Myth or fact?

Flipping your class will kill your student ratings

Steven Halim
Computer Science

Myth or fact?

Flipping your class
will NOT kill your student ratings

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Computer Science

Student (again), for “an hour”

Please:

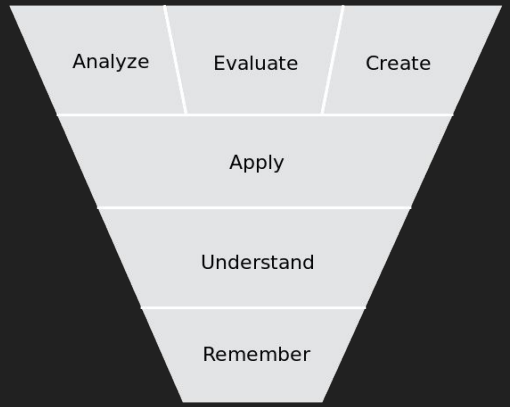
A). Point your smartphone/iPad to this QR code, or
B). Type “https://visualgo.net/en/sorting?slide=1”, or
C). Google “sorting visualization” and click *the first link* :)

Self read the first ~15 slides or so in about 5m+ (until Bubble Sort)

Flipped Classroom

Similar terminologies: “Blended Learning”, “MOOC”

Basically, students “self-learn” basic materials (at home) prior to the actual face to face class and then instructors engage students in “higher order learning level” during such flipped class



Flipped Classroom @ NUS (SoC)

Our name (School of *Computing*) kinda forces us to experiment with this

Provost encouraged us to flip our classes, e.g. using edX (recent 2018 email)

Growing level of computing students in NUS SoC since recent years

The Standard Method

Typical 4MC NUS module (expected 10 hours workload/week): 2-1-1-3-3

- 2 hours of lecture
- 1 hour of tutorial
- 1 hour of laboratory
- 3 hours of assignments
- 3 hours of preparatory work

The Reality

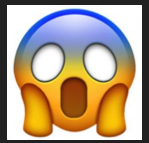
Typical 4MC NUS module (expected 10 hours workload/week): 2-1-1-3-3

- Effective 1h.30m of lecture (-5m start buffer, -5m break, -20m early dismissal)
- Effective 40m of tutorial (-5m start buffer and -15m early dismissal)
- Effective 40m of laboratory (-5m start buffer and -15m early dismissal)
- 3 hours of assignments
- 3 hours of preparatory work

The Really Real Reality

Typical 4MC NUS module (expected 10 hours workload/week): 2-1-1-3-3

- Effective 1h.30m of lecture (-5m start buffer, -5m break, -20m early dismissal)
- Effective 40m of tutorial (-5m start buffer and -15m early dismissal)
- Effective 40m of laboratory (-5m start buffer and -15m early dismissal)
- 1 hour of last-minute-style assignments
- 0 hour of preparatory work



What I did last AY (AY 17/18)

Typical 4MC NUS module (expected 10 hours workload/week): 3-2-1-1-3

- 3 hours of preparatory work (self-read e-Lecture material and do online quizzes)
- Effective 1h.30m of lecture (-5m start buffer, -5m break, -20m early dismissal)
- Effective 40m of tutorial (-5m start buffer and -15m early dismissal)
- Effective 40m of laboratory (-5m start buffer and -15m early dismissal)
- 3 hours of serious assignments

2h Lecture Components: Traditional

My old version of a computing lecture schedule, let’s say it is a 12-2pm class

1. 12.00, waiting for class to settle down, mention a few course admins for that week
2. 12.05, start talking about a motivating problem for this week’s lecture topic
3. 12.10, discussion of "basic definitions"
4. 12.30, discussion of "what has been done before"
5. 12.55, lecture break
6. 13.00, explaining the meat (the real topic of the lecture)
7. 13.35, closing remarks, link to relevant homework/assignments
8. 13.40, dismiss students

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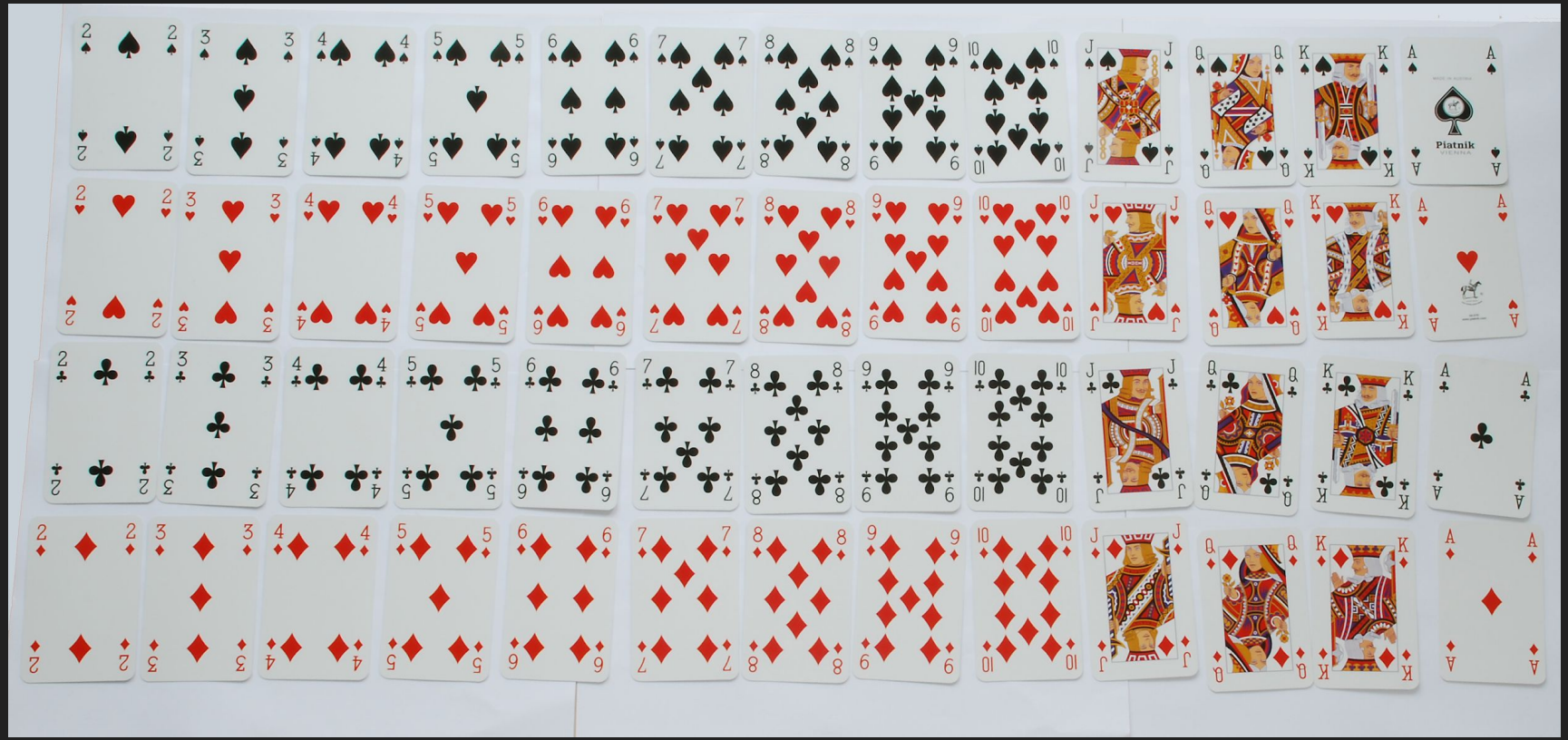
2h Lecture Components: Flipped

Now before class: Up to 3 hours of self reading/exploration of prescribed topics

1. 12.00, waiting for class to settle down, mention a few course admins for that week
2. 12.05, discuss only the harder known concepts of that particular lecture topic
3. 12.30, link concepts with older ones, ask probing questions, ask students to compare (live demo)
4. 12.40, run live mini test (live demo)
5. 12.55, lecture break
6. 13.00, do at least one live problem solving of that lecture topic (live demo)
7. 13.35, closing remarks, link to relevant homework/assignments
8. 13.40, dismiss students

Let’s Play Cards



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Let’s Do an Insta Online Quiz :)

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C). Or follow my on screen instruction

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Before and After (3 sems experiment in AY17/18)

Before AY17/18

Module, frequency, total, rating
CS1020, taught 1x, 160, 4.1
CS2020, taught 1x, 50, 4.3
CS2010, taught 6x, 800+, [4.4..4.9]
All run in “traditional style”

Last AY17/18, my flipped classes

Sem	Module	Size	Rating
1	CS2040C	37	4.7
2	CS2040C	173	4.5
4	CS2040	38	4.8

CS2040/C is CS1020+CS2010-a bit
CS2040/C is a subset of CS2020

Classroom Attendance Report

My classes (lectures) attendance rating in this past one AY 17/18 are:

~80%+ for the 173-students class :)

I guess ~95%+ for the other <40 students classes :)

The Fine Prints...

In case any of you want to do the same for your module

1. It is “harder” to teach a successful flipped classroom module
2. You need to set a constructive alignment between:
    a. The self-reading materials (I use my visualization tool; prepare your video/e-material well)
    b. What actually discussed in the face to face flipped classrooms
    c. What actually asked in the tutorials and/or laboratory assignments
    d. What actually tested (especially in the midterm test and/or practical examination)
3. Be strict about flipping the class from the get go
4. It may take time before you start seeing the fruits of your labour
5. Need good quality teaching assistantS to help you run this

Stuffs that Don’t Work Well *yet* (for me, so far)...

1. On how to minimize this: The struggling students really bleed in such module
2. On how to lighten the transition from 99% traditional methods (from K, P, Sec, JC/Poly) to flipped classroom style, especially during the early weeks (my module is mostly taken by Y1 S1/2 students)
3. On how to deal with a (minority) of students who still prefer to be taught in traditional way even until the end...

Thanks

Any Questions?