



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

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# Taipei Medical University (TMU)



# Learning Technology in TMU

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Blended Learning Environment

In-class

E-learning

synchronous

asynchronous

Tele-Conferencing  
Webcast

LMS  
Podcast  
OCW

- IRS
- Self-recording tools
- E- classrooms



# TMU OCW Site

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■ Installed on 2007/7

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



The screenshot displays the TMU Open Course Ware interface. The main content area features a course titled "30600083 - \*\*綜合護理專題討論 Seminar in current nursing issues, Fall 2009". The course is taught by Yann-Fen C. Chao, Professor at the College of Nursing. The course structure consists of 2-hour long classes once a week. A course description is provided, explaining that the course explores the relationship between nursing and society, discussing the impact of nursing on health care and vice versa. The course also includes a copyright notice for 2007-2011 Taipei Medical University and a Creative Commons Attribution-ShareAlike license logo.

<http://ocw.tmu.edu.tw>  
2014/2: 82 courses



# Current Status in TMU

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- 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*



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# Courses Using Opencourseware in TMU

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- 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]

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### 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

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

For the versions of E-1 co-taught by Dan and David, see Fall 2008 and Spring 2010.

Computer Science E-1: Understanding Computers and the Internet | Fall 2006

122 people like this. Be the first of your friends.

David J. Maier, Instructor  
maier@harvard.edu  
http://www.harvard.edu/maier/

Harvard Extension School

This course is all about understanding: understanding what's going on inside your computer when you flip on the switch, why tech support has you constantly rebooting your computer, how everything you do on the Internet can be watched by others, and how your computer can become infected with a worm just by turning it on. In this course we demystify computers and the Internet, along with their jargon, so that students understand not only what they can do with each but also how it all works and why. Students leave this course armed with a new vocabulary and equipped for further exploration of computers and the Internet. Topics include hardware, software, the Internet, multimedia, security, website development, programming, and dotcoms. Through optional hands-on sections and workshops, local students have opportunities to dissect as well as upgrade a computer with additional hardware, search the Internet more effectively, build a wireless network, create digital images, eradicate spyware, and design webpages. Problem sets offer online students similar opportunities. This course is designed both for those with little, if any, computer experience and for those who use a computer every day.

Lectures | Problem Sets | Exams | Workshops | Videos of the Week

Lecture 6: Jeopardy! ▶ play

Students versus teaching fellows!

Video

- Flash
- MP3
- QuickTime

This is OpenCourseWare.

Computer Science E-1 is a course at Harvard Extension School. E-1 isn't so much about computer science as it is about technology and how it all works. Most every student who takes this class uses computers every day but doesn't necessarily understand what's going on underneath the hood (or, in some cases, is outright scared!). All students exit this more comfortable with computers and the Internet.

Even if you are not a student at Harvard, you are welcome to "take" this course via computerscience1.net by following along via the Internet. (The course's own website is at www.computerscience1.net.) Available at left are videos of lectures along with PDFs of problem sets. Sample solutions to the latter are not available, but if you have questions or would like to discuss the material with others, do join the course's Google Group.

If you're a teacher, you are welcome to adopt or adapt these materials for your own course, per the license.



# 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]

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Knowledge

OCW  
video

Skill

- IT tools intro.
- Useful info. retrieve

Practice

- Group discussion
- Personal reflection
- Team report



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# Basic Computer Concept [schedule]

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## Topic

Introduction to the course

Hardware (2 weeks)

Software

Internet (2 weeks)

\*Surprise

Multimedia

Security (2 weeks)

OpenCourseware

Team Project Presentations

## Practice

Platform function

Info. retrieve

Personal reflection

Team discussion

Team discussion

IT tools try out

Team discussion

Personal reflection

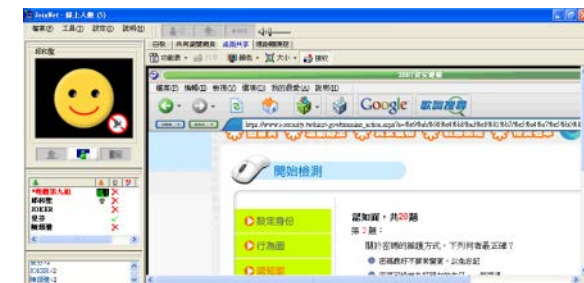
Team report + peer  
review



# Platforms & Tools

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





# Student Assessment

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



# Evaluation

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- 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) 🌐

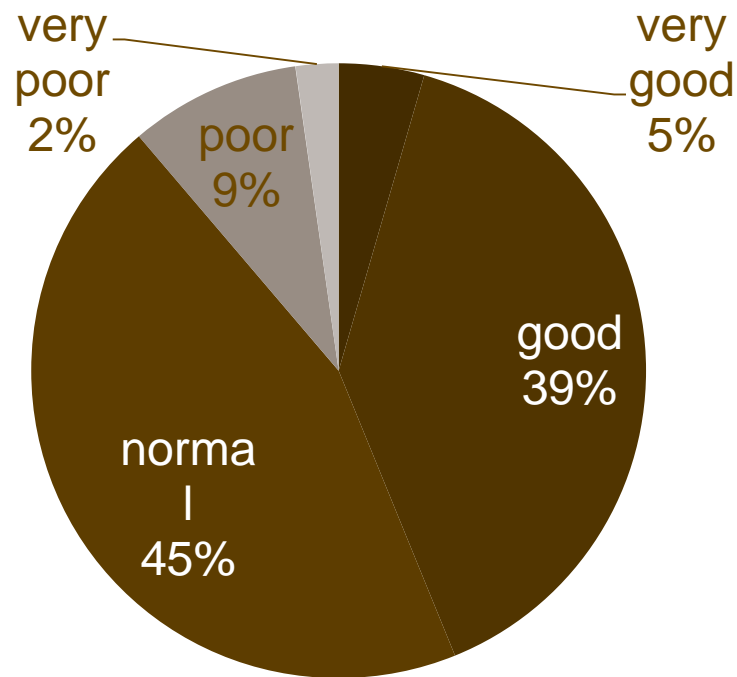
- 1. 使用遠距教學
- 2. 傳統教室上課(以講解為主)
- 3. 電腦教室操作示範
- 4. 製作專案
- 5. 校外參觀
- 6. 使用國際教材
- 7. 小組上課
- 8. 其他(請說明)



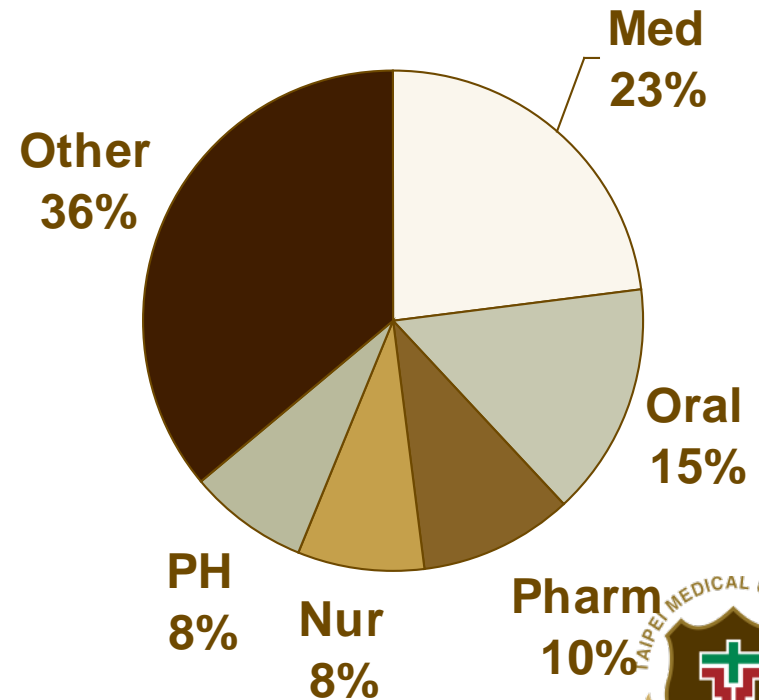
# Students Enrolled

(BCC Course, sampling from 1 semester)

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Computer skill  
(Self-evaluation)



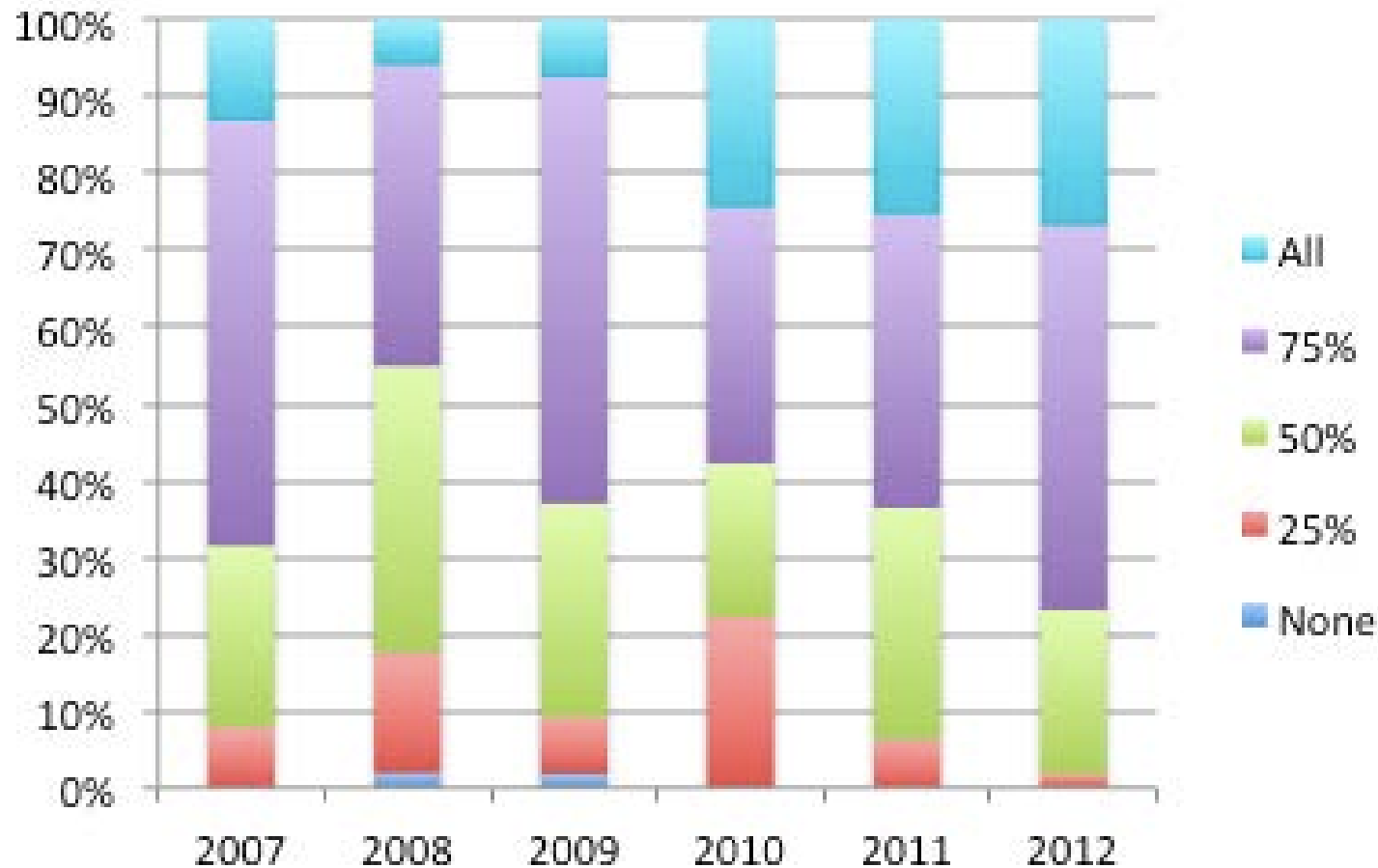
Majors



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# Videos students viewed each year

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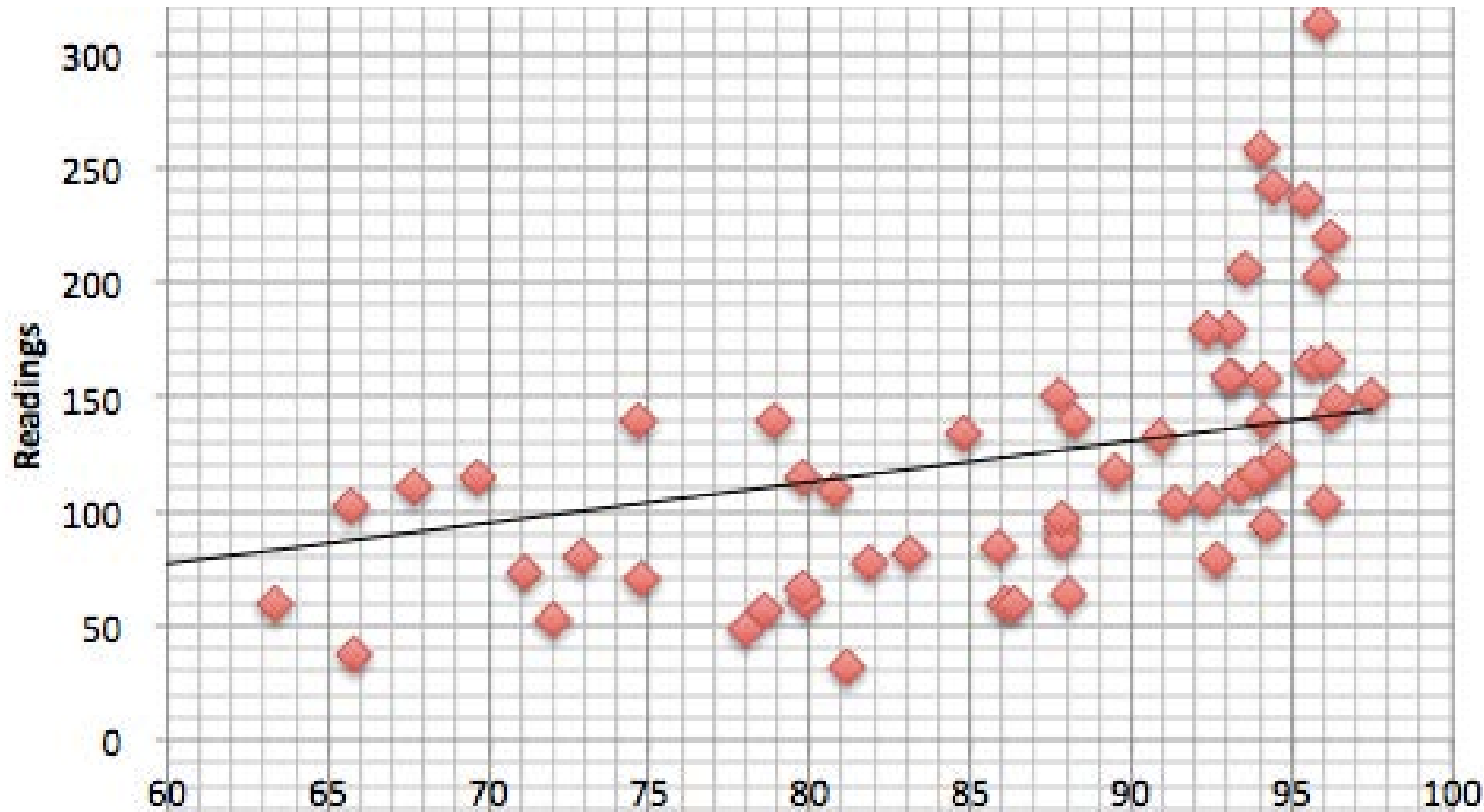




# Students' readings vs. final score

(BCC Course of 2012 )

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# Students' feedback

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- 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

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	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

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## 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



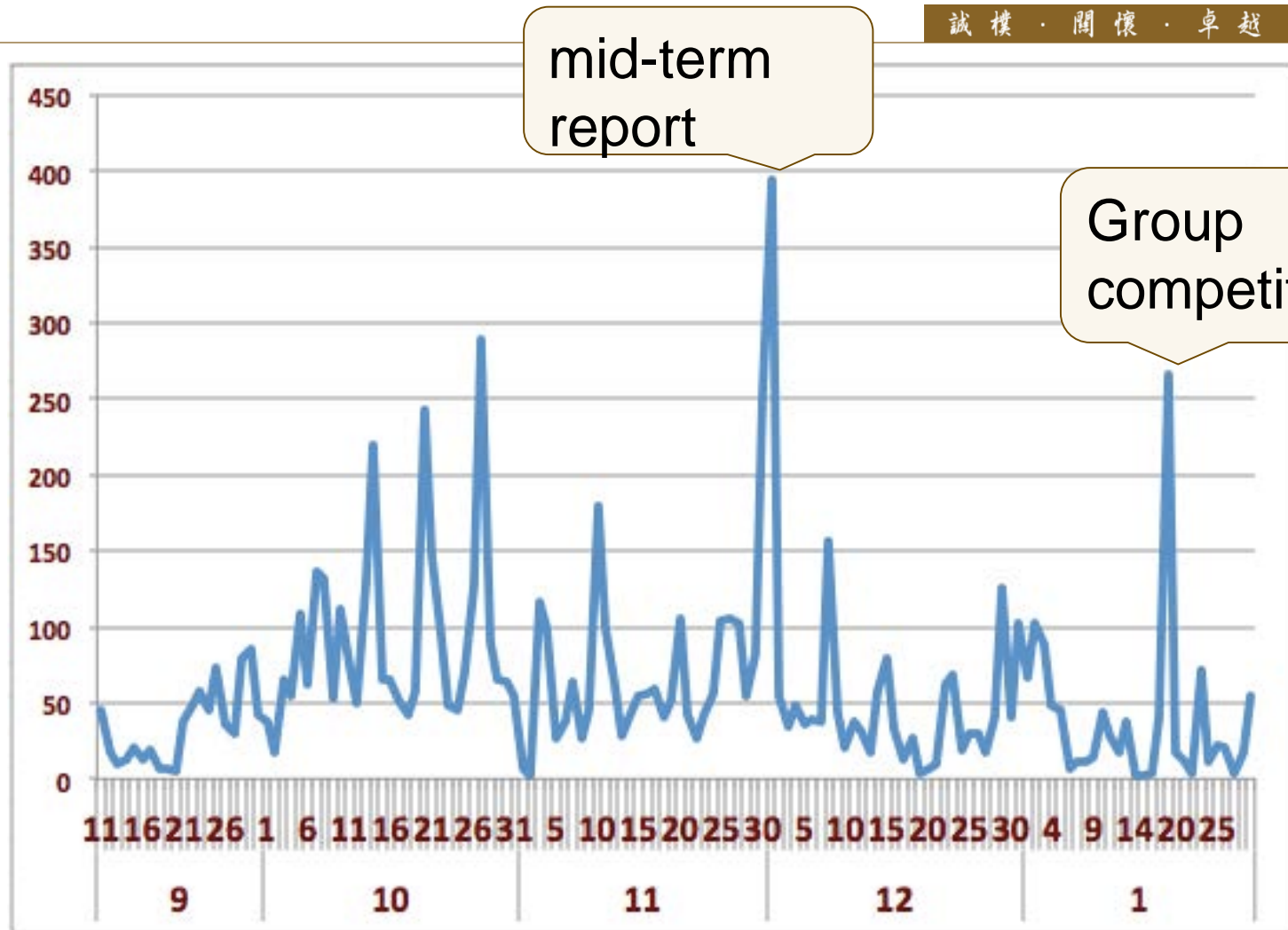
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# Content readings vs. time

(BCC Course of 2012 )

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mid-term report

Group competition





# Thank You

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