

# Teaching Dilemma of the Decade: Student Performance versus Feedback

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## Economics teaching at Heriot-Watt University

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- » Microeconomics (AA) and macroeconomics (BA) separate → merged into IE (S1) and EC (S2)
- » In 2018-19, approximately 650 students in IE
- » Students from various degrees and Schools
  - › e.g. economics, accountancy, finance, business (common first year)
  - › But also actuarial maths, geography, psychology

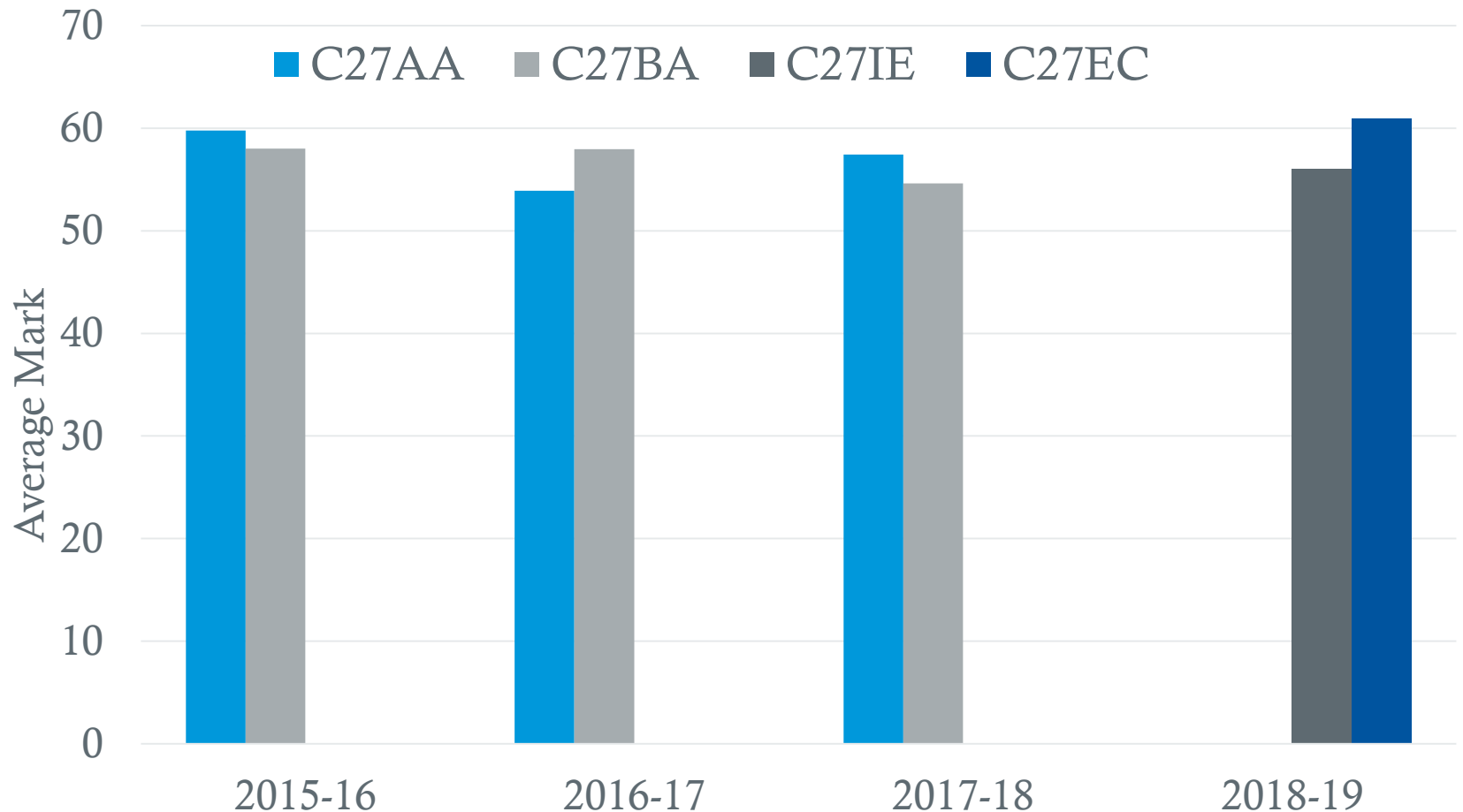
## Economics teaching at HWU: old versus new

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Semester	Until 2018-19	2018-19 onwards
1	AA (micro)	IE (micro + macro)
2	BA (macro)	EC (micro + macro)

- » Students from various degrees and Schools
  - › e.g. economics, accountancy, finance, business (common first year)
  - › But also actuarial maths, geography, psychology

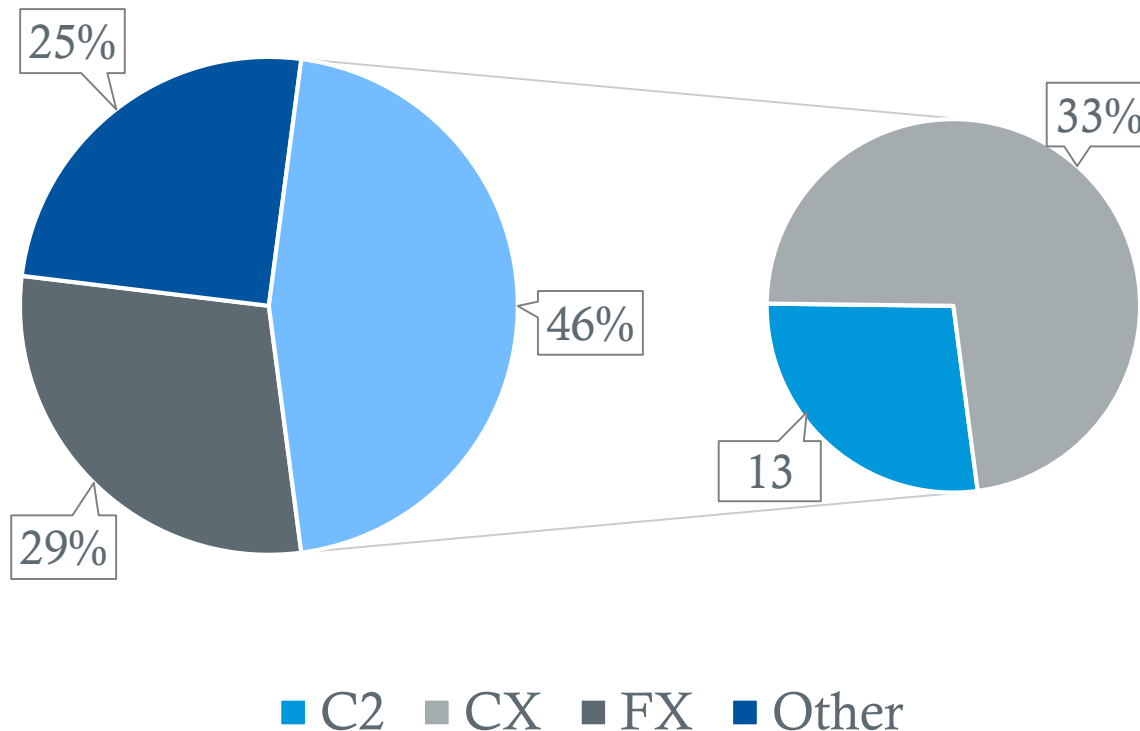
## Marks by course over time



## Cohort composition by degree programme

IE (Edinburgh 2018-19) student composition  
by programme

» Students from  
various degrees  
and Schools



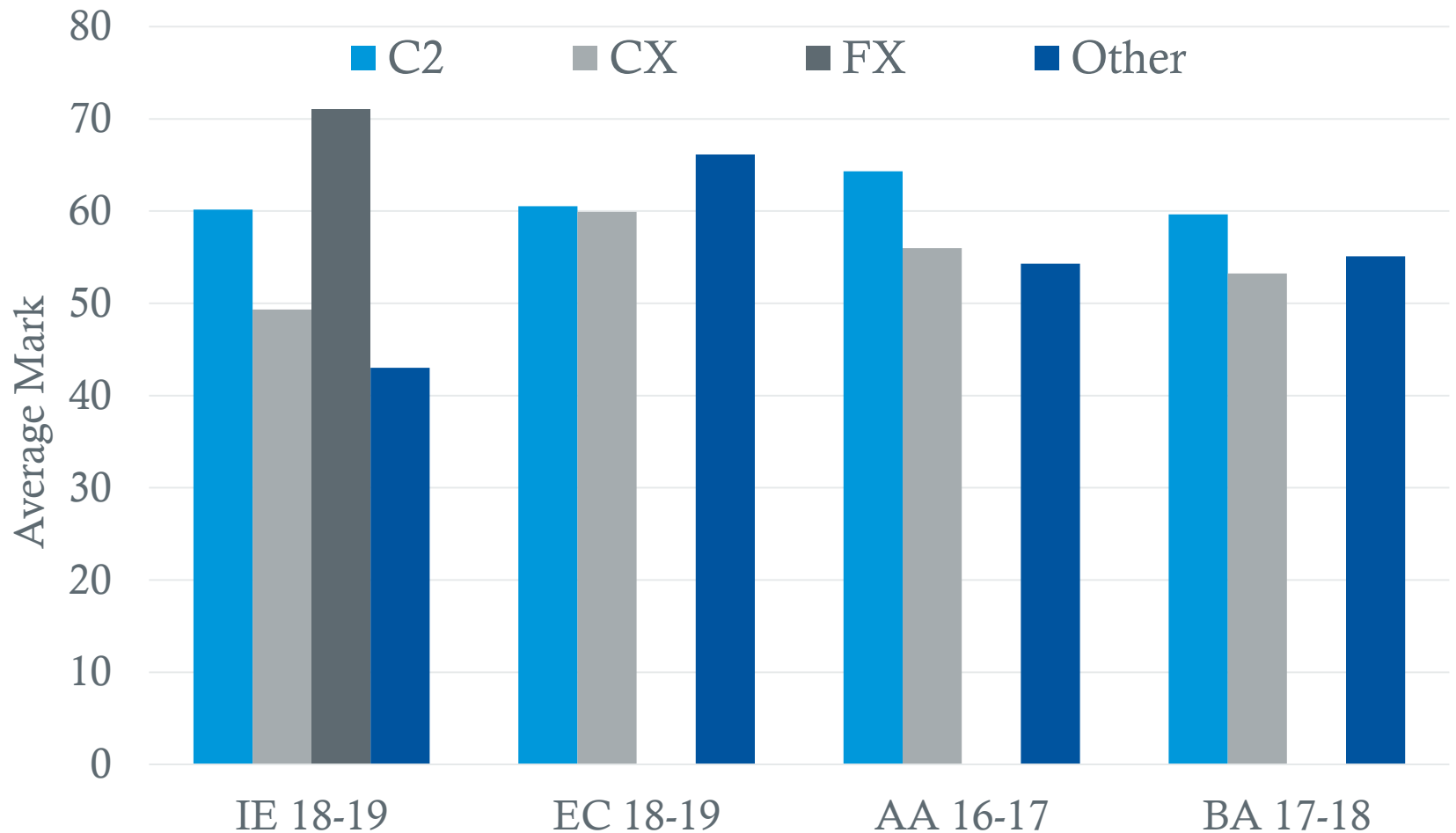
> C2: Economics

> CX:  
Accountancy,  
Finance,  
Business

> FX: Actuarial  
maths

> Other:  
geography,  
psychology,  
others.

## Marks by student programme over time



## Economics teaching at HWU: old versus new

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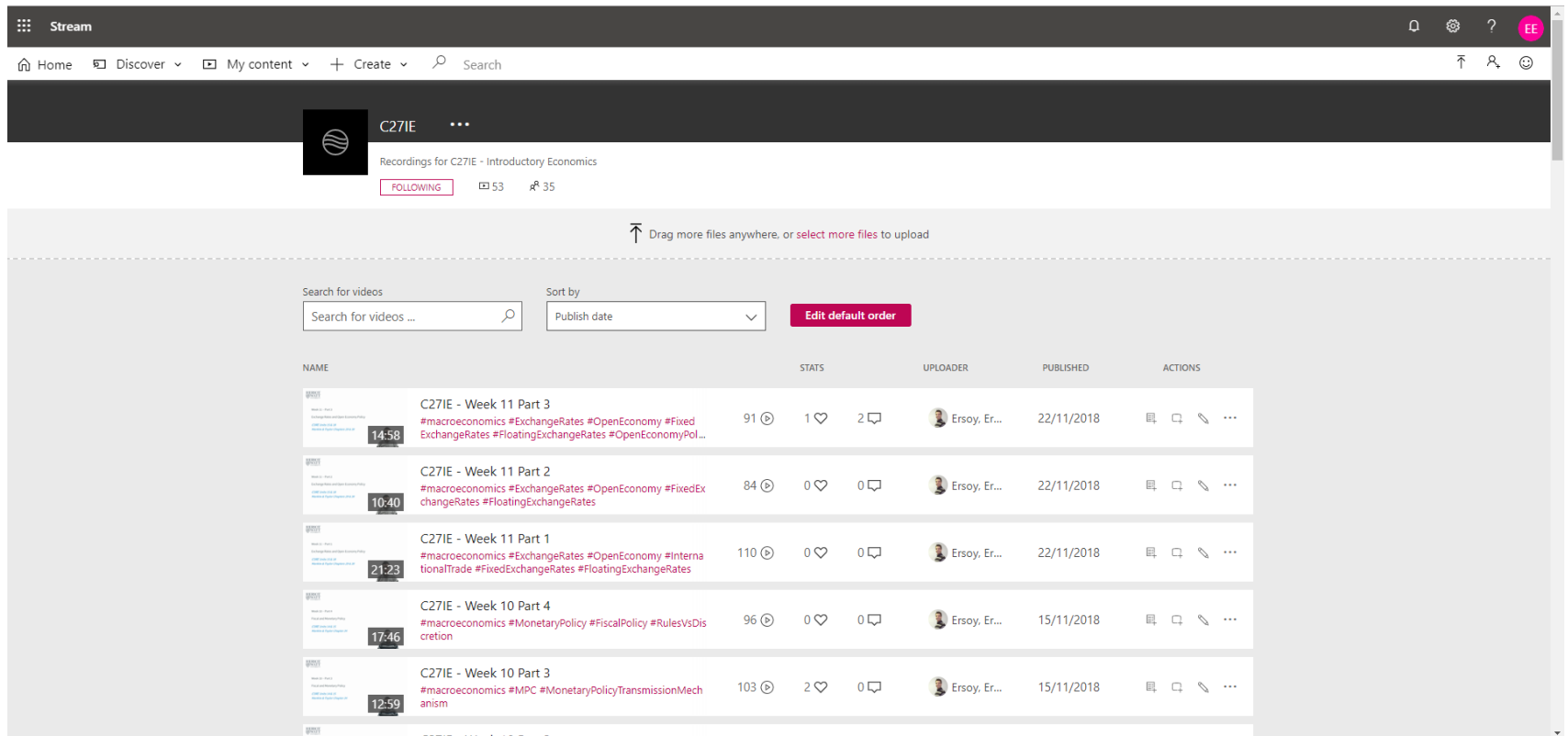
- » All courses taught at 3 campuses (Edinburgh, Dubai, Malaysia)
  - › Online/hybrid implemented only in Edinburgh

IE vs AA	2017-18	2018-19
Edinburgh	Traditional	Online/hybrid
Dubai	Traditional	Traditional

- » Edinburgh → treatment group
- » Dubai → control group

# Economics teaching at HWU: online learning

## » Series of web talks



The screenshot shows a Stream video player interface. At the top, there's a navigation bar with 'Stream' and various icons. Below it, a search bar and a list of items are visible. The main content area displays a list of video recordings for 'C27IE - Introductory Economics'. The list includes video titles, durations, view counts, like counts, comment counts, uploader names, and publication dates. The videos are sorted by 'Publish date'.

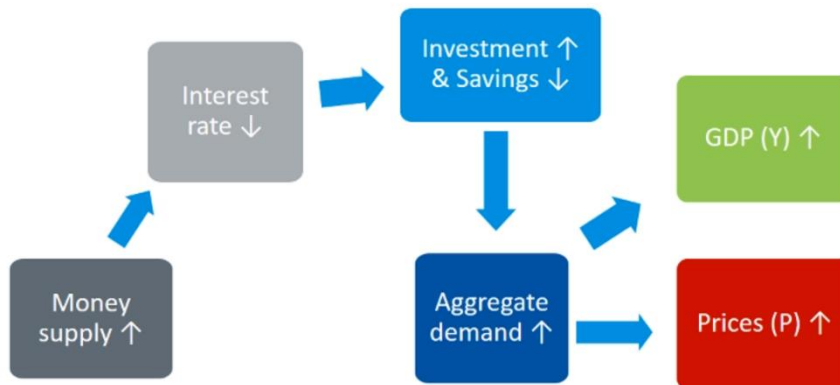
NAME	STATS	UPLOADER	PUBLISHED	ACTIONS
C27IE - Week 11 Part 3 #macroeconomics #ExchangeRates #OpenEconomy #FixedExchangeRates #FloatingExchangeRates #OpenEconomyPol...	91 14:58	Ersoy, Er...	22/11/2018	
C27IE - Week 11 Part 2 #macroeconomics #ExchangeRates #OpenEconomy #FixedExchangeRates #FloatingExchangeRates	84 10:40	Ersoy, Er...	22/11/2018	
C27IE - Week 11 Part 1 #macroeconomics #ExchangeRates #OpenEconomy #InternationalTrade #FixedExchangeRates #FloatingExchangeRates	110 21:23	Ersoy, Er...	22/11/2018	
C27IE - Week 10 Part 4 #macroeconomics #MonetaryPolicy #FiscalPolicy #RulesVsDiscretion	96 17:46	Ersoy, Er...	15/11/2018	
C27IE - Week 10 Part 3 #macroeconomics #MPC #MonetaryPolicyTransmissionMechanism	103 12:59	Ersoy, Er...	15/11/2018	



## Economics teaching at HWU: online learning

- » Series of web talks
  - » [Link to week 10 part 3](#)

### Monetary policy transmission mechanism



- » When money supply increases, interest rate falls based on the money market equilibrium
- » When AD increases, the curve shifts to the right
  - › AS/AD equilibrium →  $Y \uparrow$  and  $P \uparrow$



## Economics teaching at HWU: online learning

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» Recording studio

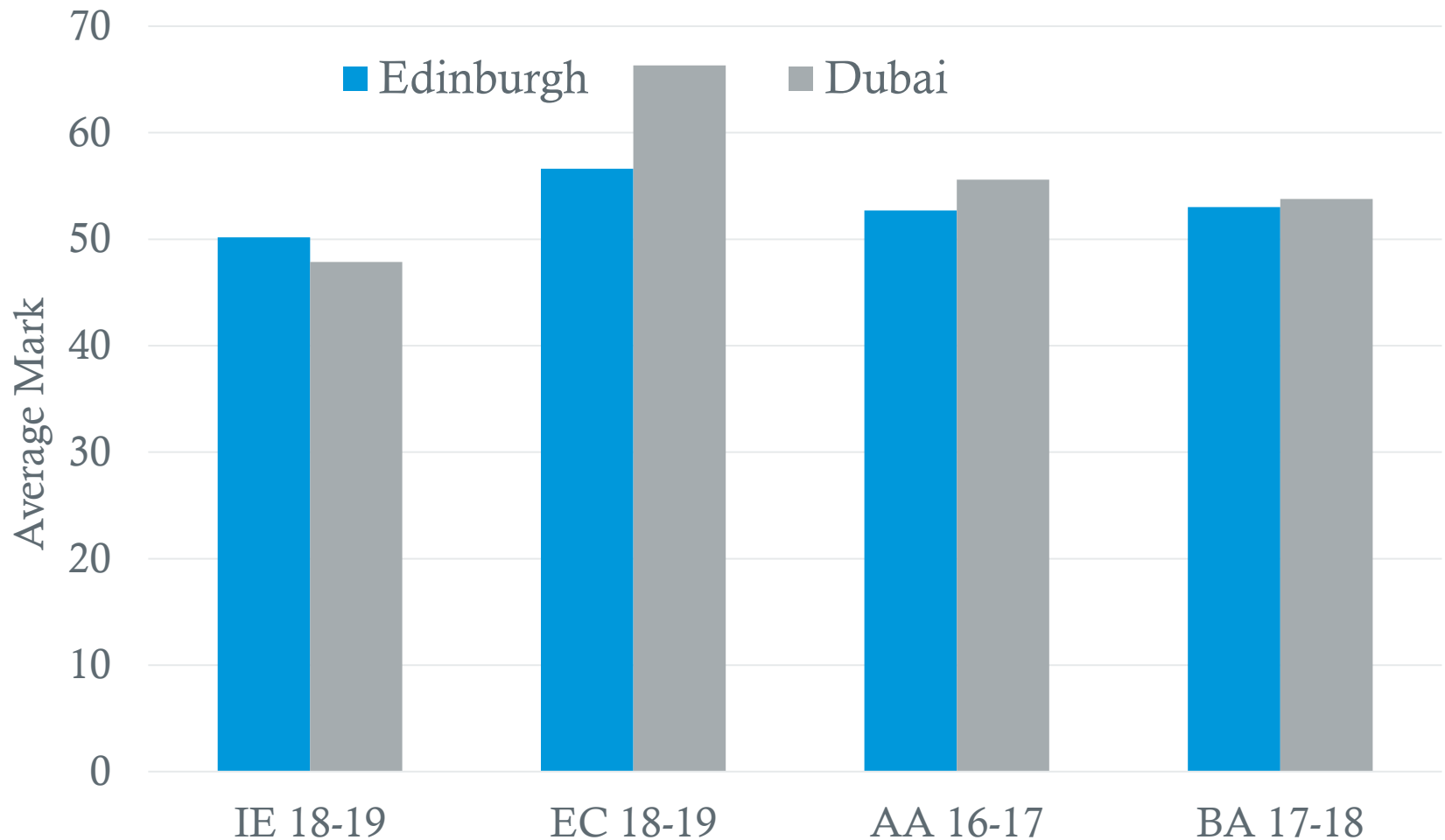


## Student composition in Edinburgh and Dubai

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- » No economics degree in Dubai
- » Most Dubai students on “CX” programmes
  - › Accountancy, Finance, Business programmes
- » Need to focus on this cohort’s performance

## Marks of CX students in Edinburgh and Dubai over time



## Impact of online learning on student performance

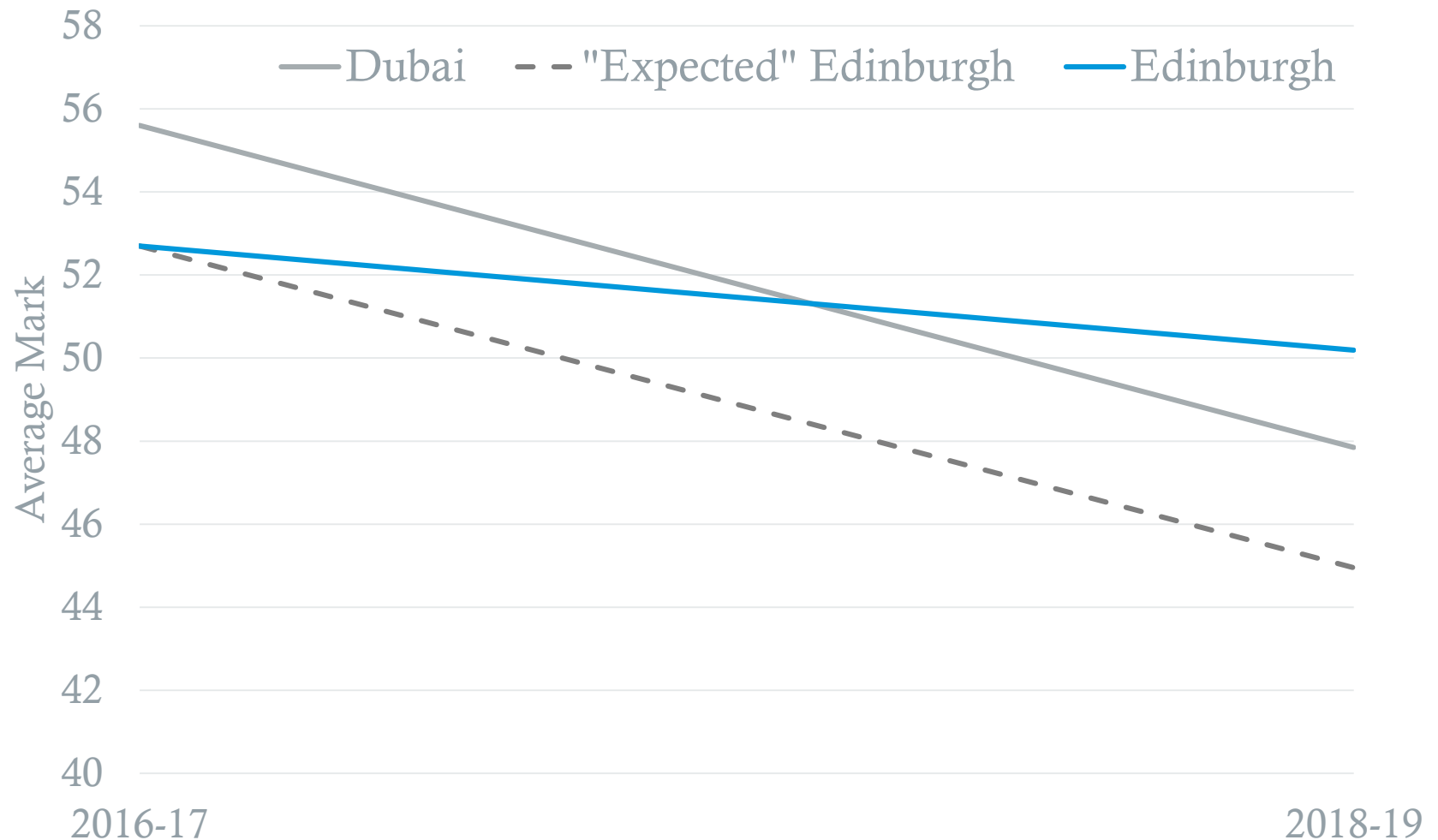
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- » Difference-in-differences to estimate the impact on average mark across the two groups

IE vs AA	Edinburgh	Dubai	Difference
2016-17	52.70	55.60	-2.90
2018-19	50.19	47.85	2.34
Change	-2.51	-7.75	5.24*** [1.50, 8.97]

- » Positive impact on average mark

## Positive impact of online teaching on average mark (CX)



## Impact on student performance

IE vs BA	Edinburgh	Dubai	Difference
2016-17	55.64	62.97	-7.34
2018-19	50.19	47.85	2.34
Change	-5.45	-15.12	<b>9.68***</b> <b>[5.59, 13.76]</b>

IE vs BA	Edinburgh	Dubai	Difference
2017-18	53.01	53.77	-0.76
2018-19	50.19	47.85	2.34
Change	-2.82	-5.92	<b>3.10</b> <b>[-1.44, 7.64]</b>

## Impact of online learning on student feedback

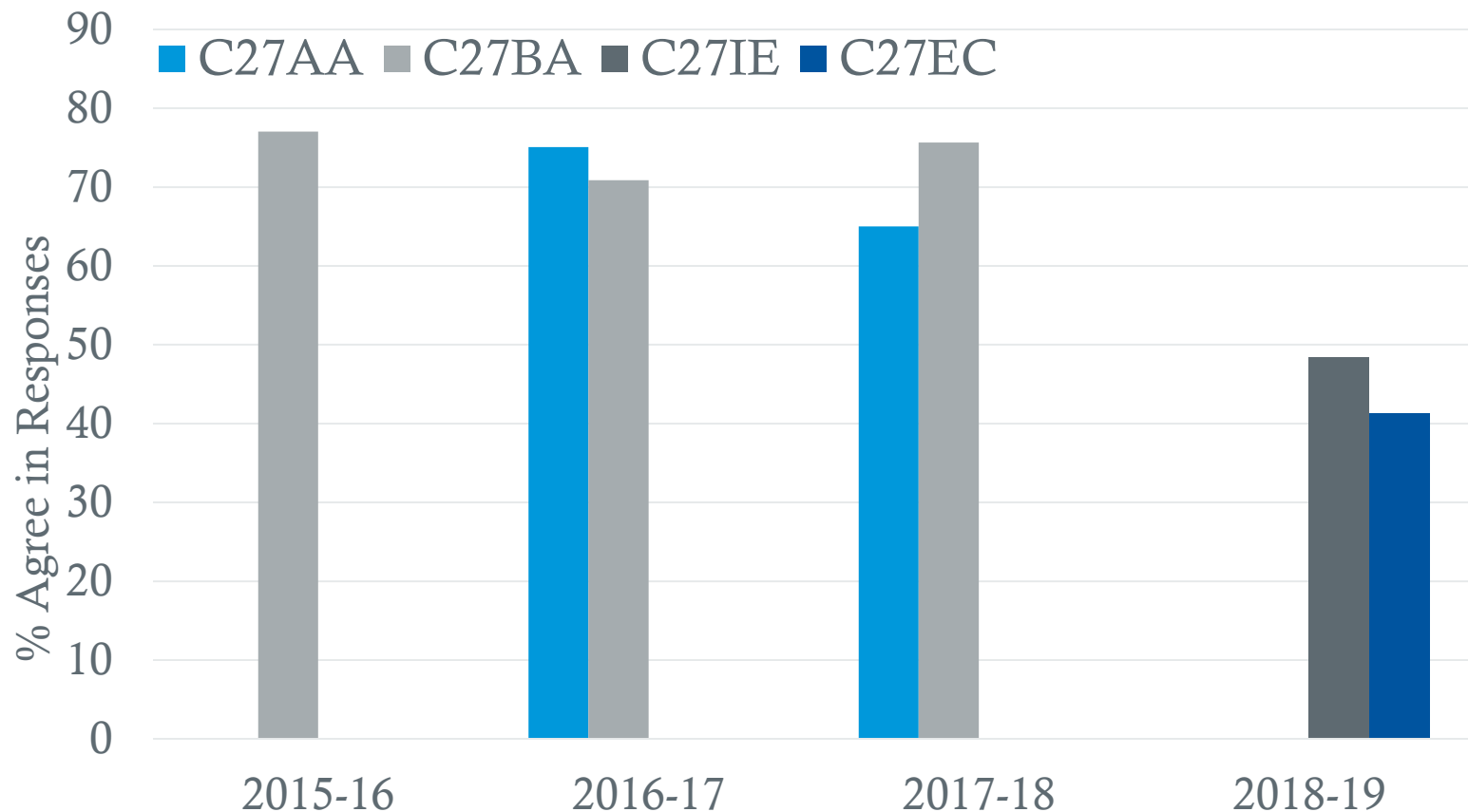
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- » Course feedback survey
  - › 11 questions
  - › Q1: course was intellectually stimulating
  - › Q2: instructors were available to students
  - › Q3: instructors were effective in teaching
  - › Q7: workload on course was manageable
  - › Q8: instructor's materials well prepared and carefully explained
  
- » Response rates vary between 4% (Edinburgh EC, 2018-19) to 31% (Edinburgh AA, 2016-17)



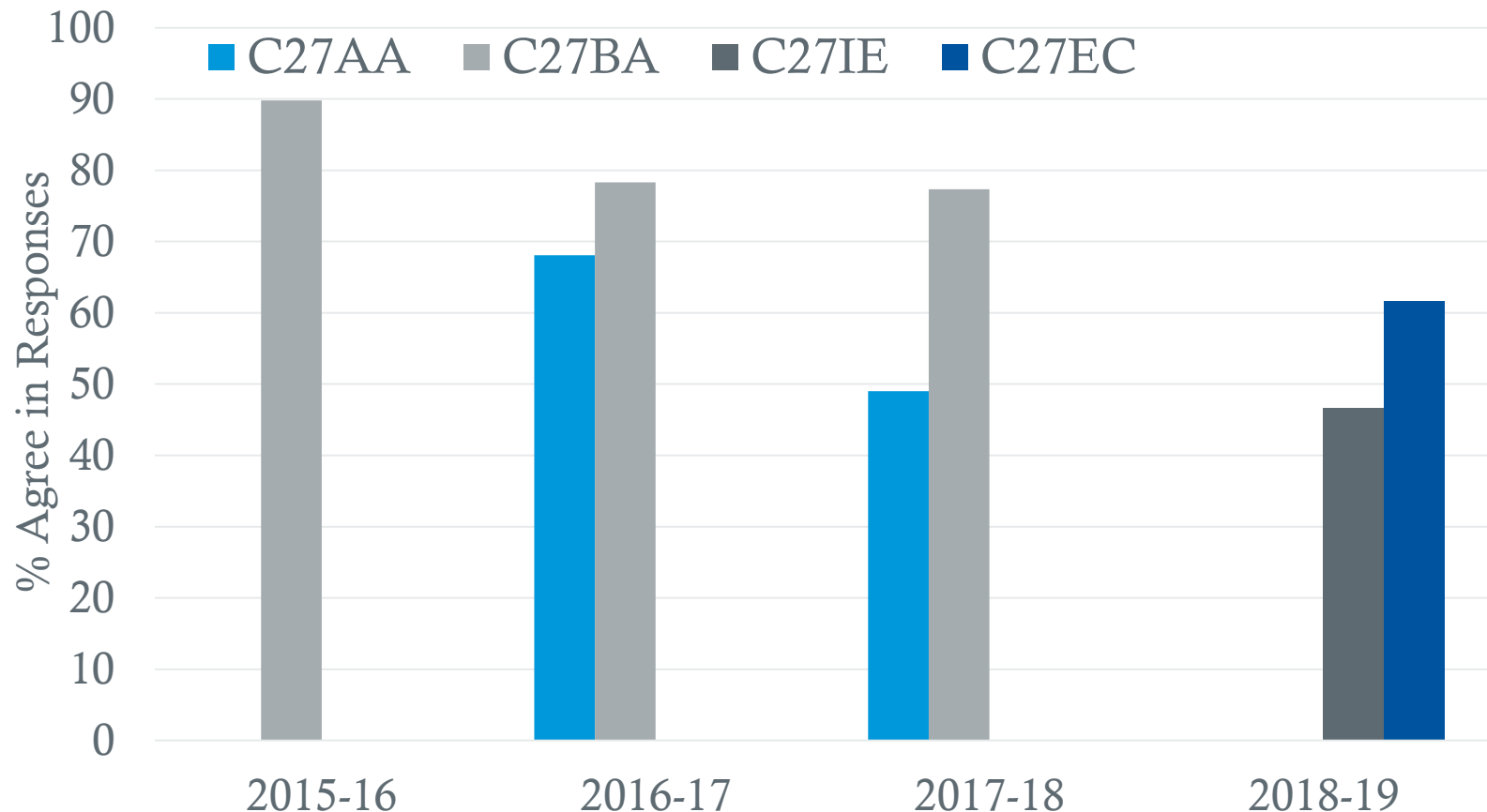
## What the students said (CFS Question 1)

» Q1: course was intellectually stimulating



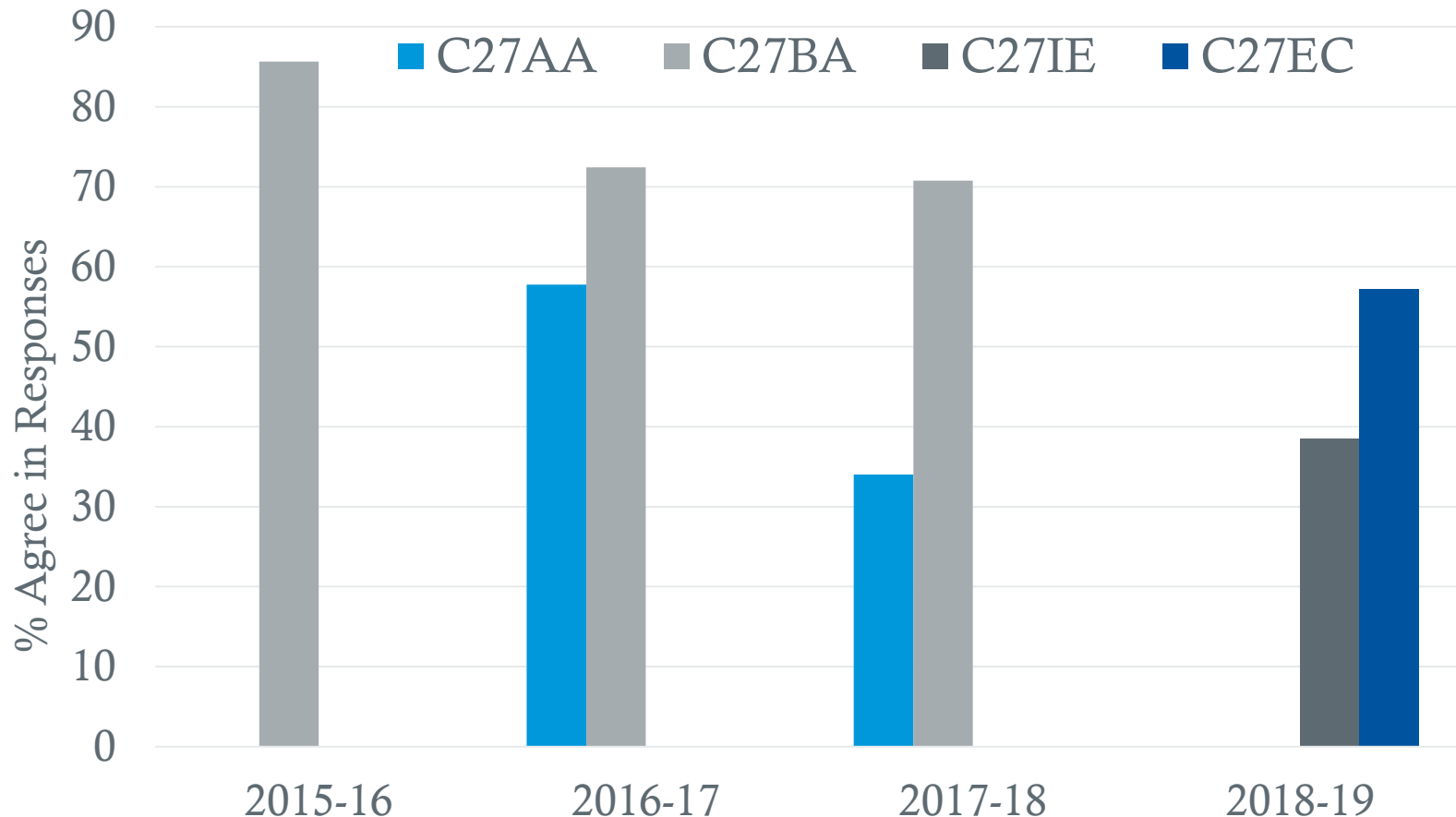
## What the students said (CFS Question 2)

» Q2: instructors were available to students



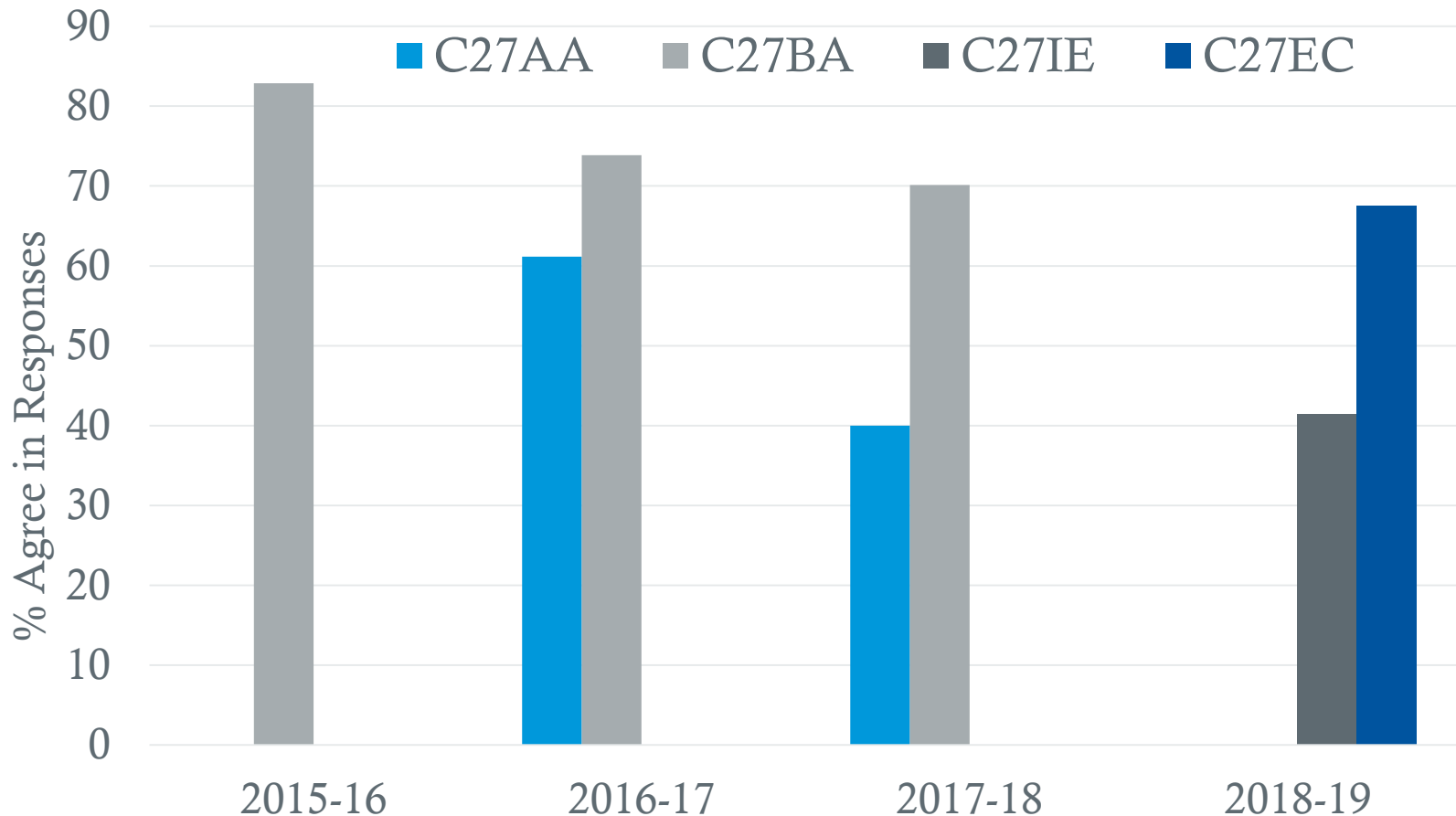
## What the students said (CFS Question 3)

» Q3: instructors were effective in teaching



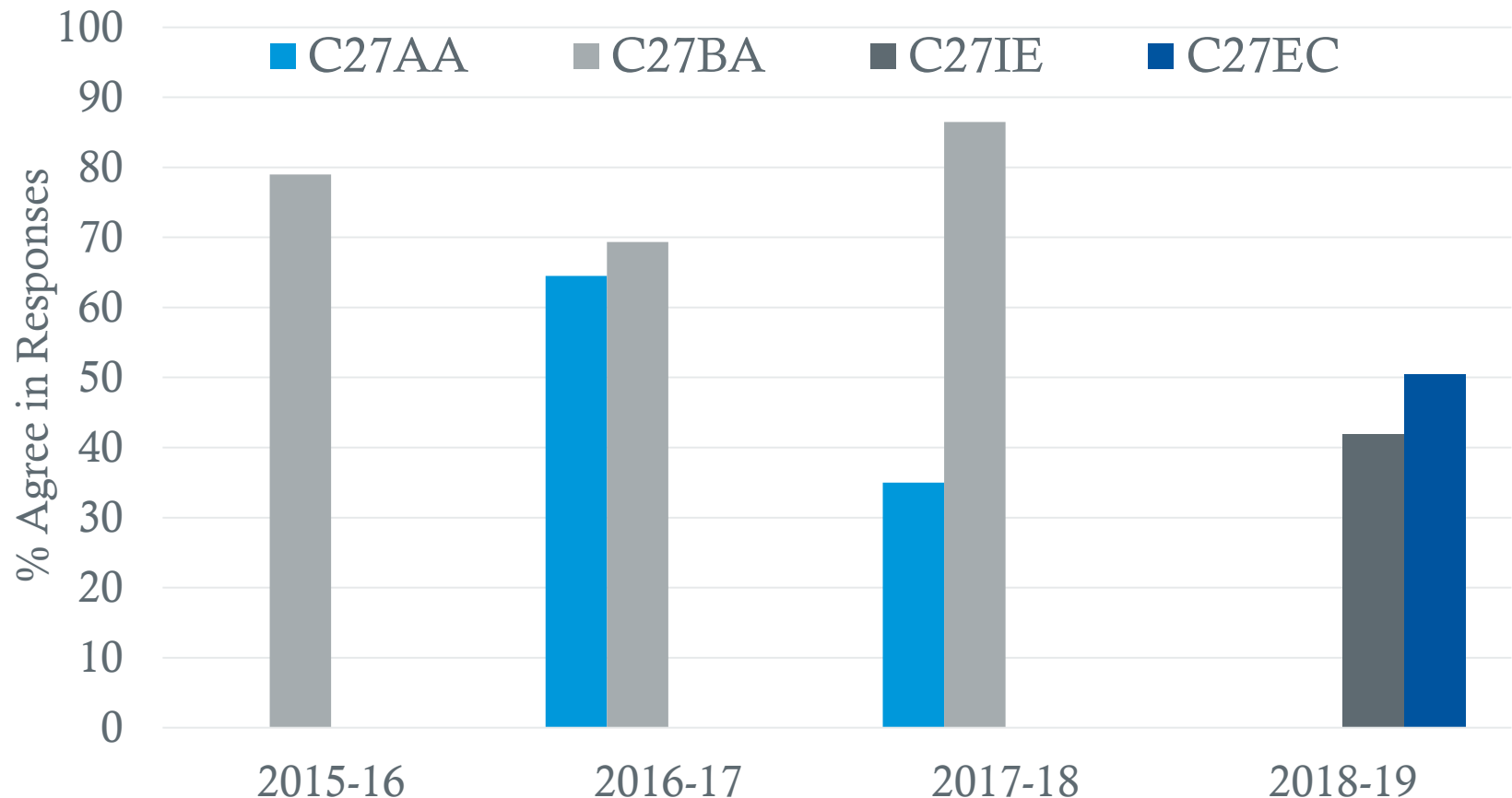
## What the students said (CFS Question 7)

» Q7: workload on course was manageable



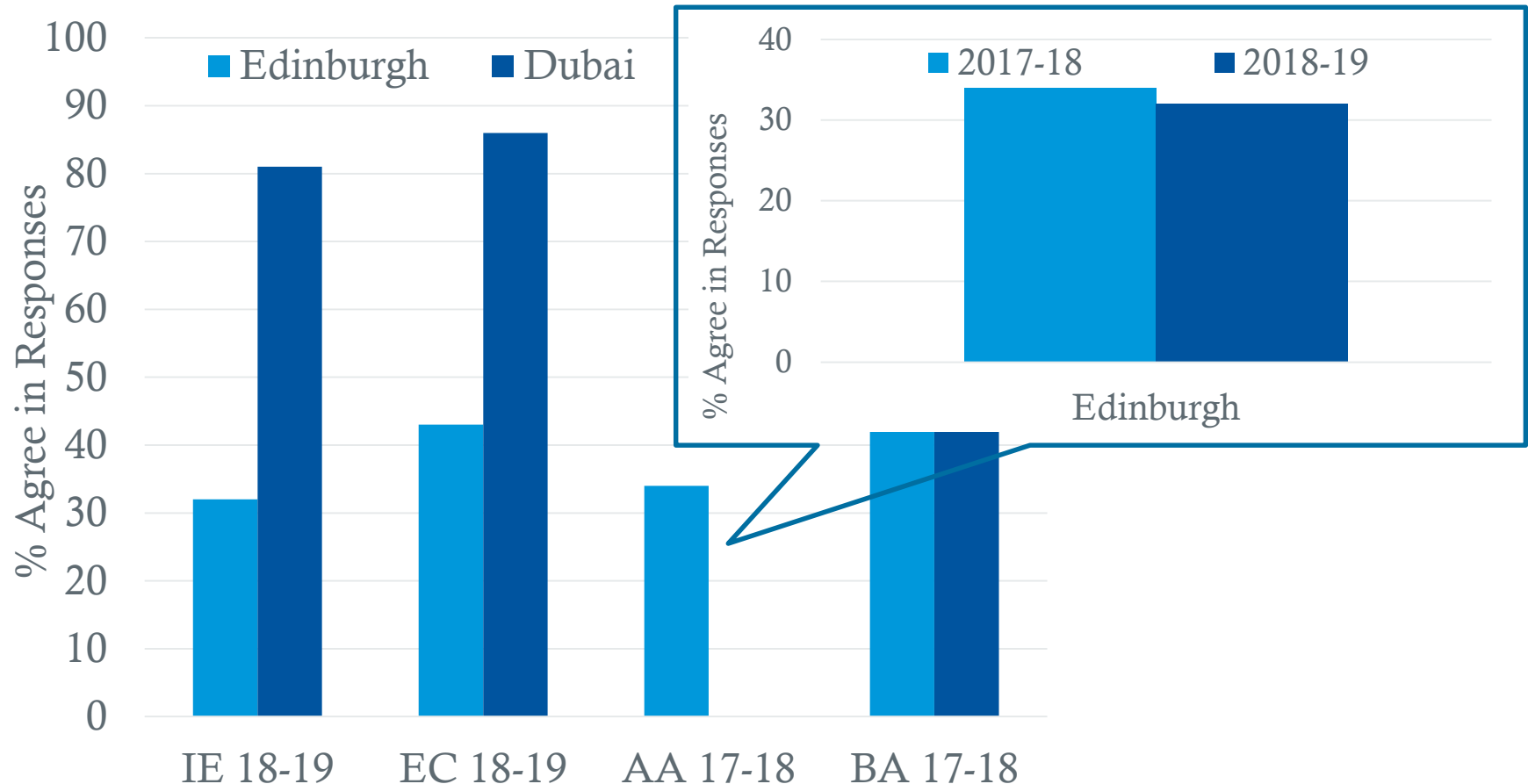
## What the students said (CFS Question 8)

» Q8: instructor's materials well prepared and carefully explained

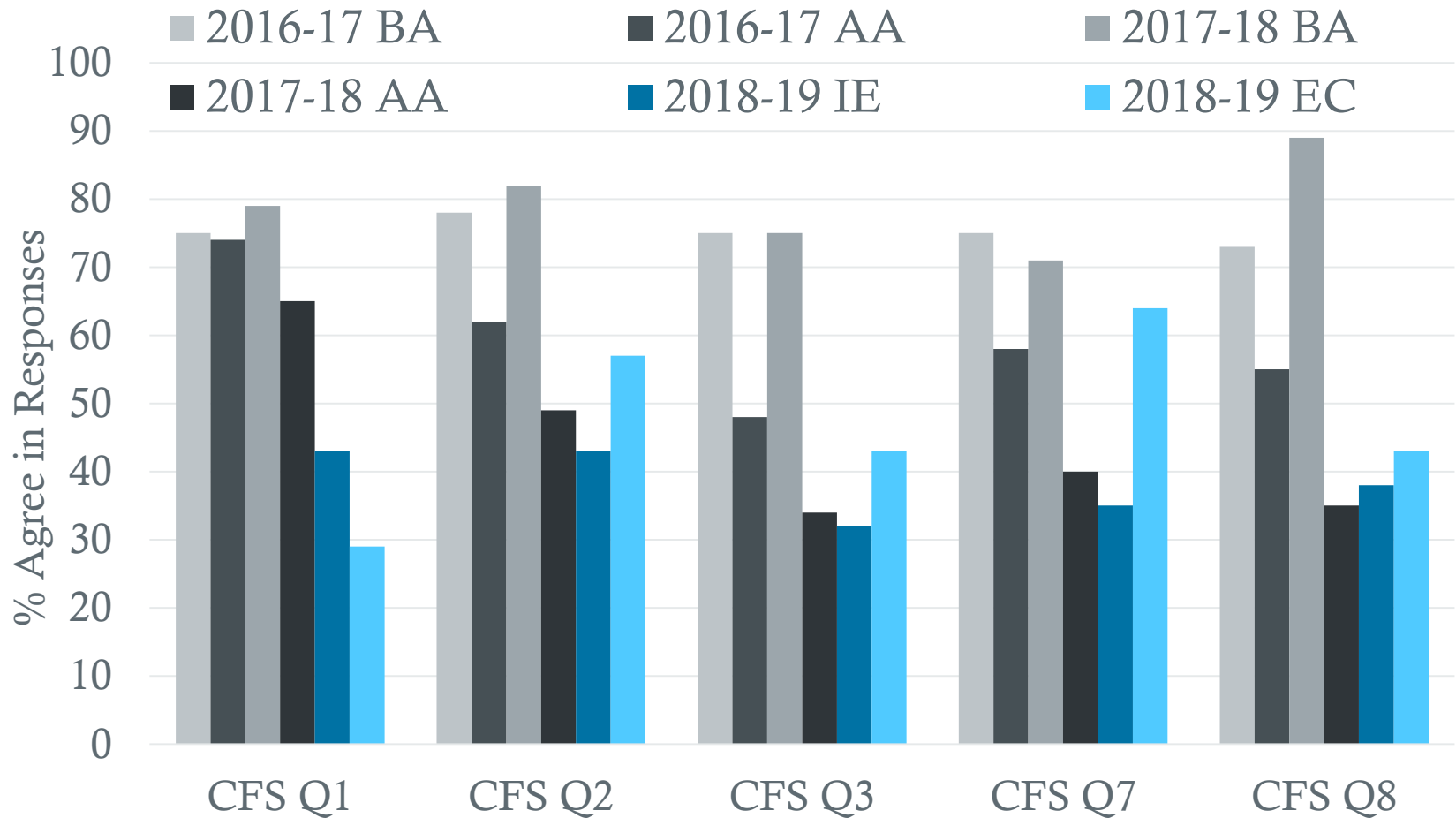


## Student feedback (CFS Q3) – Edinburgh vs Dubai

» Q3: instructors were effective in teaching



## What Edinburgh students said – feedback across years



## What the students wrote (IE, Edinburgh, 2018-19)

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» Response rate approximately 20% (125 out of 621)

» “What were the best parts of this course?”

Assessment schedule and quick feedback were helpful in learning

Structure of lectures and video upload schedule.  
“Interesting content motivated me to keep up to date with online lectures.”

Course materials and slides designed well

Each topic thoroughly explained

Easy to communicate with lecturers

“Podcasts are really useful and an easy way to go at your own pace over the week. It really helped to be able to pause and go back over something that I didn’t fully understand.”

Feedback and [lecturers’ efforts to make] sure everyone was watching the lectures online

Being able to view course materials at home and asking questions in tutorials



## What the students wrote (IE, Edinburgh, 2018-19)

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» Response rate approximately 20% (125 out of 621)

» “Where can this course be improved?”

Workload is too heavy + too many podcasts at times + difficult to keep up

More contact with lecturers would be valuable and would motivate students

Disconnect between podcasts and tutorials/book

Lectures instead of podcasts

A guide showing when to view each podcast so students know they are up to date with the tutorials would be helpful

Review sessions should be lecturers covering main points instead of Q&A

## Actual learning versus feeling of learning

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# Measuring actual learning versus feeling of learning in response to being actively engaged in the classroom

Louis Deslauriers<sup>a,1</sup>, Logan S. McCarty<sup>a,b</sup>, Kelly Miller<sup>c</sup>, Kristina Callaghan<sup>a</sup>, and Greg Kestin<sup>a</sup>

<sup>a</sup>Department of Physics, Harvard University, Cambridge, MA 02138; <sup>b</sup>Department of Chemistry and Chemical Biology, Harvard University, Cambridge, MA 02138; and <sup>c</sup>School of Engineering and Applied Sciences, Harvard University, Cambridge, MA 02138

Edited by Kenneth W. Wachter, University of California, Berkeley, CA, and approved August 13, 2019 (received for review December 24, 2018)

- » “Students in active classrooms learned more [...], but their perception of learning [...] was lower than that of their peers in passive environments.”
  
- » “This suggests that attempts to evaluate instruction based on students’ perceptions of learning could inadvertently promote inferior (passive) pedagogical methods.”

## Reflecting on this experience

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- » We made mistakes
  - › Overestimated ease of access to the technology and resources
  - › Assumed students would work out too much for themselves
  - › Assumed the structure imposed by recordings, weekly assignments, weekly tutorials, and regular review sessions would be sufficient
  
- » What we are doing to address some of these
  - › More structure, more interaction in videos, more small milestones
  - › “Unlocking” material as students progress through recordings
  - › A collaborative tutorial session with multiple campuses and tutors in the audience

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