

MA Conference 2017

*Common Denominators: connections  
within and beyond mathematics*

*Beyond GCSE resits: provision  
for post 16s without a C+*

---

GRAHAM GRIFFITHS,

UCL IOE, ALM, NANAMIC

# Introductions

---

Tell us

- your name,
- institution, and
- your experience of / interest in teaching mathematics post 16.

# Background

---

Raising of participation age

Wolf recommendations led to requirement to repeat GCSE if not C+

Revision of GCSE

& Worrying statistics

# Ofqual data comparing 2015 and 2016

---

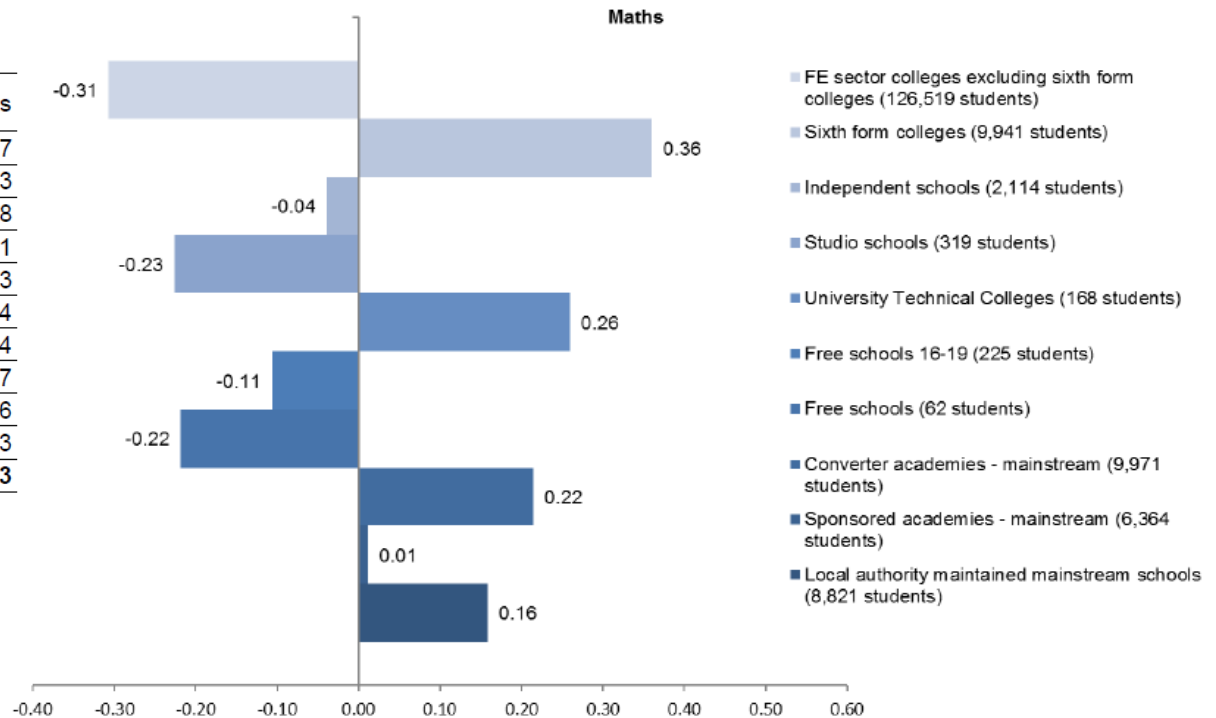
	Cumulative percentage at grade			
	2015		2016	
	16-year-olds	Post-16	16-year-olds	Post-16
A*	6.7	1.0	7.0	0.8
A	18.6	3.1	19.7	2.4
C	69.1	35.8	70.5	29.5

<https://www.gov.uk/government/publications/detailed-analysis-of-summer-2016-gcse-results>

# Dfe Data on progress post 16

Maths		
Prior attainment point score	No. Students	Average progress
0	10,271	0.37
0.4	3,967	0.03
0.8	17	0.08
1	18,588	-0.11
1.5	75	0.63
1.7	46	-0.34
2	25,136	-0.14
2.5	3,488	-0.37
3	33,335	-0.26
4	62,529	-0.13
<b>All</b>	<b>157,452</b>	<b>-0.13</b>

Source: 16-18 attainment data



Source: 16-18 attainment data

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/583857/Progress 8 school performance measure Jan 17.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/583857/Progress_8_school_performance_measure_Jan_17.pdf)

# Background

---

Prof Adrian Smith report to be published

- Repeats not helpful
- Revise alternatives
- Online learning likely to be a way forward

# Discussion 1

---

Do you think 16-18 learners should repeat GCSE?

# Discussion 1

---

- Many employers and educational progression require GCSE (although some value Functional skills)
- A qualification understood by many - Wolf argues that GCSE is a known 'brand' that could be reformed
- What about adults who also end up taking examinations?



# Alternatives

---

Previous – Key Skills (portfolio plus test)

Existing (just) – Free Standing Mathematics Qualifications

Existing – Functional skills

Others?

## Discussion 2

---

What do you think of the alternatives?

# Discussion 2

---

Portfolios were not considered  
'rigorous' enough

Difficulties with equivalencies if using a  
suite

Tensions between what works with  
older adults and young people

# Potential approaches to consider

---

Realistic Mathematics Education –  
employing appropriate models

Contextualised / embedded mathematics

Critical mathematical literacy – utilising real  
news items

Financial literacy

Language aware

## Discussion 3

---

What sort of approaches to mathematics matter to you? Why?

# Discussion 4

---

Should there be a special GCSE for 16+?

# Discussion 4

---

There was (the old SEG modular programme)

Included income tax etc

---

## **Income tax (lowest rate and basic rate)**

Most people who pay income tax earn more than £5835, and hence have a taxable income in excess of £1500.

Taxable income between £1500 and £28 000 is taxed at 23p in the pound, i.e. 23%. Since most people pay the majority of their income tax at this rate, the 23p rate is known as the basic rate.

### **Example**

Mr Jackson is an engineer and earns £21 250 per year. His personal tax allowance is £4557. How much income tax does he pay per year?

$$\begin{aligned}\text{Annual taxable income} &= \text{Annual gross pay} - \text{Total allowance} \\ &= £21\,250 - £4557 = £16\,693\end{aligned}$$

$$\begin{aligned}\text{Income taxable at basic rate} &= \text{Taxable income} - £1500 \text{ (maximum at} \\ & \hspace{15em} \text{lowest rate)} \\ &= £15\,193\end{aligned}$$

$$\begin{aligned}\text{Income tax at lowest rate} &= 10p \times 1500 = £150 \\ \text{Income tax at basic rate} &= 23p \times 15\,193 = £3494.39 \\ \text{Total annual income tax} &= £3644.39\end{aligned}$$

# The future?

---

## Tensions

Maths as filter  $\Leftrightarrow$  min expectation

Approaches to teaching  $\Leftrightarrow$   
approaches to assessment

Young people  $\Leftrightarrow$  adults



# Thank you

---

Graham Griffiths [g.griffiths@ucl.ac.uk](mailto:g.griffiths@ucl.ac.uk)

PGCE Post Compulsory Mathematics with  
numeracy

ALM Treasurer [www.alm-online.net](http://www.alm-online.net)

NANAMIC committee [www.nanamic.org.uk](http://www.nanamic.org.uk)