

SHAPING TODAY THOSE WHO WILL SHAPE TOMORROW



The impact of lecture capture on student performance

By

Chris Jones & Matt Olczak



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Introduction & Motivation

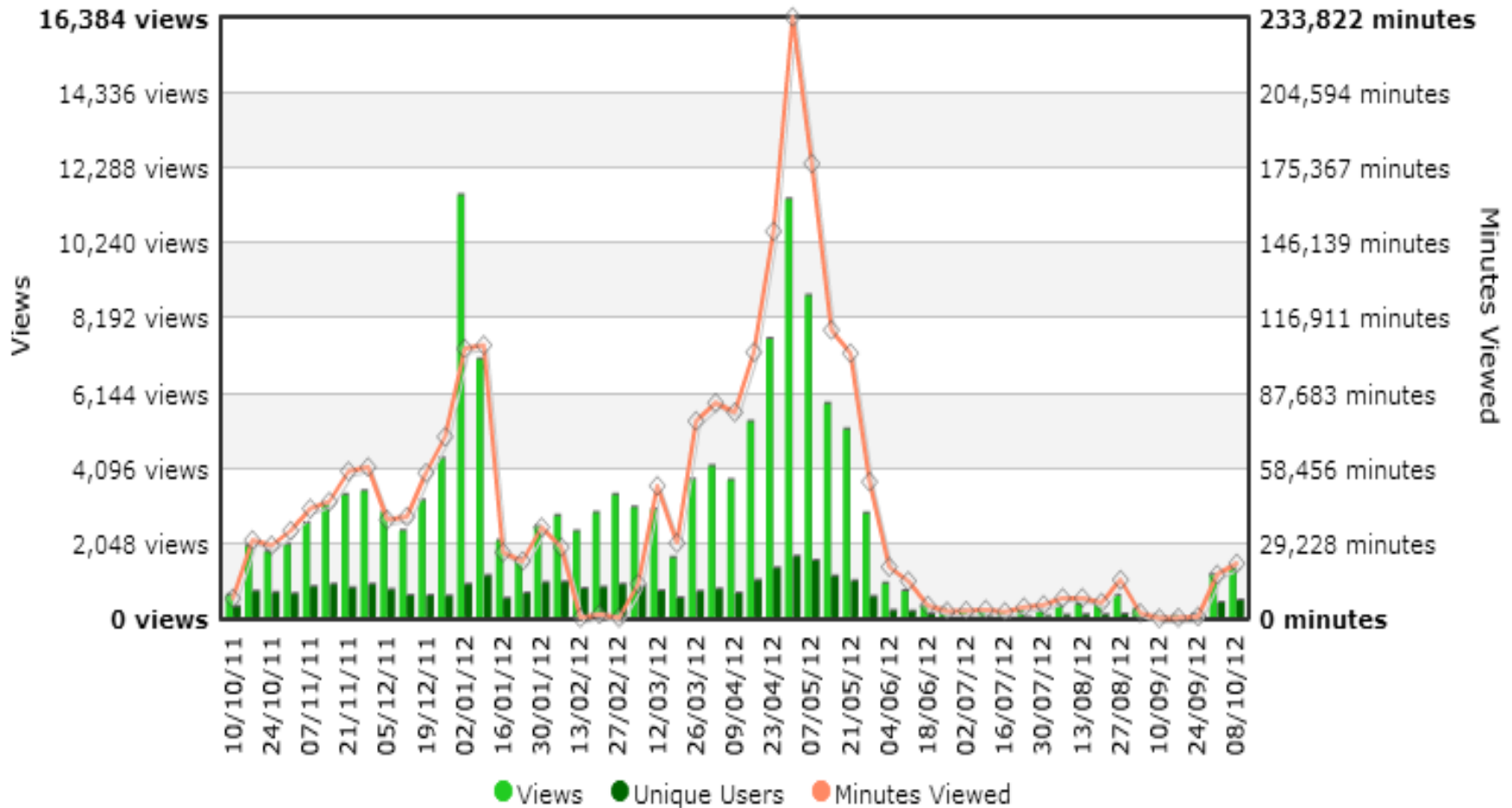
- ❑ Aston Replay is a tool that allows live lectures to be recorded and made available for students to view online.
- ❑ Survey and anecdotal evidence that Lecture Capture makes students Happy!

Research Questions:

- 1) Does watching Aston Replay improve a student's module performance?
- 2) Does watching Aston Replay impact differently across modes of assessment?
- 3) Does watching Aston Replay only during the "revision period" impact upon student performance?

University wide Aston Replay usage

Views by Week



Current Literature

- ❑ Not much using our methodology.
- ❑ The Economics literature is growing.
- ❑ Chen and Lin (2012) find that:
 - watching recordings improves performance in intermediate microeconomics by 4%.
 - viewing straight after lectures has no impact on performance.
 - students with poorer attendance made more use of lecture capture.
- ❑ Savage (2009) finds that recording have no impact of student performance.
- ❑ There is thus mixed evidence.

Context & Data

- Module entitled: Economic Environment of Business.
- Assessment: 2hr exam 40% MC + 2 Essays (30% each).
- 424 students on module – they are from many of our joint business programmes.
- We map student performance data to demographic data to Lecture Capture Data.
- Overall satisfaction rating for this module is 4/5.

Descriptive Statistics

Table 1: Descriptive Statistics

Variable	Observations	Mean	Std. Dev.	Min	Max
Gender (1 if male)	424	0.47	0.50	0	1
Overseas Student (1 if overseas)	424	0.15	0.36	0	1
Age on entry (in years)	424	19.19	2.57	17	42
BS1102 Mark (%)	424	53.33	20.47	0	95
Essay Mark (%)	346	51.16	15.88	0	93.2
Multiple Choice Mark (%)	348	70.30	14.94	15	100
1st Year Mark (%)	411	55.41	14.76	0	82.3
Watched Aston Replay (1 if watched)	424	0.55	0.50	0	1

Note: It has not been possible to obtain some marks for all of the students and therefore in these cases the number of observations is less than 424.

Table 2: Descriptive Statistics for Students who Watched Aston Replay

Variable	Observations	Mean	Std. Dev.	Min	Max
Number of lectures watched	235	5.28	3.45	1	11
Total amount of minutes watched	235	452.19	498.10	0.52	2668.27
Watched during the revision period only	235	0.71	0.45	0	1

Empirical Model

□ OLS Regressions:

$$y_i = x_i' \beta + \delta z_i + \epsilon_i$$

Where:

y_i is the % module market of student i .

x_i is a vector of characteristics of student i .

z_i is a dummy variable indicating whether or not student i **watched Aston Replay.**

ϵ_i is the error term.

Results

Table 3: Results

Variables	(1) BS1102 Mark	(2) BS1102 Multiple Choice Test Mark	(3) BS1102 Essay Mark
1 st Year Mark	0.976*** (0.0396)	0.901*** (0.0856)	0.847*** (0.0684)
Watched Aston Replay	3.722*** (1.119)	1.681 (1.224)	3.109*** (1.356)
Economics	5.825*** (1.397)	6.184*** (1.291)	5.215*** (1.510)
Male	0.587 (1.013)	1.607 (1.136)	0.467 (1.375)
Overseas Student	-0.826 (2.034)	0.372 (1.411)	-3.168 (2.243)
Age (in years)	-0.493* (0.274)	0.0312 (0.302)	-0.598** (0.242)
Socio-economic Class Dummies	Yes	Yes	Yes
Ethnicity Dummies	Yes	Yes	Yes
School Dummies	Yes	Yes	Yes
Programme Dummies	Yes	Yes	Yes
Constant	6.968 (6.121)	13.24 (9.043)	10.62 (6.883)
Observations	382	340	338
R-squared	0.725	0.597	0.501

Robust standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Headline results

- ❑ Aston Replay improve performance by 3.7% (95% confidence interval 1-6%) holding everything else constant.
- ❑ Watching Aston Replay only improves performance for the essay component, thus lecture capture may impact upon different modes of assessment.
- ❑ **Interesting additional result:**
 - ❑ When we include a dummy which equals 1 if the student watches Aston Replay only after the start of the revision period then we get an insignificant estimate. This suggests that it doesn't matter when a student watches, if they do, they improve performance.

Conclusions

- Lecture Capture has the potential to improve performance between 1-6%.
- It is not a “Magic Bullet” and these estimates may still be biased upwards due to self-selection.
 - We run a regression of the probability that a student watches Aston Replay - this increases the higher the students overall 1st year mark.
- More research is needed in to how they use it – does it “crowd out” other types of study or attendance?
- Further work is needed for other types of modules and disciplines.

Questions?

What have your experiences been?

