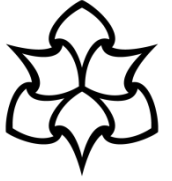


# **Educating the Netflix Generation: Evaluating the impact of teaching videos across a Science and Engineering Faculty**

**Dr Fiona Saunders, Sandor Gellen, Jack Stannard, Colin McAllister-Gibson, Dr Lisa Simmons, Professor Andy Gibson**

**SEFI Conference, 22<sup>nd</sup>-24<sup>th</sup> September 2020**



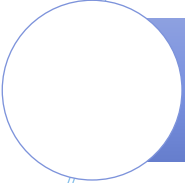
# Project Overview



Faculty wide project to support retention and progression of 6000 UG and PGT students



Over 2000 videos produced since 2017

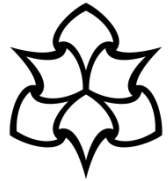


Core concept explainers, past exam solutions, coursework briefings, lab demos

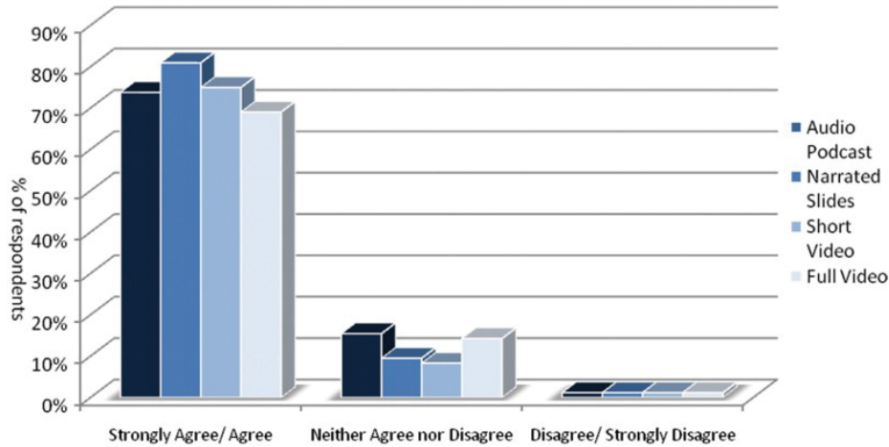


Positive feedback from staff and students

# Underpinning Theory and Ideas

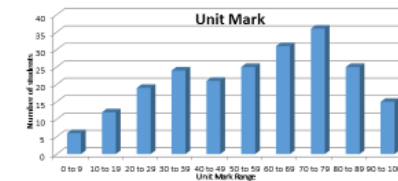


The rich-media tools aided or added to my understanding of the topics they covered (Qu13, 18,23,28)

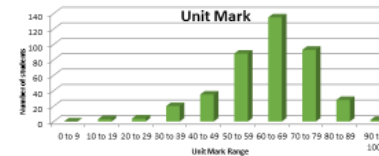


Source: Saunders and Hutt, 2014

Video Support

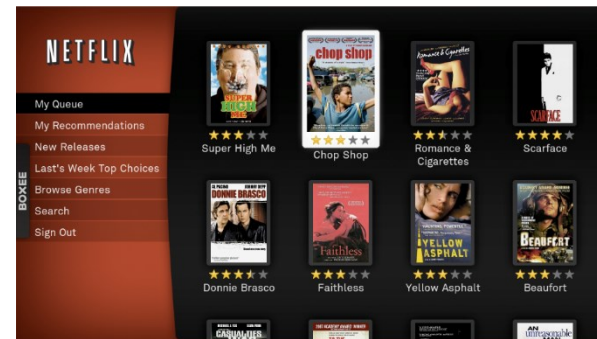


Without Video Support

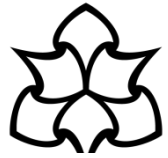


With Video Support (420 students, 100% progression)

Source: UoM, Unit Performance Electrical Energy Supply and Circuits 1 2014/2015



# What do the videos cover?



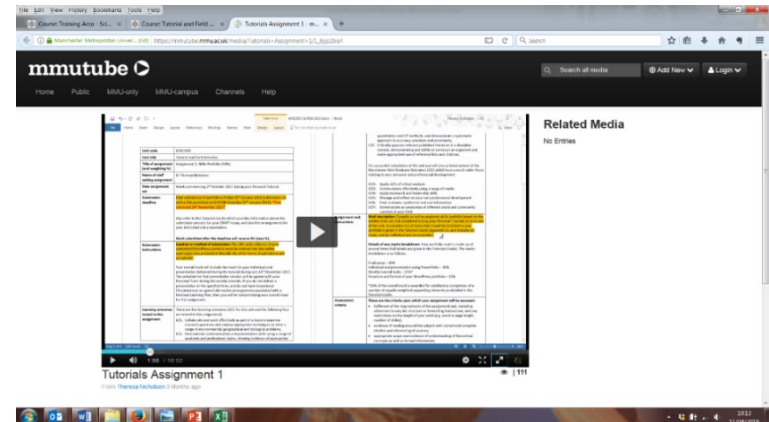
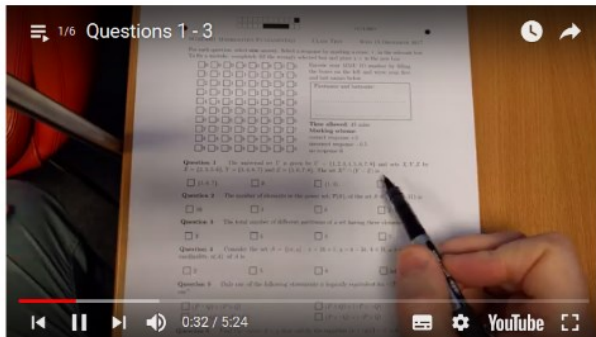
- revision tips
- exam paper explanations
- coursework guidance
- coursework feedback
- solutions to tutorial problems
- core concept videos

Particle Animations (explained)



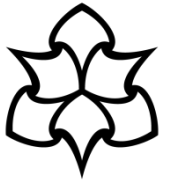
## Class test information from term 1

The playlist below contains videos discussing the solutions to the questions from the MCQ in-class test from December 2017.

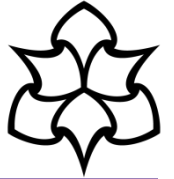


Source: MMUtube on Moodle

Below is a link to a copy of the test with the correct responses indicated.



**Does watching the  
videos improve  
student  
performance?**



# 1. Research Design

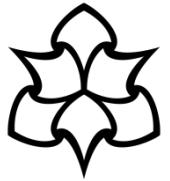
Aim: Investigate whether students' level of engagement with videos impacted academic performance

Quantitative Research Design: Data 8 units across the Faculty (4 first year and 4 second year units)- 1248 students

Regression Analyses (Multiple Regression & Logistic Regression)

**Outcome variable** - final unit marks **Independent variable of interest** – level of engagement with videos

## 3. Key Findings



### Linear regression – unit performance v's video views

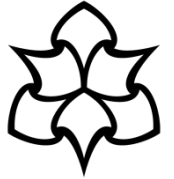
Model included the following predictors: video view, level of study, disability, first generation, age, entry qualification, clearing, commuting, multiple deprivation and ethnicity

Entry qualification ( $b = .725, p < .001$ ) and ethnicity ( $b = .311, p < .001$ ) are strongest predictors of unit mark

Model produced  
 $R^2 = .186, F(11, 784) = 17.51, p < .001$

Adjusted  $R^2$  indicates that 18.6% of the variance in unit mark is explained by those predictors

Video engagement also significant predictor of unit mark ( $b = .110, p < .001$ ),



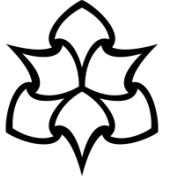
Logistic regression – view/no view against  
pass/fail, above 60% and above 70%

Viewing at least one video correlates with  
likelihood of getting a mark above 60%

Even stronger predictor  
of getting a 1<sup>st</sup> class  
mark

But it does NOT predict  
failure (below 40)  
significantly



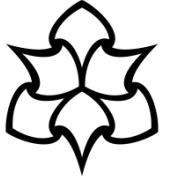


# Summary

Our primary contribution is to show a direct correlation between viewing videos and unit performance

Although effect size was small, video view was the only significant contributor to improved unit performance besides entry qualification and ethnicity

The impact of the videos on student performance is most pronounced at the 60% mark (important given current sector focus on teaching metrics: e.g good honours)



# Thanks for watching



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