Flipping the Classroom in Introduction to Economics

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Table of Contents

- Introduction
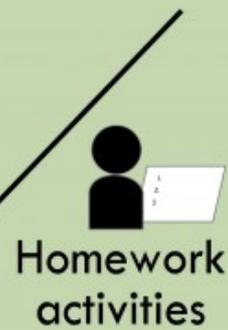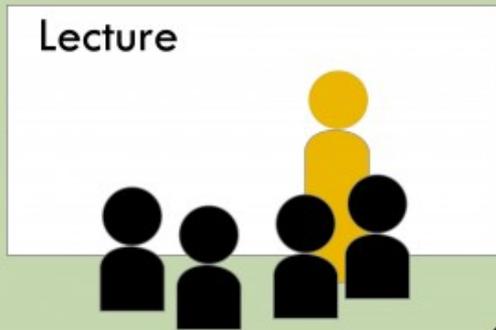- Example
- Data
- Findings
- Conclusions

The Flipped Classroom

Introduction

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

Example

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
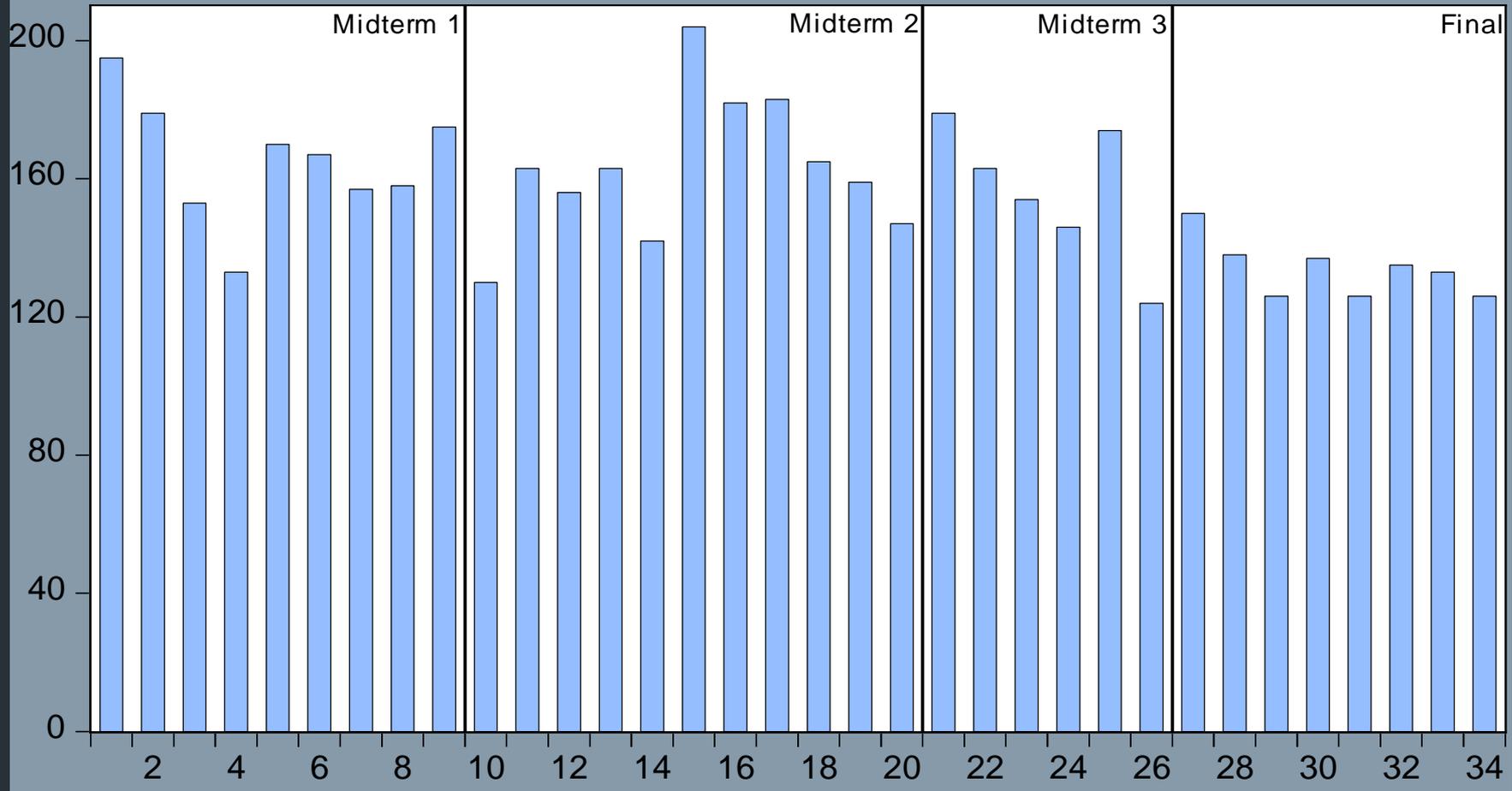
Time on Task

- Average time spent on these activities per student per week: <u>1 hour and 30 minutes</u>.

- Reading 300 words a minute, 90 minutes each week of the semester, a student would have read <u>498 pages of text</u>.

- The textbook is <u>592 pages</u>.

Tracked Variables

- Design features

- Length of videos

- Number of views and attempts

- Time started & completed

- Score (1 to 10)

- Rating (1 to 5)

Usage and Design

Findings

No Findings

Views and Length

Views and Ratings

Number of Views vs. Length of Videos

Number of Views vs. User Ratings

Findings

Attempts and Views

Views and Time
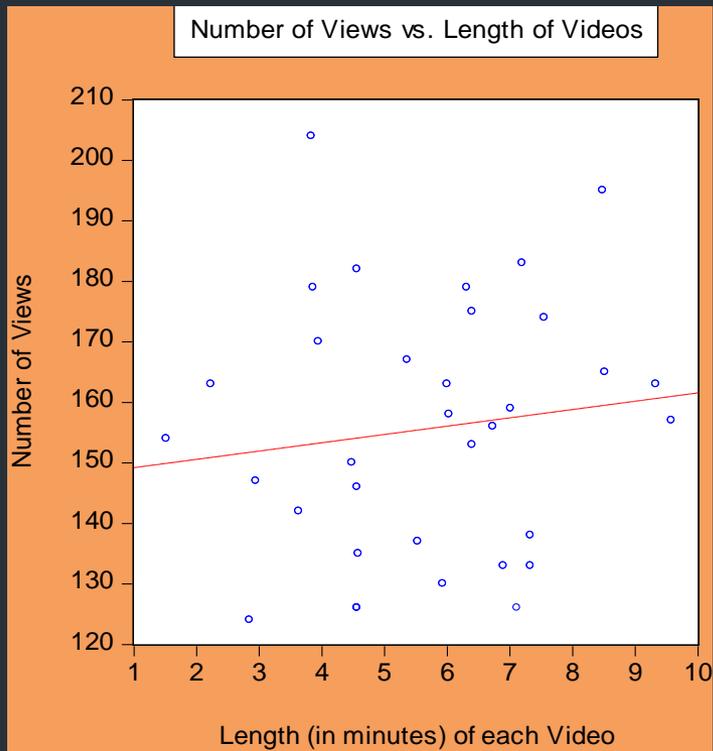
Scores vs. Time
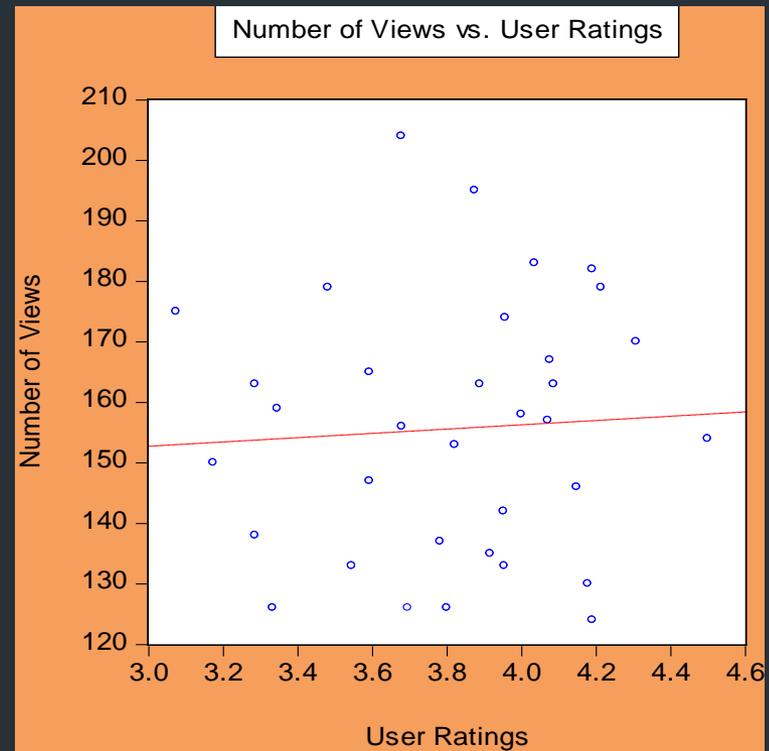
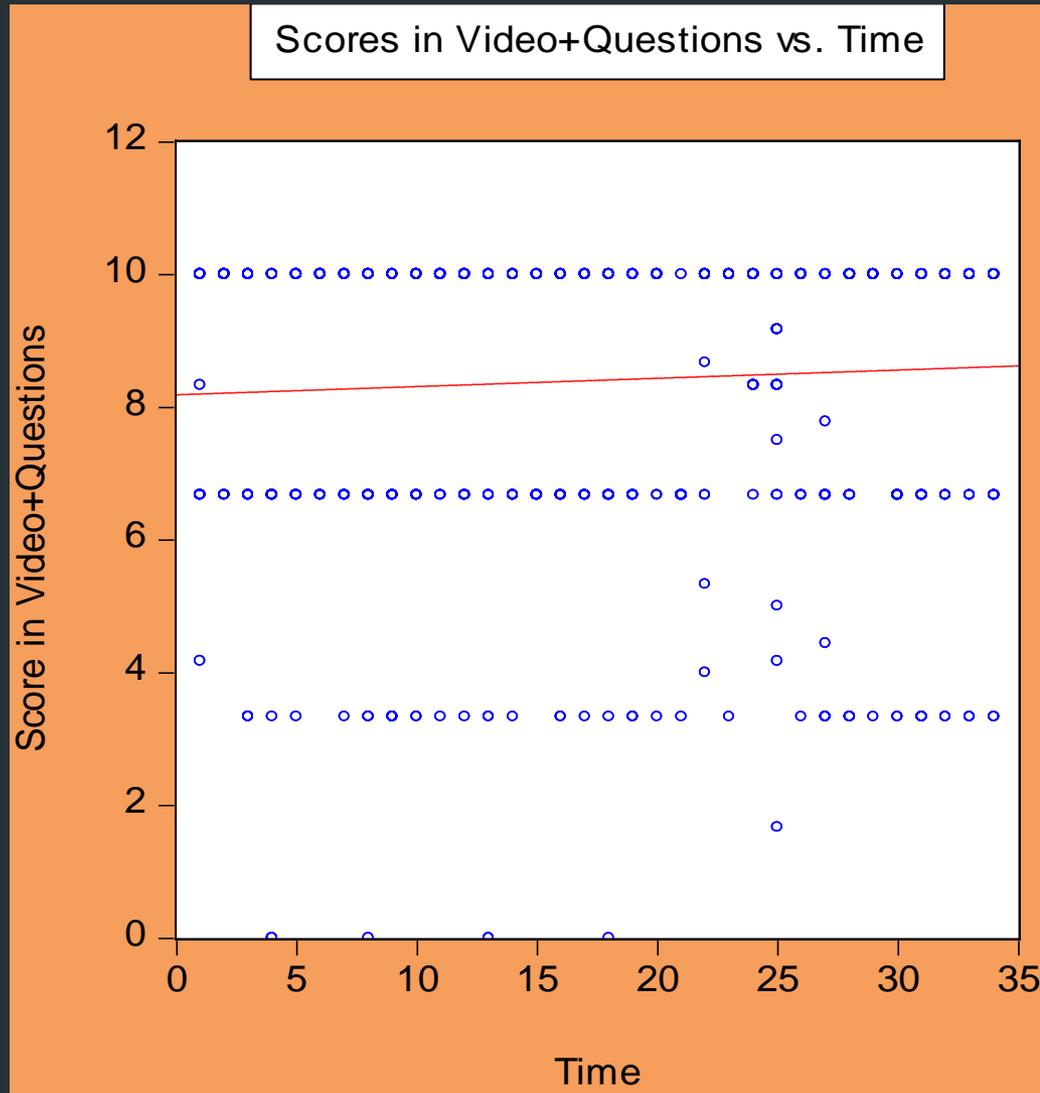Scores in Video+Questions vs. Time

Regression Results: Ratings vs. Design

Dependent Variable: *User Ratings of Video+Questions*

	N = 799
Constant	3.9063***
	(19.494)
Length	-0.0562*
	(-1.8425)
Animated	0.2108*
	(1.7366)
Human Presence	0.2848***
	(2.7158)
R-Squared	0.3833

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.

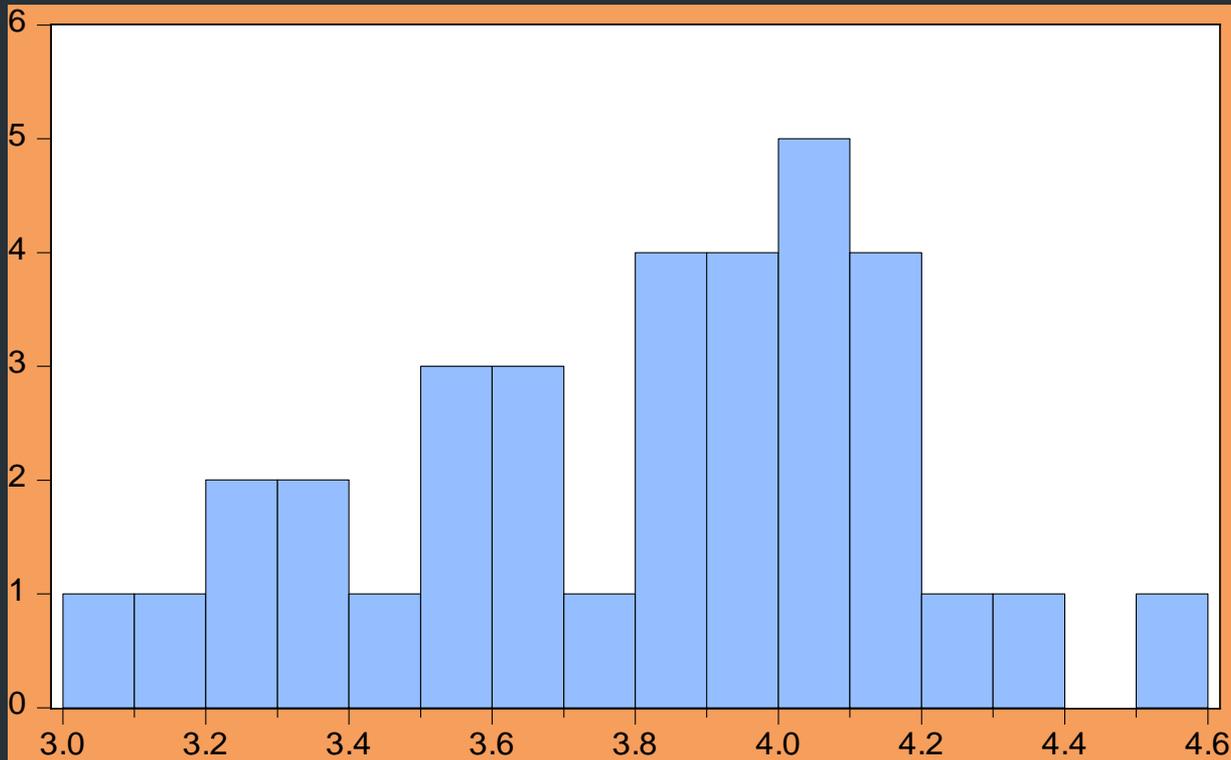- There is value in including animation or a human presence in a video.

Looking Forward

- Replication in other courses.

- Statistical analysis of pedagogical effectiveness.

Thank You.
Questions?

User Ratings (1 to 5 Stars)

Series: RATINGS
Sample 1 34
Observations 34

Mean	3.815117
Median	3.881944
Maximum	4.500000
Minimum	3.074074
Std. Dev.	0.351312
Skewness	-0.348323
Kurtosis	2.349801
Jarque-Bera	1.286440
Probability	0.525597