



Flipping the Classroom and Just-in-Time Teaching

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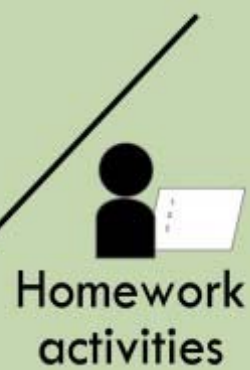
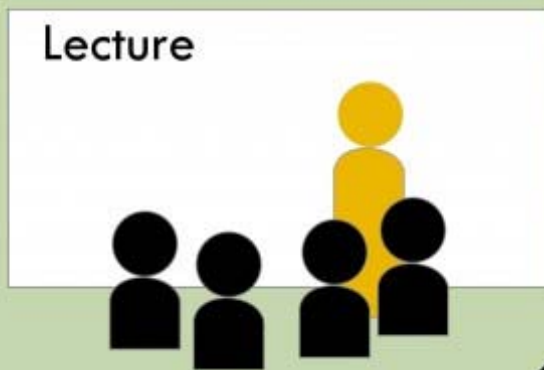
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The Flipped Classroom

Introduction

TRADITIONAL



FLIPPED



<http://www.washington.edu/teaching/teaching-resources/engaging-students-in-learning/flipping-the-classroom/>

Example





Home English (en)

Private files
Logged in user
Online users
Navigation
Calendar

Illinois Wesleyan University

Search courses:

My courses

-  **Applied Financial Economics - Fall 2015**
Teacher: Diego Mendez-Carbajo
-  **Introduction to Economics - 100.3 - Fall 2015**
Teacher: Diego Mendez-Carbajo
-  **Senior Project - 2 - Fall 2015**
Teacher: Diego Mendez-Carbajo
-  **Respondus Test Course - Spring 2016**
-  **Test Course**
Teacher: Abbey Cohn
Teacher: Diego Mendez-Carbajo



Course and Activity

Data

Descriptive Data: Course

- Students in the course: 28-25
 - (6 women and 22 men)
- Weeks in the semester: 15
- Weekly minutes of in-class contact time: 200

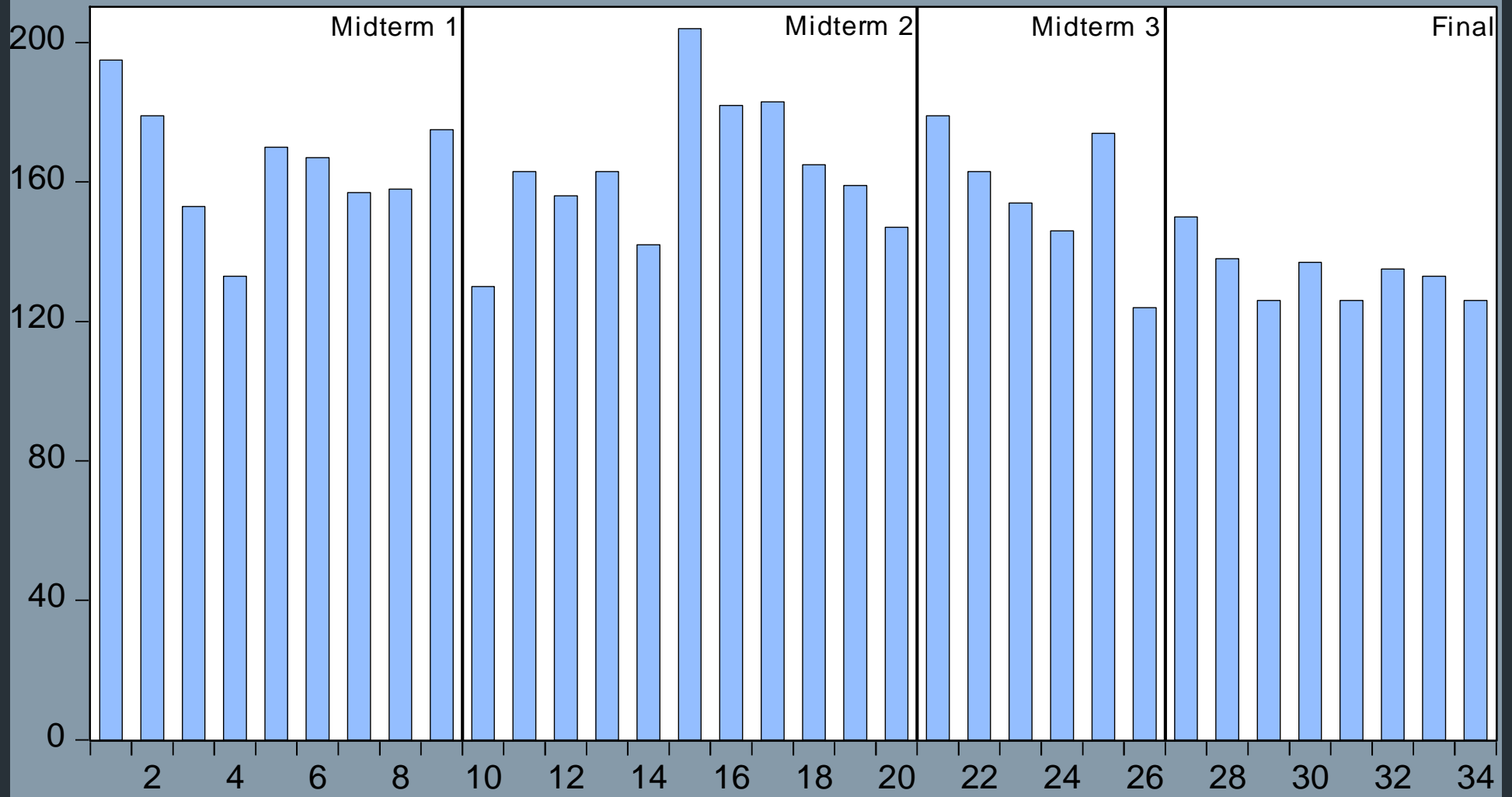
Descriptive Data: Activity

- Number of *Video+Questions*: 34
 - Narrated by a male voice: 14
 - Narrated by a female voice: 20
 - Consisting exclusively of diagrams: 6
 - With illustrations and animations: 25
 - Including a person on screen: 9
- Average length of video clips: 5 minutes and 40 seconds

Time on Task



Number of Times Each Video+Question was Viewed



Time on Task

- Average time spent on these activities per student per week: 1 hour and 30 minutes.
- Reading 300 words a minute, 90 minutes each week of the semester, a student would have read 498 pages of text.
- The textbook is 592 pages.



Classroom Activities

Just-in-time Pedagogy

Just-in-time Pedagogy

- Focused on improving student learning.
- Students' responses to JiTT exercises are used to identify learning gaps.
- Instructors tailor activities to meet students' actual learning needs.

<http://serc.carleton.edu/econ/justintime/index.html>

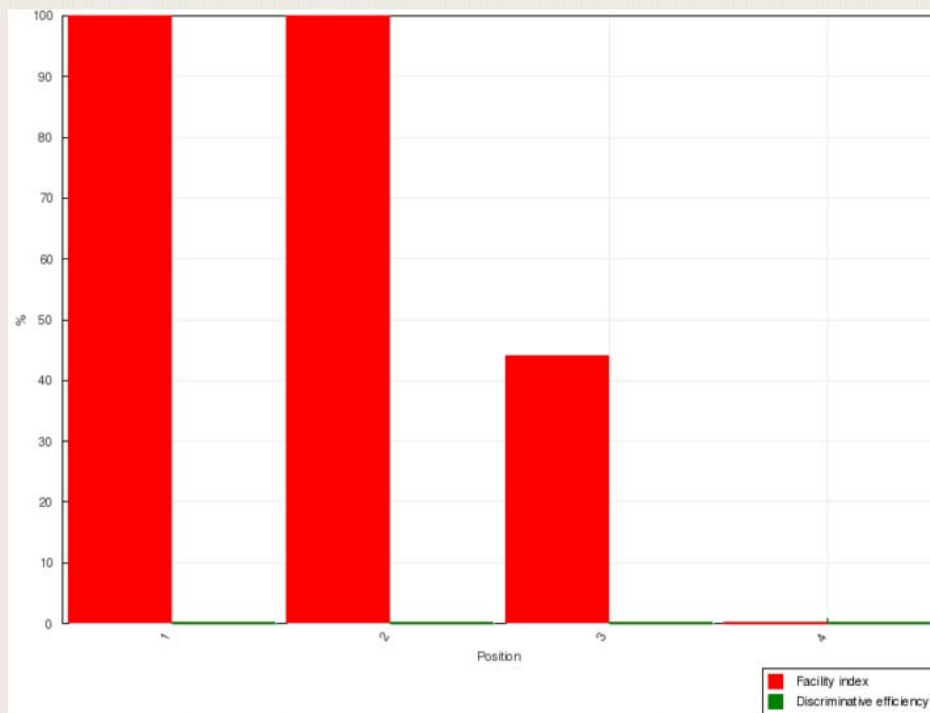
Quiz Results: Statistics

Quiz structure analysis

Download table data as Comma separated values text file Download

Q#		Question name	Attempts	Facility index	Standard deviation	Random guess score	Intended weight	Effective weight
1		02.Circular Flow.1	25	100.00%	0.00%	25.00%	33.33%	0.00%
2		02.Circular Flow.2	25	100.00%	0.00%	25.00%	33.33%	0.00%
3		02.Circular Flow.3	25	44.00%	50.66%	25.00%	33.33%	100.00%
4		RATING	25			20.00%	0.00%	0.00%

Statistics for question positions





Usage and Design

Findings

Student Course Evaluations: Average Scores



Question	Year/Section	
	2012/3	2014/3
The instructor's expectations were clear	4.58	4.50
The instructor was prepared for class	4.71	4.82
As a student I was generally prepared for class	3.88	4.27*
The instructor seemed genuinely concerned about student progress	3.96	4.09
The instructor was available for help outside of class	4.33	4.27
The degree of difficulty of this course was appropriate	4.08	4.00
The instructor provided meaningful criticism and comments on my work	4.17	4.23
The instructor treated students fairly	4.42	4.55
The instructor fostered an atmosphere of mutual respect	4.25	4.64*
The course has increased my interest in the subject matter	4.17	4.05
The instructor challenged me intellectually	4.42	4.36
Overall, I would recommend this course to another student	4.33	4.41
Overall, I would recommend this instructor to another student	4.17	4.50



Implications and Extensions

Conclusions

Student Reception



- Student time-on-task is high.
- User ratings were very positive.
- More views translate into more attempts.
- Students' scores improve over time.
- The number of views decreases over time.

Activity Design

- Videos should not be too long.
- Videos should contain animation.
- There is value in capturing a white board through a video.
- There is value in including a human presence in a video.

Thank You.
Questions?

