

# Including Comparator Groups in HEAT's Tracking Reports

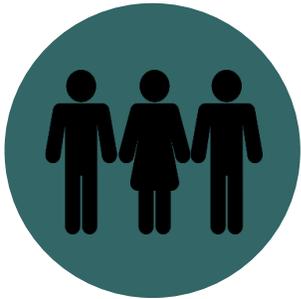
*Anna Anthony, Senior Data Analyst*

1. What is a comparator group and why we do we need it?
2. What types of comparator group are there?
3. How can I collect data for a comparator group?
  - Discussion on practicalities of collecting data for a comparator group
4. How can HEAT help users access outcome data for a comparator group? A Case Study with Make Happen
  - Q&A time

# What is a comparator group?

## Participant Group

Take part in outreach activity



*what happened*

## Comparator Group

Do not take part in outreach activity



*what would have happened*

Type 1	Narrative
Type 2	Empirical Enquiry
Type 3	Causality



Home > Publications > Standards of evidence and evaluating impact of outreach

Independent research

## Standards of evidence and evaluating impact of outreach

It is important that higher education more... prioritise generating, sharing and... learning from evidence ab... equitable more... access... make... These... evidence... and p...

Related publications

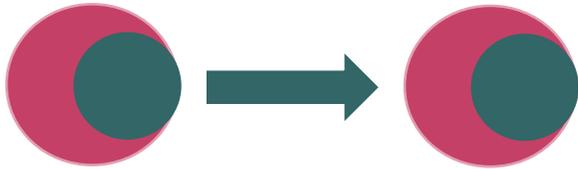
*“For strong Type 2 and for all Type 3 evaluations, you want to have a counterfactual or comparator to establish the impact of your intervention or activity above what might otherwise have occurred”. (OfS, 2019)*

Source: OfS website

# Types of comparator group - Theory

## Type 2

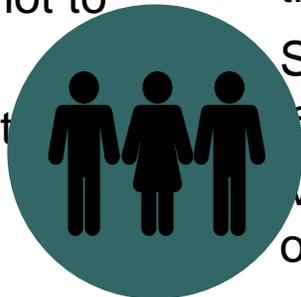
### Non-experimental designs



- Measures outcomes
- Compares with wider population
- Comparator group tends not to consider selection bias
- May under or over-estimate effect of participation

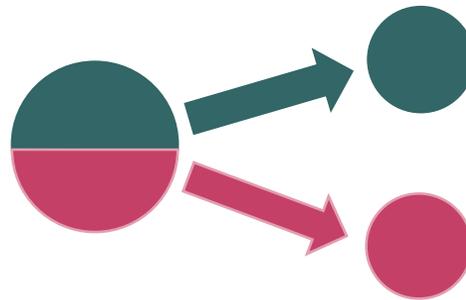
### Participant Group

Take part in outreach activity



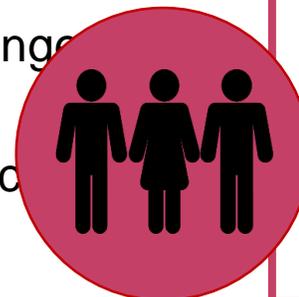
## Type 3

### Experimental designs



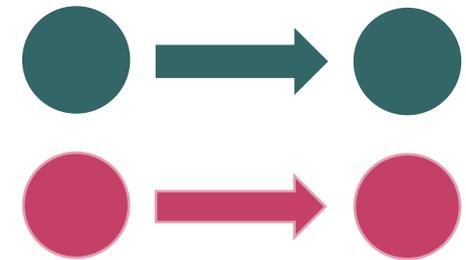
### Comparator Group

Do not take part in outreach activity



- Works' Centres
- Identifies a 'control' group through randomisation
- Selection bias no longer an issue
- May be difficult to access outreach context

### Quasi-experimental designs



- Identifies a suitable comparator group
- Matching techniques e.g. PSM
- Success will depend on the quality of matched 'confounding' variables
- Can remove some elements of selection bias

## **Example 1 Over-subscribed Activities e.g. Summer Schools**

- Collect personal data and permissions for tracking for all applicants via application form
  - May be able to randomly allocate students to treatment and 'control' groups
  - Alternatively, match successful and unsuccessful applicants based on confounding variables
- + Levels of 'motivation' *should* be similar across both groups

## **Example 2 Activities delivered to certain students within a class e.g. Mentoring**

- If possible, baseline entire class to collect personal data and permissions for tracking
  - Match participants with non-participants on confounding variables
- + Both groups will have received the same teaching and so this important variable is accounted for
- Levels of 'motivation' between the two groups may be different depending on how students were selected

## **Example 3 Activities delivered to an entire class e.g. Skills and Attainment**

- If possible, baseline another class in the same year group in the school to collect personal data for and permissions tracking
- Match participants with non-participants (from different class) on confounding variables
- + Both groups attend the same school, controlling for learning environment to some extent
- Teaching quality between the two classes may be different, and this may influence the outcomes being examined
- + Differing motivation less of an issue for activities delivered to entire classes

## Example 4 Intensive outreach with an entire year group

- It may be possible to collect personal data and permission for tracking from students in a different but similar school to use as a comparator
- A 'similar school' can be identified using the EEF's Family of Schools tool
- Data collection for these students may be possible if you offer less intensive outreach in that school
- Match participants from different schools on confounding variables
- Teaching quality and school context between the two classes is likely to be different, and this may influence the outcomes being examined
- + Differing motivation less of an issue for activities delivered to entire year groups

**Have you collected data for a comparator group in the past?**

- 1. Yes**
- 2. No**

**How likely are you to try and collect data for a comparator group in the future?**

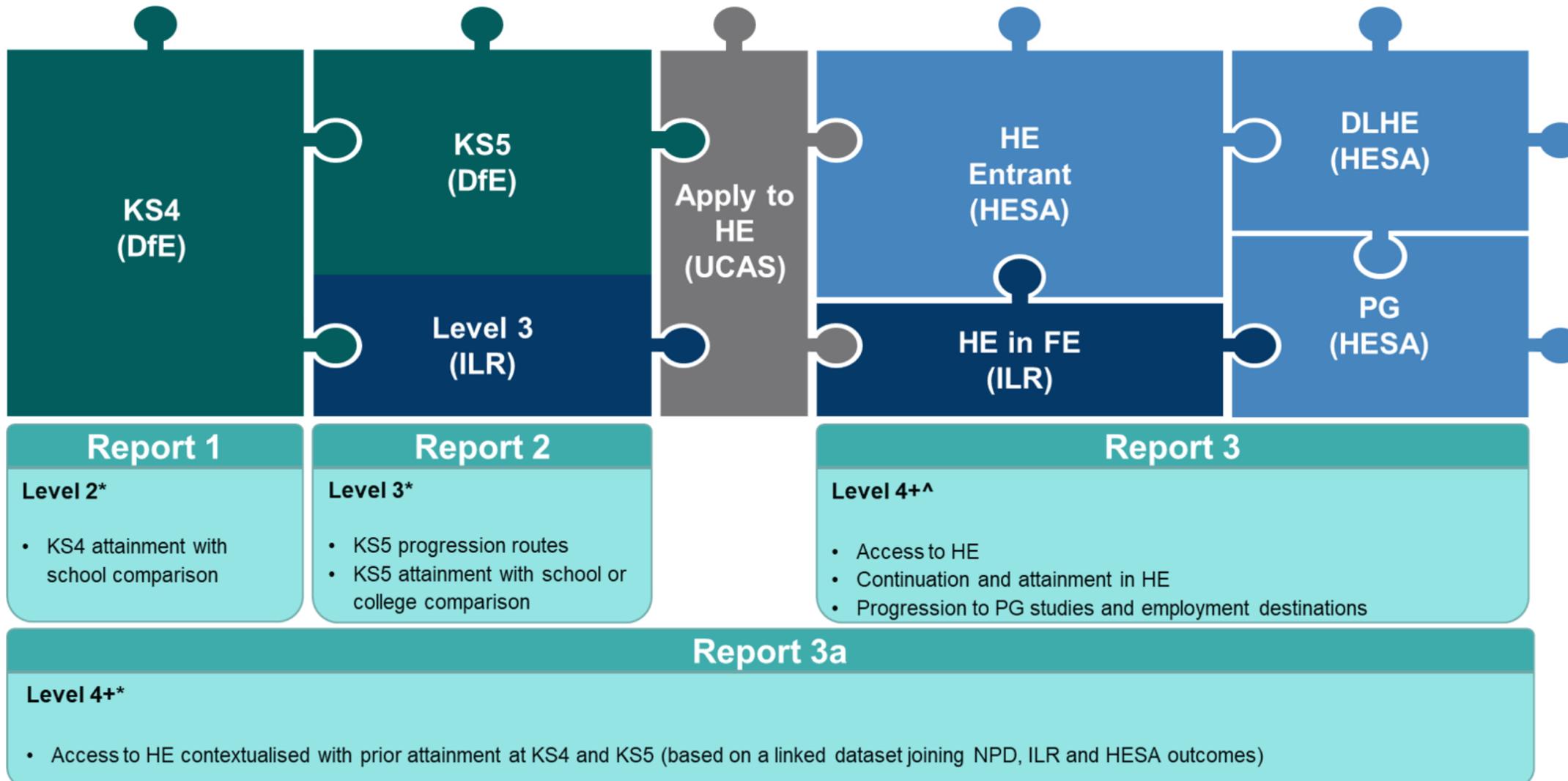
- 1. Likely**
- 2. Not sure**
- 3. Unlikely**

**Do you have any concerns about collecting data for a comparator group?**

# How can HEAT help users access outcome data for a comparator group?

A case study with Make Happen

## Key Stage 4 Attainment Tracking



*\*underlying dataset not available; ^underlying dataset available, format dependent on legal basis*

- Performance in exams is measured using three metrics
  1. Percentage of participants awarded English and Maths at GCSE with a strong 9-5 pass
  2. Participants' average Attainment 8 Scores
  3. Participants' Progress 8 Scores
- School average as comparator group – Type 2

## Make Happen's Activity run by Positively Mad

Activity Type: Skills and Attainment

Positively Mad run whole day workshops in schools focusing on exam and revision skills

Number of participants: 130



## Positively Mad Participants

### Higher Attainment 8 Scores for all prior attainment bands when compared with their School Average

Average Attainment 8 Scores (Average grade across 8 subjects)



Average Attainment 8 Scores for low/average/high achievement band at KS2

	Participants	School Average	Difference
Low KS2 Attainment (<L4)	28.2	23.6	+4.5
Medium KS2 Attainment (L4)	44.3	38.8	+5.5
High KS2 Attainment (>L4)	58.4	55.7	+2.7

NB This means that on average medium attaining participants achieved an average of 5.5 grades higher when compared with pupils with similar attainment from their schools

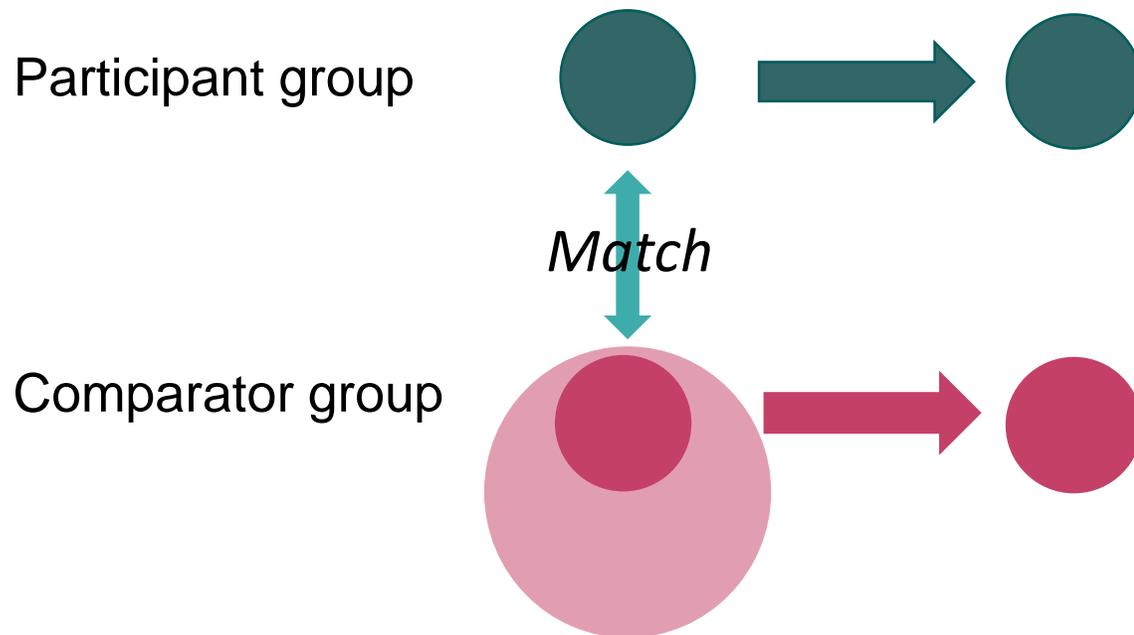
## **The School Average may not be a suitable comparator**

- Participants may/may not be similar to their classmates.
- Current reports breaks down by prior attainment at KS2, making this strong Type 2 evidence
- However, activities may be targeted towards individuals

## **Must find a more suitable comparator group**

- Make Happen had baselined entire year groups, including non-participants
- Case Control Matching was conducted in SPSS to find a 'non-participant' pair for each Positively Mad participant
- A quasi-experimental approach (not experimental)

## Case Control Matching (Type 3)



- Conducted in SPSS
- Guides available online

### Factors used in matching:

- IMD Quintile
- IDACI Quintile
- Gender
- Ethnicity
- KS4 Performance of School (Quintile)
- Uni Connect Target Ward (Y/N)

### Tips:

- Set a low calliper = Groups very similar in composition
- Check balance of groups before and after matching
- Limitation = only able to match on observed variables (not motivation)

# Match Group Results

**Higher Attainment 8 Scores for all prior attainment bands when compared with their a matched comparator group**

**Average Attainment 8 Scores (Average grade across 8 subjects)**



**Average Attainment 8 Scores for low/average/high achievement band at KS2**

	Participants	School Average	Difference
Low KS2 Attainment (<L4)	28.2	27.7	+0.5
Medium KS2 Attainment (L4)	44.7	40.3	+4.4
High KS2 Attainment (>L4)	59.0	54.0	+5.0

NB This means that on average medium attaining participants achieved an average of 4.4 grades higher when compared with pupils with similar attainment from their schools

# Match Group Vs School Average Results

## Results Matched Comparator Group Vs. School Average

Average Attainment 8 Scores (Average grade across 8 subjects)



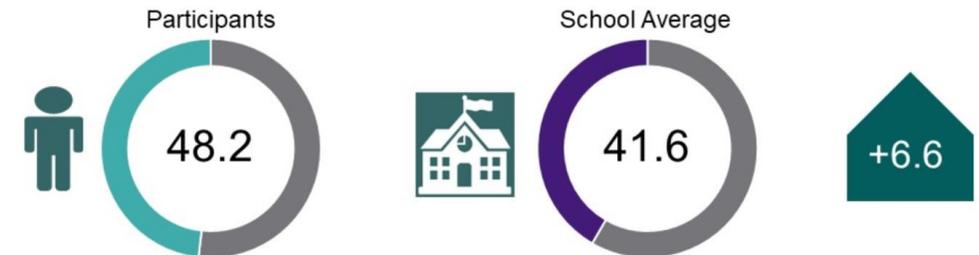
Average Attainment 8 Scores for low/average/high achievement band at KS2

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NB This means that on average medium attaining participants achieved an average of 4.4 grades higher when compared with pupils with similar attainment

Positively Mad Participants' Attainment 8 Scores compared with the Non-Participants' Scores

Average Attainment 8 Scores (Average grade across 8 subjects)



Average Attainment 8 Scores for low/average/high achievement band at KS2

	Participants	School Average	Difference
Low KS2 Attainment (<L4)	28.2	23.6	+4.5
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NB This means that on average medium attaining participants achieved an average of 5.5 grades higher when compared with pupils with similar attainment from their schools

Positively Mad Participants' Attainment 8 Scores compared with the School Average

## Contact Us

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