To increase interaction time in Lectures for enquiry based learning

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Conventional Lectures - challenges

- Large group size
  - Limited time for interaction
- Diverse specialisation/levels
  - Master level and Undergraduates
- Diverse abilities
  - One size does not fit all!
Using the limited contact time: The dilemma!

Too detailed? Boring!!!

Too condensed? Difficult!!!
ARE STUDENTS MOTIVATED TO DO EXTRA WORK?

LET’S ESTABLISH A CONVERSATION IN THIS SESSION!
Setup a feedback system

ResponseWare App
search “Responseware”

Available on the App Store
Available in Android Market

BlackBerry via www.surrey.ac.uk/rw/

OR

www.rwpoll.com
(any web enabled device)

Session ID = IMRAN33
In your expectation, requesting students to work on a biweekly assignment based on the material that they will learn later, will be popular?

1. Yes, very popular
2. Neutral
3. No, very unpopular
In your expectation, requesting students to work on a biweekly assignment based on the material that they will learn later, will be popular? **How about this proposition if it frees up lots of discussion time and focuses lecture in the key problem areas!**

1. Yes, very popular
2. No, very unpopular
STUDENT ARE WILLING TO DO EXTRA EFFORT IF LECTURERS ARE ALSO WILLING TO GO AN EXTRA MILE!
How to help them with this

• Provide them full control
• Fit in their busy schedule
• Use the interaction media they are mostly glued to...

Online Videos
Overall objectives

- Encourage Learners for Pre-session Study
- Off-load non-conceptual/procedural explanations
- Tackle diversity
- Adapt to cohort dynamics and problems
- Increase interactivity and make it interesting/motivating
EXAMPLE video

• These videos are provided in advance
• Can pause, rewind and replay – control the delivery of the content ....
How to assess pre-session effort

- **Simple questions based on the “future” material**
  - videos should be used as a resource to help
  - may need further reading and exploration by the student using other conventional sources as well

- **How to mark such assignments?**
  - Material has not been taught yet
  - So mark based on “effort”, not based on the “correctness”!!
Peer interaction

• Can make small groups to work on the assignments
• Use Electronic Voting System to encourage peer instruction
  - Poll them before allowing any peer instruction
  - Provide some more information on the topic if there is a critical mass of “correct” answers – around 60%
  - Allow peer discussion
  - Poll again!
Fortnightly assignments are good motivators for self study.
Self-study facilitates better preparation for the lecture and hence improves understanding/learning.
Compared to the conventional lecturing practice, I learn better in this module.
The number of assignments during the year should be decreased.
Improvement in learning

- A similar conceptual pre and post module test!
Overall student satisfaction

Dear Mohammad

Re: Student Feedback

At the Course Review meeting held on 18th July to review undergraduate courses for Semesters 1 and 2 in 2010/11 the panel noted that your courses EEE2024 and EEE3006 received a very high satisfaction rating in response to the module evaluation questionnaire. On behalf of the Panel I would like to congratulate you on this excellent student feedback.

Yours sincerely

Dr Neil Emerson
Chair, EE UG Course Review Panel

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Dear Mohammad

Re: Student Feedback

At the Course Review meeting held on 29th June to review postgraduate courses for the Academic Year 2010/11 the panel noted that your course EEE3006 received a very high satisfaction rating in response to the student feedback questionnaire. Please review the feedback and continue to build on the areas of strength noted by the students.

On behalf of the Panel I would like to congratulate you on this excellent student feedback.

Yours sincerely

Dr Richard Curry
Chair, EE PG Course Review Panel
Some student comments (verbatim)

**What are the best aspects of this module?**

- “The best aspect of this teaching is that ability to communicate btw tutor and students was clear and also the assignments helped me to learn the material clearly”
- “I think this module should be a reference to all other modules. It's a great system, we don't feel rushed, both lecturers”
- “Assignment system is really quite genius”
- “The discussion of tutorial questions at the end of the lecture and solving examples during lectures. Did the videos on ULearn and for weekly night assignment”
Conclusions

• The combination of “just in time teaching” approach with online video content and fortnightly preparatory assignments was seen to be an effective tool for improving the student inspiration and participation.

• For the evaluated cohort over the period of two semesters, it was established that it significantly improved their ability to answer conceptual numerical questions in selected areas.

• Based on the overall student feedback, it was concluded that the method was effective in motivating students to adopt enquiry based and active learning.
References


• Simkins, S, Maier, MH (eds.) 2010, just-in-time teaching - Across the discipline, across the academy, 1st edn, Stylus Publishing LLC, Sterling VA, USA.
A backup slide
How to prepare these videos

• A tablet PC or an add on tablet device (costing around £50-£60)
• Camstudio – a free software to capture your computer screen and sound