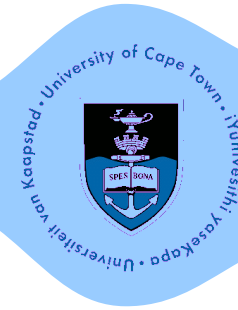
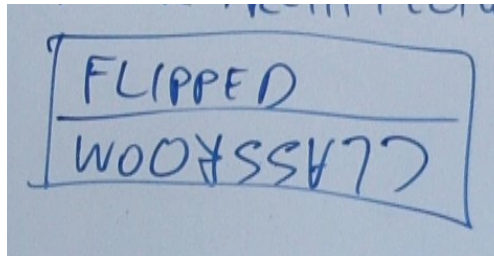


# Flipping Computer Architecture



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# Principle of the Flipped Classroom



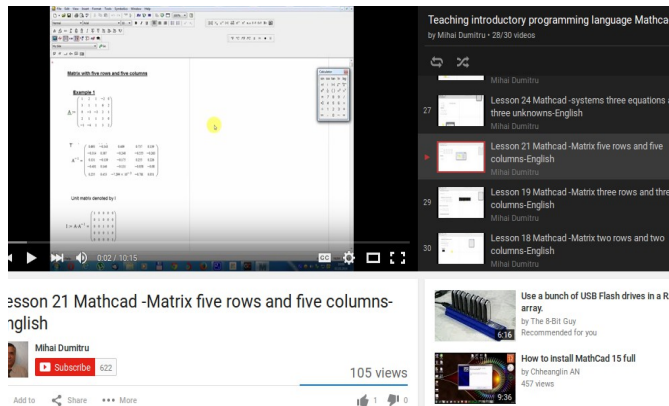
No dissemination funnel.

Basic content is better learnt individually.

Higher-level concepts can be learnt through discussion.



# Typical Mechanics



Online pre-lecture 10min  
video for content.

Discussion in class.



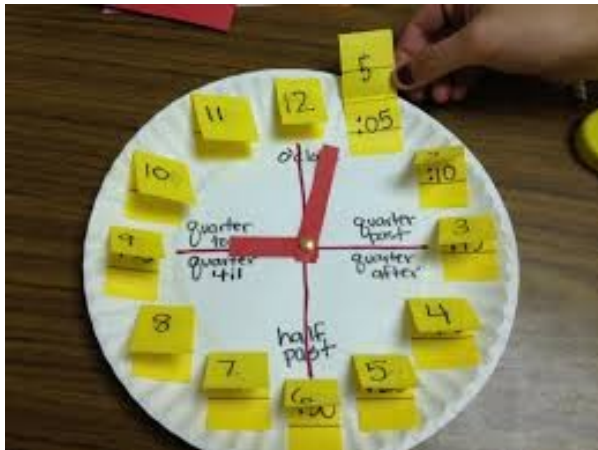
# A Low Cost Implementation

No funds for production.

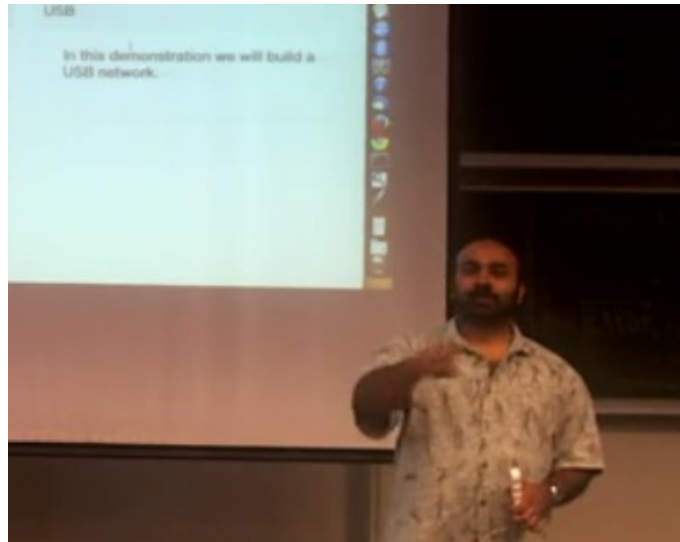
Low cost to students.

Test before commitment.

Need cheap scalability.



# The Classroom



Computer Science 2

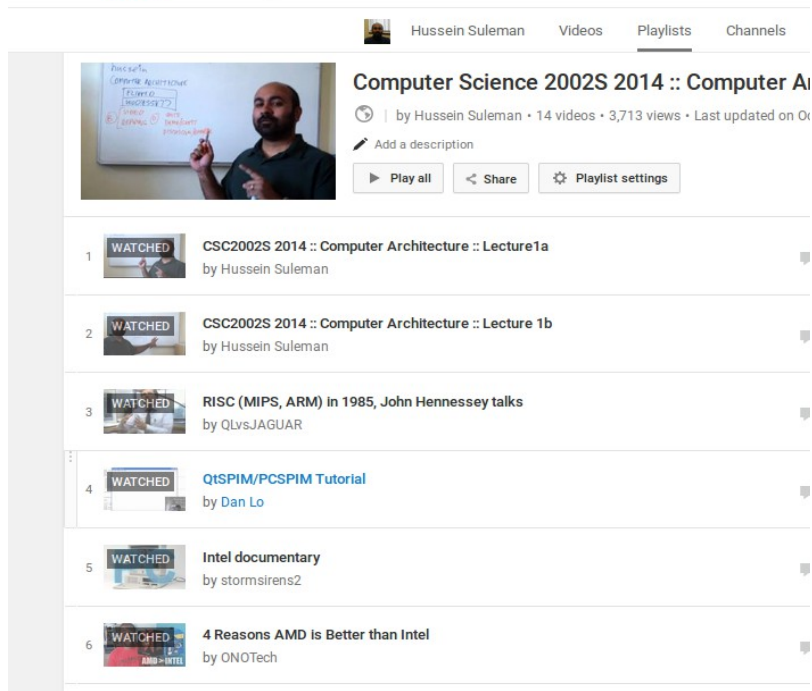
Computer Architecture

175 students

14 lectures



# Videos and Readings



Mostly Youtube videos  
Wikipedia+Free content

Why? subject matter  
videos for excitement  
readings for detail



# Quizzes

[illegible]

To ensure readings and viewings are done!

Done on paper.  
Marked on computer.

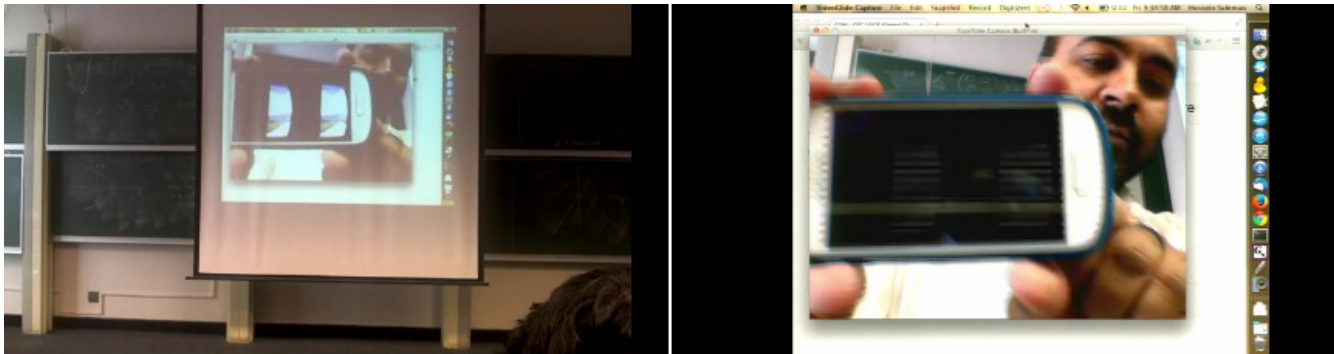
# Low-tech in class.



# Demonstrations

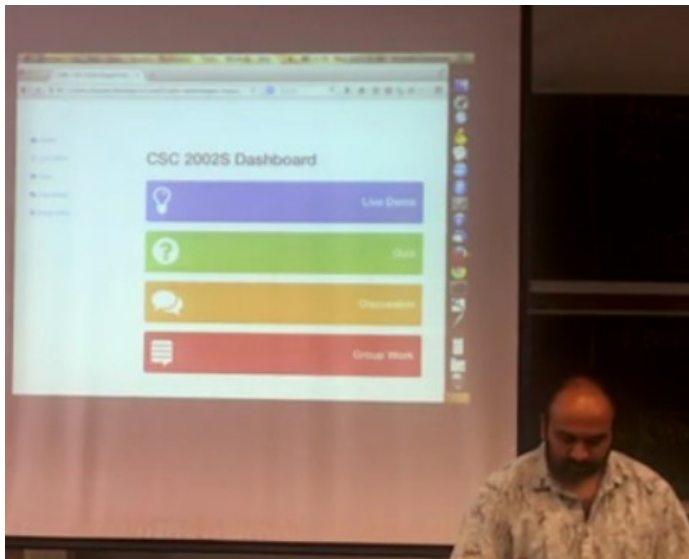
Link back to  
practical  
aspects of  
course.

Common tech (e.g., phones).  
Virtual machines and  
emulators.  
Laptop+webcam.





# Classroom Orchestration



Organize multiple aspects of the course.

Single tool to simplify and manage class activities.



# Evaluation – Student Reaction

	Readings	Videos	Quizzes	Demos	Discussions
Positive	19	46	31	58	49
Neutral	25	21	30	15	22
Negative	32	9	15	3	5





## Evaluation - Comments

- ❑ “the theory was too much and it is difficult to understand without having done the things practically”
- ❑ “some pre lecture readings took quite a long time to go through the day before a lecture”
- ❑ “needs to give better notes and not just wikipedia pages”
- ❑ “I feel like no effort was put in with making our readings wikipedia pages ... And the fact that it was wikipedia was slightly off putting ”





# Observations

- Many students have preconceptions about:
  - the course and what it entails
  - how courses should be taught
  - what type of text should be used
- Many students do not and cannot read
  - cannot select and cannot understand
- Many students can only learn in one way
  - need to learn how to learn





## Where to now?

- ❑ Same technique used in 2015
  - Similar results, more reading issues, class ended suddenly because of protests
- ❑ Need interventions for reading, note-taking, etc.
- ❑ Need to move students out of comfort zone earlier in degree.
- ❑ Need to train specific graduate attributes into a varied student audience.



# questions, comments, ...



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