

# Will flipped teaching lead to the end of the traditional lecture?

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# Traditional science/engineering teaching

Contact time dominated by “The Lecture”.

Students expected to  
analyse/conceptualise/problem solve  
predominantly on their own.

No real change for 100s of years.

# The Lecture - 1315



## Is lecturing a waste of time?

Inflexible outdated mode of content delivery.

Research has shown that lecturing does not lead to any higher learning (AJP 1985, Mazur).

Student brain activity during lecture same as watching TV (MIT survey).

Some people talk in their sleep – lecturers talk while other people sleep!

# The Lecture

Main purpose – information transfer

Are there better ways to do this?

Is it the best use of teacher-student contact time?



# Flipped teaching

Information/content delivered without face to face student-lecturer contact - **outside class**

Face to face contact time with teacher is used to aid analysis and conceptualisation – **in class**.

Professor becomes “guide by the side” rather than “sage on the stage”

# How to Flip?



Content Delivery – assigned reading, short video/screencasts ....

Contact time – workshops, games, quizzes, clinics, clickers, peer instruction.....



# Advantages of flipped teaching

- Flexibility for both lecturer and student
- Enhanced presentation of content
- Caters to a variety of learning styles
- Content can be revisited as often as required
- Frees direct contact time for deeper learning activities, workshops, clickers etc



# Recent Trials

- 2nd and 4th year modules **content delivered** primarily using tablet PC screencasts.
- Clinics/workshops/clickers to **assimilate**.

# Student reaction

“Do you believe the flipped teaching method used in this module is better than the traditional lecture-based method?”

- Year 2: 74% responded YES
- Year 4: 85% responded YES

# Typical responses

- *“Often need to ask more questions when working through tutorials/workshops than during lectures so it is better to watch lectures in own time. Having a recording to watch pause and rewind during revision was very helpful”*
- *“It seems like a much more sensible medium of teaching and it makes sense to use lecture time for workshops. It was also very useful during revision to look at a specific slide being discussed multiple times. I guess there might be problems persuading people to turn up to the workshops but that's they're own loss. “*

# Typical responses

- *“I believe that the 'flipped teaching' method is not better than traditional teaching methods for this course. I think that a lecture engages students more and allows you the opportunity to ask questions in a lecture environment, where other students can also take note of the answer. Personally, I find it much easier, for want of a better word, to learn through being spoken to in a lecture, rather than being left alone to work it out.”*

# Overall impression

- Majority of students do like the flipped approach
- Appreciation of higher learning gained from workshop/clicker sessions not always recognised - incentives needed at least initially to participate

# Barriers

- Lecturer perceptions of what university teaching should be
- Student expectations of what university teaching should be
- Do our examinations test higher level skills?
- Appropriate teaching spaces