

**Queen Mary**  
**University of London**

**MTH6110**

**Qualitative and Quantitative Approaches II**

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# Plan for Today

1. Warmup
  2. Maths Education Research Literature, revisited
- BREAK
3. Evidence-based decision-making
  4. Assignments  $\frac{3}{4}$ : Research Article Group Project

# Warmup – Individual Exercise (3 min)

**Identify what you want to learn:** if I were to select a Maths Education Research article to read in the second half of term, I would like it to address...

- a. Education Policy Making and Mathematics
- b. Teaching Nontraditional Students (e.g., Adult Learners, ESOL, etc.)
- c. Underrepresented Groups (i.e., Equality, Diversity and Inclusion)
- d. Technology in Mathematics Education
- e. Other (please share with us so that we can add it!)

*Did reading Coe et. al. inform your decision in any way?*

# Why did we read Coe et. al.?

You're (almost) done reading your first education review article!

## Why did we want you to work on Coe et. al. independently?

- Underpins the first half of module
- Introduces you to education vocabulary
- Gives context for your training as a teacher
- Serves as a writing sample (it's a "past paper")
- Provides you with an extensive bibliography

Wait, there's more...

- Once you're done, you can use this review to try doing some high-level Curriculum Planning (a very "meta" exercise)

# Why did we read Coe et. al.?

**Exercise at home** – Map out how you might use what you've learned from the review article on what makes great teaching to achieve some of the Learning Objectives of this module. You may wish to consider

- Weekly Tasks (squares below)
- Assessment (summative vs. formative)
- Skills (any you think are important)

## Main Learning Objectives of our module this year

- understand how schoolchildren learn mathematics, and what teaching methods work best for different types of learners
- explore and critically analyse pedagogic research in the discipline
- observe and reflect on the teaching of mathematics in schools
- gain professional writing and presentation skills

Reading

Interacting

Reflecting

Writing

Watching

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# (Maths) Education Research Literature

In the second half of the term, we refine the work done in Weeks 1 – 6 on

- basic structure of an education research article
- how to approach content
- interpretation/application of conclusions
  
- how to find relevant resources
- citing resources in your own work

# Exercise (30 minutes)

## Choose a Research Article

### Identify the Basic Components (5 min)

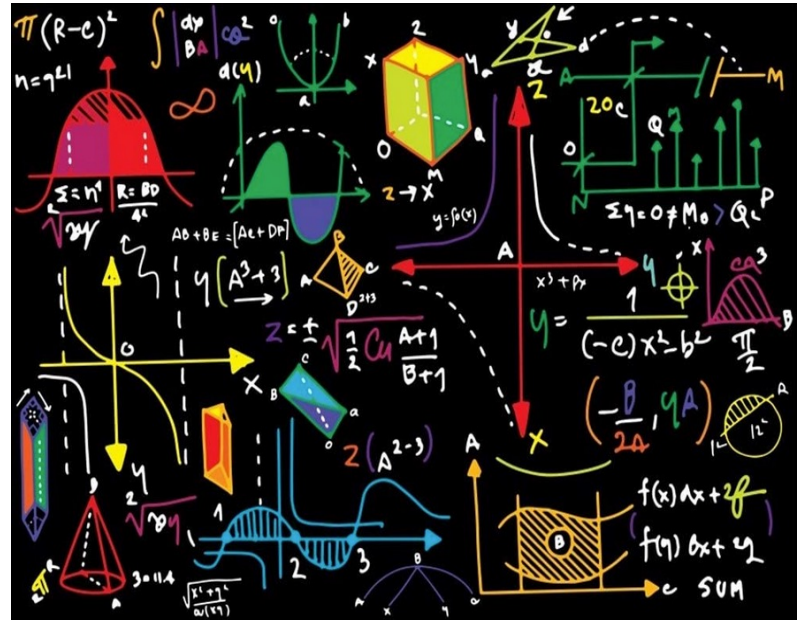
- Essentials: title, journal, **abstract**, keywords, references
- **Structure/Sectioning**

### First Pass Information (10 min)

- What **question(s)** are being addressed?
- Methodology, **Evidence**, Analysis
- Theory/Practice, Qualitative/Quantitative
- What **conclusions** are made?

Is this interesting to me?  
Do I want to work on this?

**REPEAT!**



A poster backdrop for your bedroom, courtesy of [Amazon](https://www.amazon.com)?



# When reading at home...

## Identify the basic components (10 min)

- Essentials: title, journal, **abstract**, keywords, references
- **Structure/Sectioning**: is it basically a 5-paragraph essay?

## Pass 1: “**Read down, not across**” and **summarize** the article in a few sentences (20-30 min)

- What question(s) are being addressed?
- Methodology, **Evidence**, Analysis
- Theory vs. Practice, Qualitative vs. Quantitative
- **Conclusions**



## Passes 2 & 3: how should they look? (30-60 min)

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# Upcoming Events – S&E Careers Week (4<sup>TH</sup> – 8<sup>TH</sup> March 2024)

## Monday 4<sup>th</sup> March

- Graduate Jobs outside of Graduate Schemes (Mixed Mode), **10:30 – 11:30** [Register Here](#)
- How to succeed at Psychometric Tests (Online) **13:00 – 14:00** [Register Here](#)
- Interview Skills Bootcamp (In-Person) **15:30 – 17:00** [Register Here](#)

## Tuesday 5<sup>th</sup> March

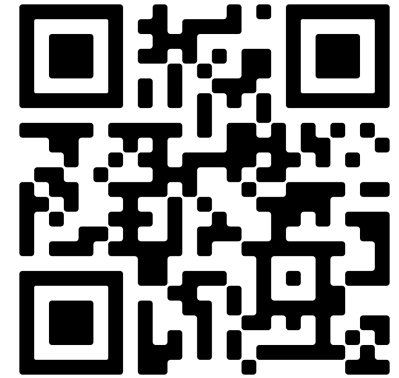
- Mock Assessment Centre (In-Person) **10:30 -12:00** [Register Here](#)
- LinkedIn Essentials (Online) **13:00 – 14:00** [Register Here](#)
- Professionally Polished – Etiquette in the workplace (In-Person) **15:30 - 16:30** [Register Here](#)

## Wednesday 6<sup>th</sup> March

- Symphony Skillsset: Showcasing Your Transferable Expertise (In-Person) **13:00 - 14:30** [Register Here](#)
- #1StepAhead Career Conversations: First Years **15:00 - 16:00** [Register Here](#)

## Thursday 7<sup>th</sup> March

- Mock Assessment Centre (Online) **10:30 – 12:00** [Register Here](#)
- From Campus To Career (Online) **13:00 – 14:00** [Register Here](#)
- Crafting your strongest CV & Cover Letter (Mixed Mode) **15:30 – 16:00** [Register Here](#)



**Don't forget to check out:** [International Students Careers Week \(W/C 26/02\)](#), STEM into Teaching (13/03) & CareersHub for similar workshops and employer events taking place across the semester.

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# Evidence-based decision-making

## What is evidence-based decision-making?

*“[...] a program, practice, or policy that is grounded in the best available research evidence and informed by experiential evidence from the field and relevant contextual evidence.” [CDC.gov]*

Contributions come from researchers and practitioners, best available evidence and experiential evidence.

**Informed by** scientific literature, organisational data, expertise and judgement of practitioners, managers, consultants, business leaders, stakeholders (both internal and external).

# Evidence-based decision-making

**Who cares?** Taking such an approach allows us to remove bias from our decision-making, rely less on personal or anecdotal experience, as well as cultivate trust in the organisation at which such decisions are being made.



[https://vetoviolence.cdc.gov/apps/evidence/docs/ebdm\\_82412.pdf](https://vetoviolence.cdc.gov/apps/evidence/docs/ebdm_82412.pdf)

# Evidence-based decision-making

**Case Study – first steps.** As Director of Education of Maths at University of Oxenfurt, you are asked whether or not the entry tariff for your UG Programmes should be raised. What are your first steps, taking an evidence-based approach?

- What are your (three) key questions?
- Who do you consult?
- Where do you get your data?
- Can you quantify the unknowns?
- How much time do you need to make this decision?

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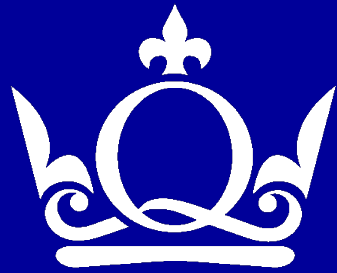
# Assignments 3/4 – Research Article Summary and Group Presentation

- You will be put into groups and assigned a research article for the second half of the semester
- Asst 3 (Week 9) – 600-word summary of assigned article
- Asst 4 (Week 12) – 10-minute group presentations of assigned article
- Assessment Guide and Marking Criteria will be posted for both assignments (individual/group marks) in due course
- This pair of activities involves **Reading, Interacting**, Watching, **Reflecting, Writing**, individually and as a team
- Time Management will be key in Weeks 7-12:  
Read → Write → **Interact**, Practice, **Refine** → **PRESENT!**

# A friendly reminder and some encouragement...

- Review Coe et. al. reading assignments and your PDP
- Guest speakers being planned for second half!  
You may need to bring in both your PDP and Observations Participation in the module includes showing us your work
- Assignments 3/4 – Research Article
- We meet in Week 7 but not Week 10
- SB Update





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**Questions?**

**Thank you for your participation!**