
- Content recording: Powercam®

Student Assessment

- Personal essays
- Team activities
- Team project presentation
- Peer review
- Online participation

Evaluation

- Regular course survey (Center for General Education)
- E-learning survey



3-1. 本學期的線上教材，您有看的比例約為:
- 1. 完全沒有
- 2. 25%
- 3. 50%
- 4. 75%
- 5. 全部都看過

3-2. 課程上到現在，令你最印象深刻的內容是:

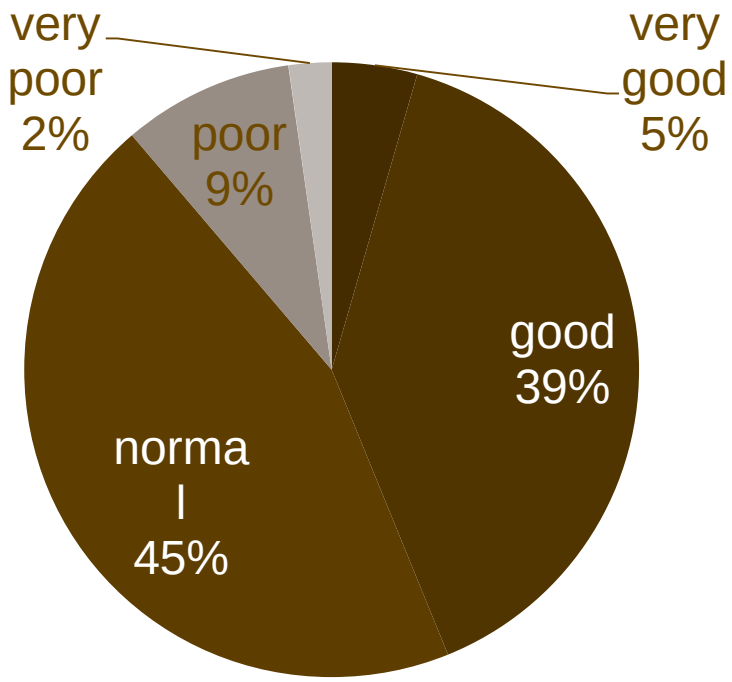
3-3. 我覺得這門課中最困難的是: (可複選)
- 1. 小組活動
- 2. 個人作業
- 3. 使用Powercam錄製期末小組報告
- 4. 哈佛課程
- 5. 使用joinnet開小組會議
- 6. 組頭任務
- 7. My2TMU
- 8. 填問卷
- 9. 其他(請說明)

3-4. 如果可以選擇上課方式，您期望「電腦概論」的上課形式為: (可複選)
- 1. 使用遠距教學
- 2. 傳統教室上課(以講解為主)
- 3. 電腦教室操作示範
- 4. 製作專案
- 5. 校外參觀
- 6. 使用國際教材
- 7. 小組上課
- 8. 其他(請說明)

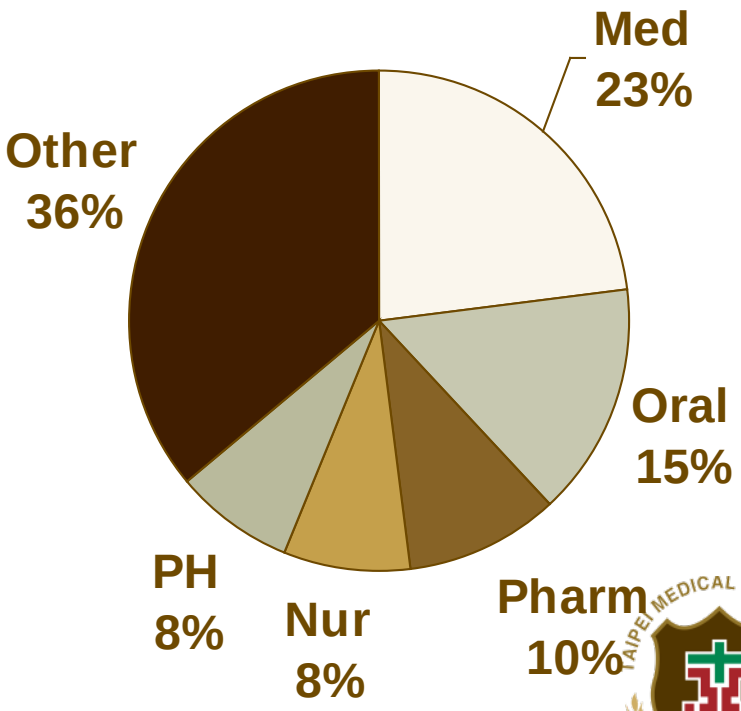
Students Enrolled

(BCC Course, sampling from 1 semester)

誠樸 · 閎懷 · 卓越 · 創新



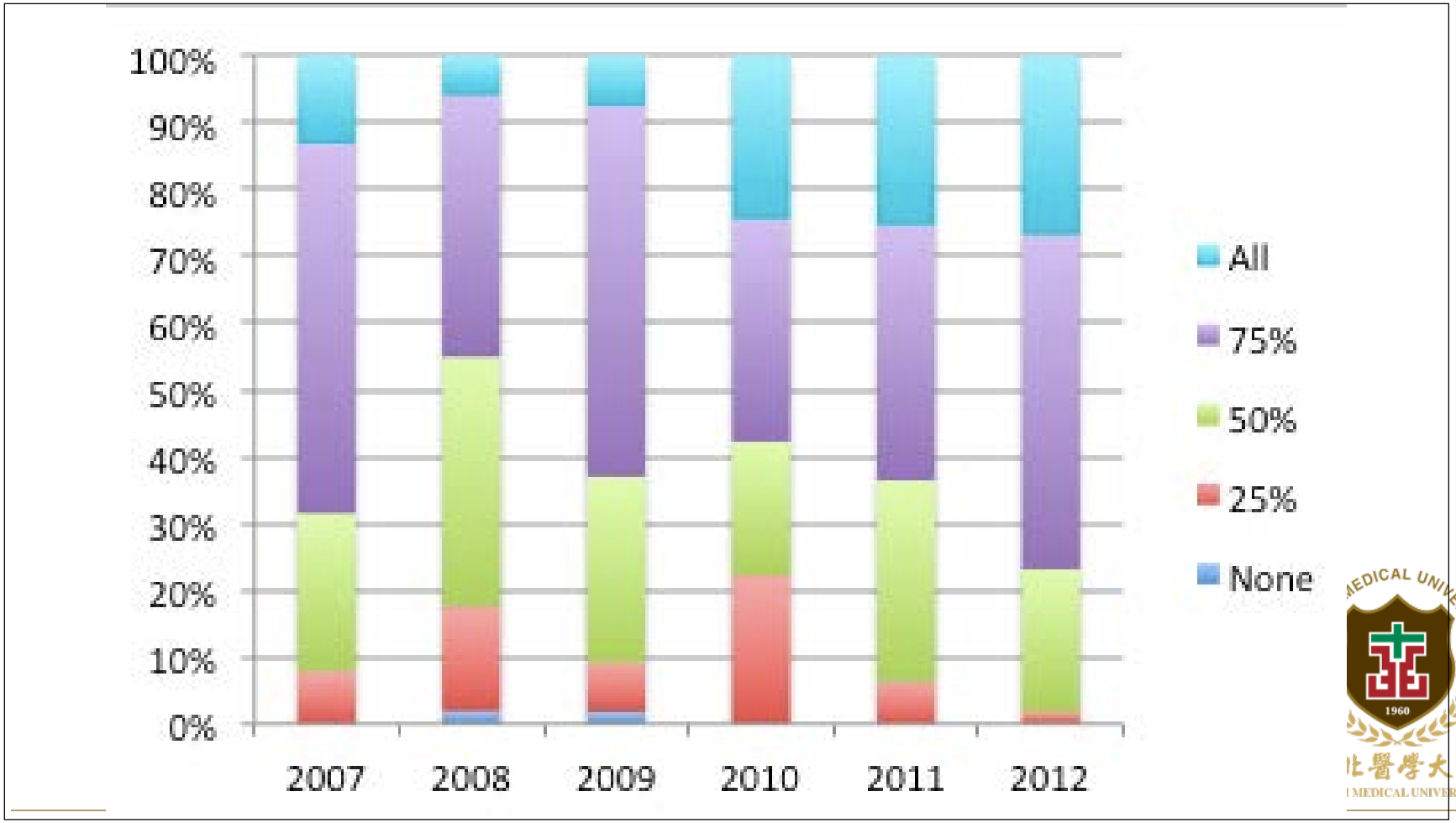
Computer skill
(Self-evaluation)



Majors

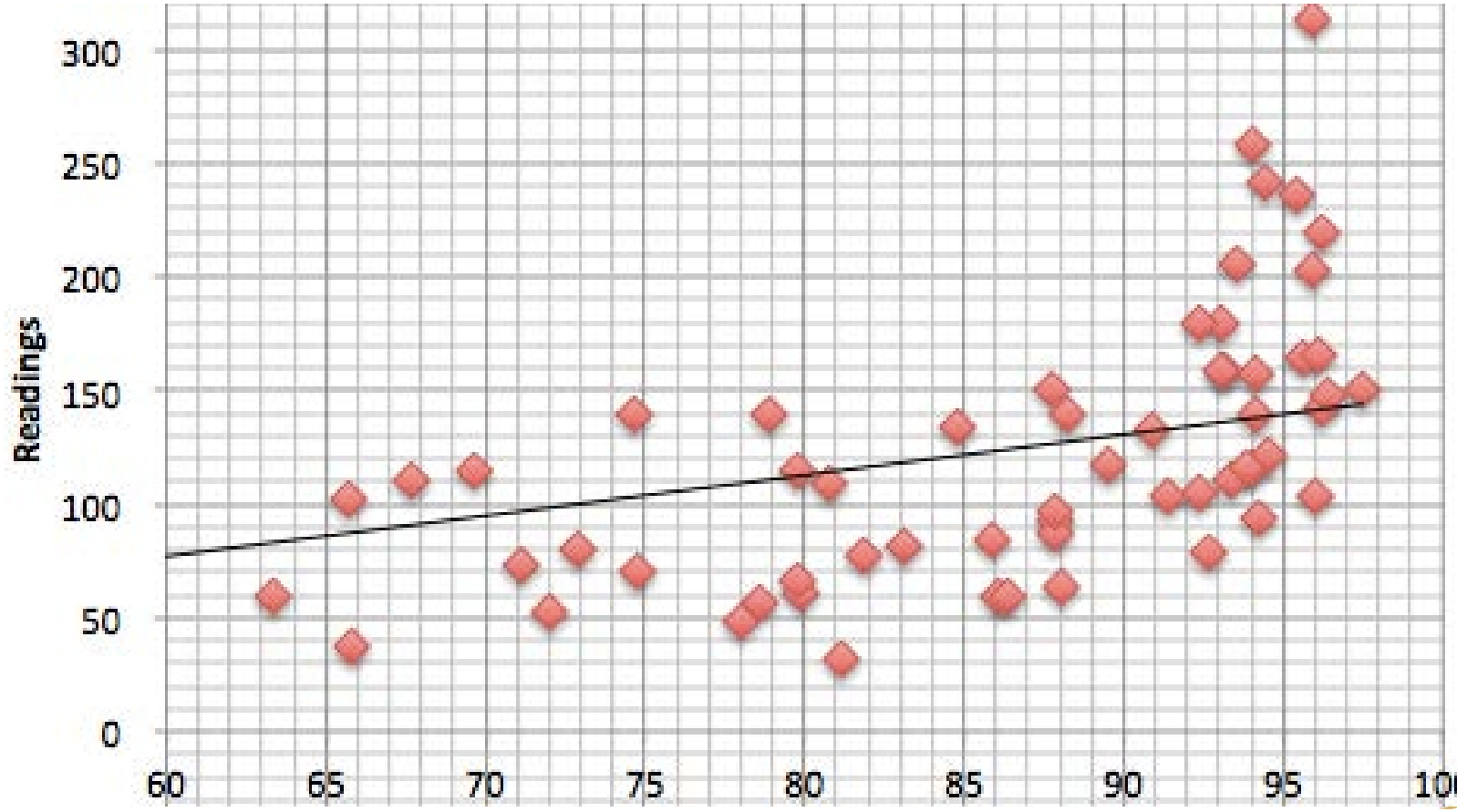
臺北醫學大學
TAIPEI MEDICAL UNIVERSITY

Videos students viewed each year



Students' readings vs. final score

(BCC Course of 2012)



Students' feedback

- 40% like this course to be an e-learning course. Time-flexibility and activity-diversity are two major benefits.
- Less than 10% of students like the English-speaking OCW.
- More than 90% of students thought that they had learnt and would like to recommend this course to others.

Student/Faculty Efforts

	Discussions	Readings
Students average	17.3	116.3
Teacher	150	480
S/T Ratio	8.7x	4.1x

Group competition example: using team discussion corner

Question

- Post question in team corner
- Assess the answer and give the score
- Calculate total score

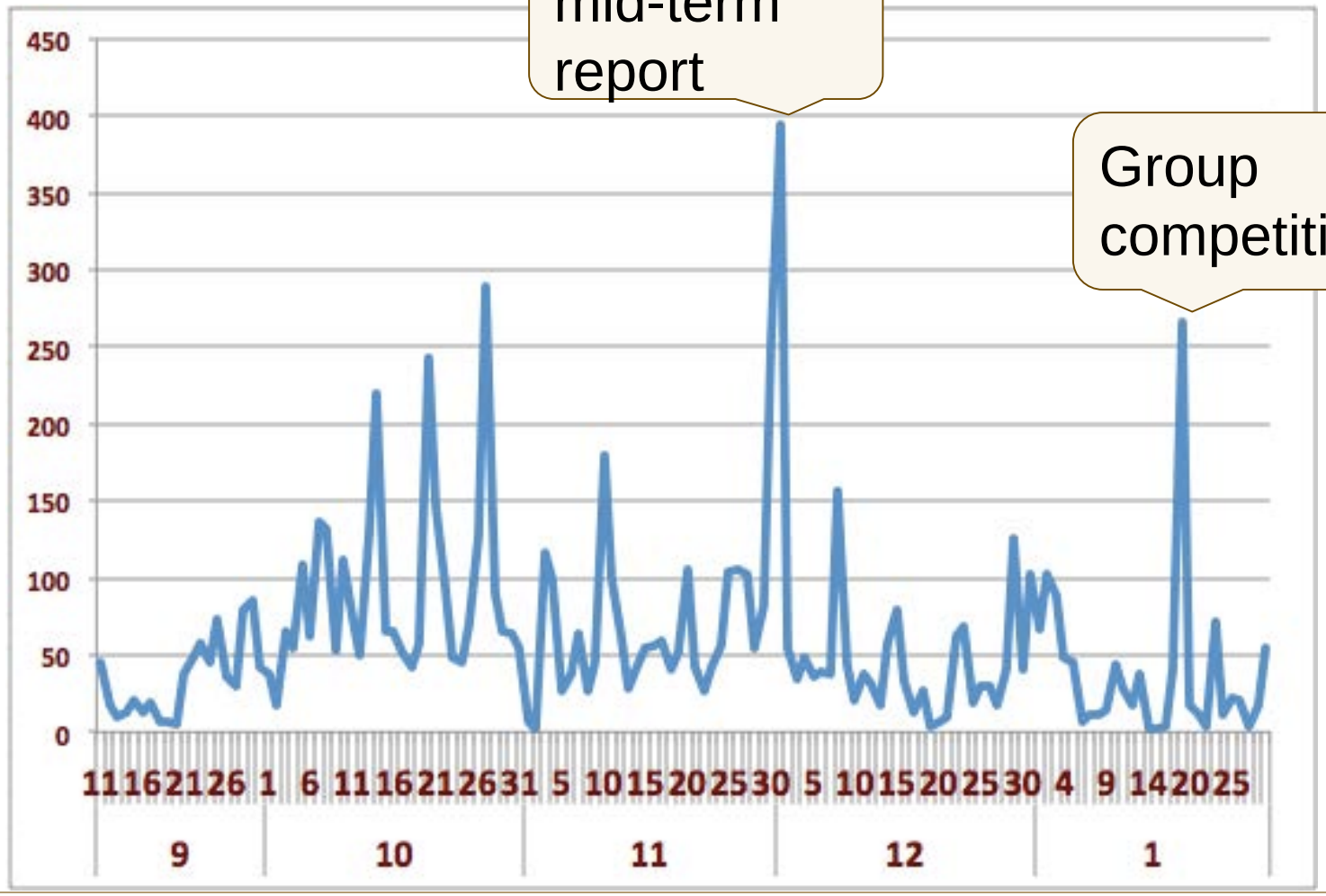
Answer

- Answer the question in each team corner as quick as possible to get the score for his/her team
- Team with the highest score wins.

Each team has 4 different jobs, assigned to different students.
Students supervised activities by themselves

Content readings vs. time

(BCC Course of 2012)



臺北醫學大學
TAIPEI MEDICAL UNIVERSITY

Thank You

Hsu-Tien (Marian) Wan
Taipei Medical University
wanhsu@tmu.edu.tw

Acknowledgement: