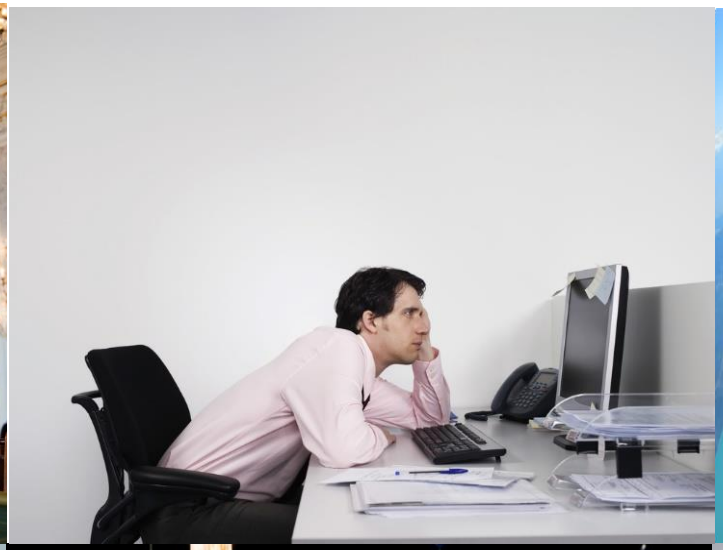
Social science counts!

Steve Grundy
Programme Manager - Q- Step
The Nuffield Foundation

Outline

- The Nuffield Foundation
- Q-Step
- CORE Economics



The Foundation

- Established in 1943
- Funds research, analysis, and student programmes that advance educational opportunity and social well-being across the United Kingdom
- Thematic areas - education, welfare and justice
- Over £10m each year on research and programmes - £70m over next 5.
- Long-standing interest in maths education and quantitative skills shortage


2+2=5

A quantifiable quantitative problem

- Survey of Adult Skills (PIAAC) - 27% of adults are low performers in either literacy or numeracy skills and many have low readiness to learn (OECD, 2017).
- Mathematics scores of 15-year-old students have not improved since 2003 (OECD, 2016).
- 25% of UK's graduates aged 20-34 years-old have numeracy skills below level 2 (OECD, 2017).
- Only 13% of young people in the UK study mathematics beyond 16 (Royal Society, 2018)
- At least one in four economically active adults is functionally innumerate (Royal Society, 2018)

Teacher : What is the full form of Maths?

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Student : Mentally Affected Teachers Harassing Students.

MATH

Mental
Abuse
To
Humans.

fb.com/minionquote

A perennial problem

- The Smith review - 2017
- ‘Data is the new oil’ - 2017
- Signalling re maths skills – Royal Society, Advisory Committee on Mathematics Education, 2016
- ‘Count us in’ – British Academy, 2015
- UK is a post-16 mathematics outlier – OECD, 2014
- UK has the least quantitative graduates & adults in OECD, 2013…

…and before all of that there was ‘Strategically important and vulnerable subjects’ – (HEFCE, 2005)


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'We hate math,' say 4 in 10 — a majority of Americans

WASHINGTON — People in this country have a love-hate relationship with math, a favorite school subject for some but just a bad memory for many others, especially women.

In an AP-AOL News poll as students head back to school, almost four in 10 adults surveyed said they hated math in school, a widespread disdain that complicates efforts today

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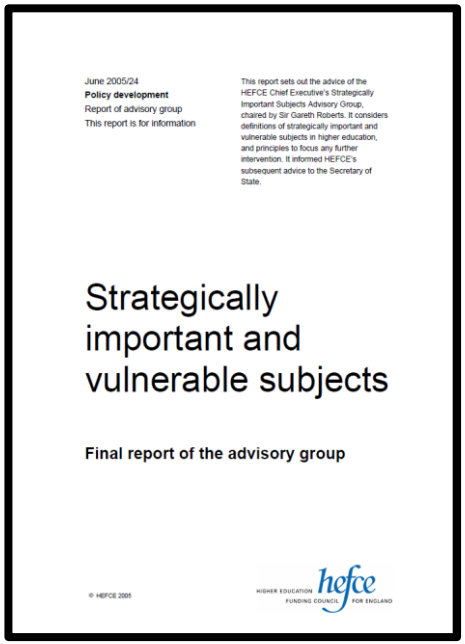
Q-Step

A step-change in quantitative social science skills

Funded by the Nuffield Foundation, ESRC and HEFCE

The birth of Q-Step

- Longstanding interest in mathematics education
- Interest in the use of data to answer social science questions
- Concerns over the limited pool of data specialists in social research
- 2005 HEFCE report – 'Strategically important and vulnerable subjects' – included quantitative social sciences
- HEFCE, ESRC, RSS and BA pilots and then….
- …2012 HEFCE review of SIVS policy called for more strategic intervention
- Q-Step is born!



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What is Q-Step?

- A strategic response to the shortage of quantitatively-skilled social science graduates.
- Funded by the Nuffield Foundation, ESRC and HEFCE
- 15 Centres delivering specialist undergraduate programmes, including new courses, work placements and pathways to postgraduate study.
- Area Studies; Criminology; Education; Environmental Planning; Human Geography & Demography; Law; Linguistics; Management & Business Studies; Political Studies & International Relations; Social Anthropology; Social Policy; Social Work; Socio-Legal studies; Sociology
- Excludes Economics and Experimental Psychology which do not show the systematic shortfall in quantitative skills

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Q-Step: Size and shape

- £19.5 m, six years, 2013/14 start
- 15 Centres and three Affiliates
- 55 new staff
- 1200+ new undergraduate students taken Q-Step degree programmes
- 8500+ students taken one or more Q-Step modules
- 70+ new or amended Q-Step degree programmes validated and operating
- 190+ new or amended Q-Step modules validated and operating
- 500+ students have undertaken work placements with various hosts

The network

- University of Manchester
- University of Kent
- Cardiff University
- Queen's University Belfast
- University of Warwick
- City University
- University of Sheffield
- Manchester Metropolitan University
- University of Bristol
- University of Glasgow
- University of Exeter
- University of Edinburgh
- University of Leeds
- University College London
- University of Oxford

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Features of Q-Step

- Different starting points
- Variety of end points
- Experimental and innovative
- New approaches to teaching & learning
- Developing academics
- Support for students
- Applying skills

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Applying skills and adding value...

- ScotCen
- NatCen
- IPPR
- World Bank
- Select Committee
- YouGov
- ESS
- ONS
- Citizens Advice
- Ofsted
- Home Office
- OECD

https://youtu.be/PlpDKI88Z_U?list=PLvwyvYpDaPBkaOD8W2U_lIPK4PxTDGGPA

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Challenges…

Mid-term review

- Marketing and student recruitment
- Student tracking and student data
- Ambassadors and employers
- Benchmarks and pedagogy
- Networks and interest groups
- Sharing experience, expertise and materials

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Looking ahead

- External evaluation (achievement, confidence, research, employability)
- Transition
- Humanities / arts?
- The ug/pg frontier
- Attracting new undergraduates
- Other institutions
- Work with schools and with employers
- Numeracy skills for all
- Is six years enough?

what part of

$$\mathcal{L}_{0,\mathrm{EW}} = -(\overline{\psi_{\nu_e,\mathrm{L}}}, \overline{\psi_{e\mathrm{L}}})\gamma^\mu \left(\partial_\mu - i\frac{g}{\hbar}\vec{A}_\mu \cdot (\tfrac{1}{2}\vec{\sigma}) - \tfrac{1}{2}i\frac{g'}{\hbar}B_\mu \cdot (-1)\right) \begin{pmatrix} \psi_{\nu_e,\mathrm{L}} \\ \psi_{e\mathrm{L}} \end{pmatrix} - \overline{\psi_{e\mathrm{R}}}\gamma^\mu \left(\partial_\mu - \tfrac{1}{2}i\frac{g'}{\hbar}(-2)B_\mu\right)\psi_{e\mathrm{R}}$$

don't you understand?

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THE INNUMERATE SEVEN

3 OUT OF 2
PEOPLE
HAVE
TROUBLE
WITH
FRACTIONS

CORE project

- **E**conomics as a **Qu**antitative **S**ocial **S**cience (EQuSS) started March 2017
- Accessible, relevant, real-world economics teaching, available and free to everyone
- Economics for non-economists
- Learning the tools of economics by using real problems of climate change, inequality, innovation and the future of work, financial instability

The mission

To build confidence in valuable data-handling and analysis skills that help students understand the economy, are transferable to other subjects, and will enhance employability.

CORE EQuSS & Q-STEP

- Formal links to two Q-Step Centres (UCL and Bristol)
  i. Complements existing Q-Step courses in criminology, environmental planning, international relations and social studies
  ii. Further develops students' quantitative understanding of the economic dimensions of their subjects
- Active communications between both programmes
- Similar perspectives on addressing 21st century skills challenge - ie improving data-handling skills of non-STEM graduates in a data-driven world

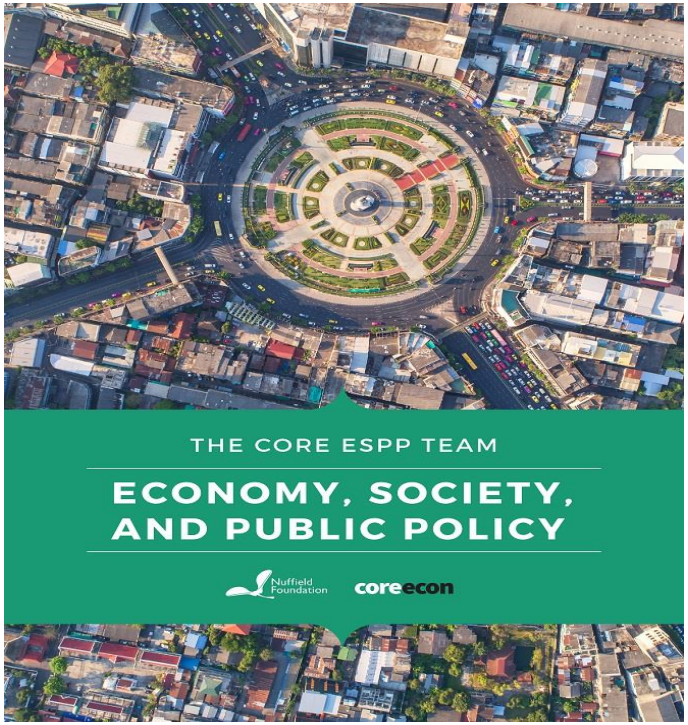
Further Nuffield Foundation links

Nuffield Foundation funding over three years to:

- Develop a new e-text - *Economy, Society, and Public Policy*
- Develop associated teaching materials and quantitative exercises to enhance student skills and confidence and to illustrate the power of quantitative methods
- Train a small cadre of teachers and PGTAs to launch this course
- Implement a well-designed, multi-methods evaluation of the initial effects of the course

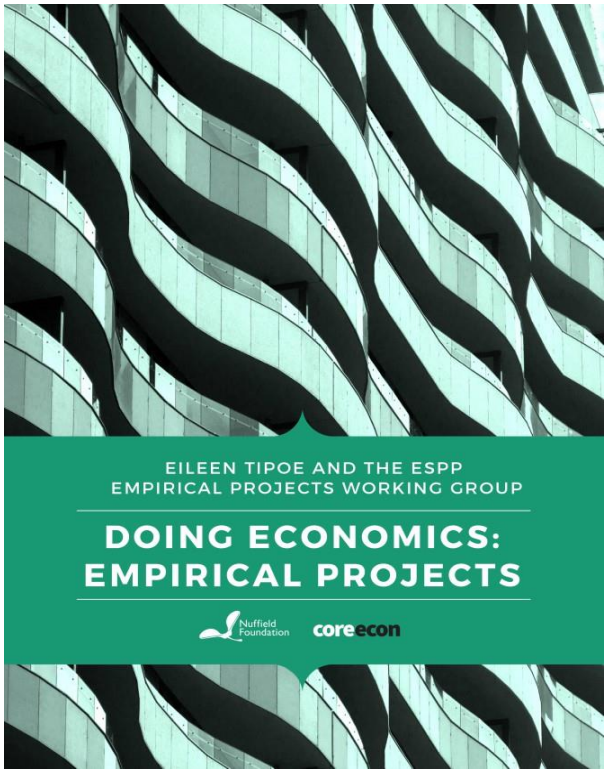
Outputs

A free online 12-unit introductory economics course for non-specialists...



Outputs

…with a further 12 empirical projects to introduce students to using real-world empirical data to investigate economic problems



Other features to note

- Empirical Projects Working Group - QM experts (including Q-Step academics) advised on the practical data exercises
- CORE Labs provide additional mechanism for engaging teach
- All material is free online
- Material is suitable for both undergraduates and postgraduates and other interested parties
- Good feedback from teachers of economics for public policy courses in the US and NZ, and from non-economist social scientists

Milestones

- CORE Labs pilot goes live – May 2018
- Royal Economic Society/Nuffield/Economics Network CORE teaching and learning workshop - 18/19 June 2018
- Units and Empirical Projects 6-9 go live - mid-June 2018
- Units and Empirical Projects 10-12 go live - early-mid August 2018
- Early adopters start teaching – September 2018

Inaugural RES Nuffield Foundation workshop

University of Bristol

18-19 June

Run by the CORE project and Economics Network

Focus on the effective and innovative teaching of using the CORE materials
For users of CORE texts, those thinking about using CORE texts, and advanced PhD students

To find out more: http://www.core-econ.org/event/core-workshop-2018

Additional links

Blogs

http://www.core-econ.org/introducing-economy-society-and-public-policy-a-new-ebook-by-the-core-team/

http://www.core-econ.org/who-can-use-espp/

http://www.core-econ.org/learning-by-doing-economics/

http://www.core-econ.org/rich-toolkit-qa-michael-muthukrishna/

A walkthrough video

http://www.core-econ.org/espp-in-three-minutes/

A podcast

http://www.core-econ.org/espp-by-the-people-who-helped-create-it/