# Planning a randomised controlled trial evaluation (RCT)

TASO Transforming Access and Student Outcomes in Higher Education

**What is a randomised controlled trial (RCT)?**

- An RCT is a type of evaluation design that estimates the causal impact of an intervention on a sample by randomly allocating participants to either receive a form of intervention (intervention group) or (usually) to not receive an intervention (control group).
- The impact of the intervention can be measured by comparing the outcomes of the intervention and control group.
- This guidance is designed to introduce you to the key steps involved in conducting an RCT. For more detailed guidance, refer to the video and webinar recording on RCTs.

## Monitoring and Evaluation Framework Step 1: Diagnose

**1 Using theory of change to inform your evaluation**

- Having a well-thought-out theory of change will help to inform research questions and contextualise the evaluation findings.
- Before planning your evaluation, it is important to understand the mechanisms by which you expect the intervention to lead to the outcome.

## Monitoring and Evaluation Framework Step 2: Plan

**2 Gather your team**

- RCTs require research expertise. You will need access to individuals who are experienced in designing RCTs and analysing data. Consider whether you have this expertise in-house or if you require support from an external supplier.
- You will also need to involve practitioners with a deep understanding of the intervention and those who can support with data collection.

**3 Set your research question(s)**

- The research question(s) should be about the causal impact of the intervention or scheme: Did [scheme] increase [outcome] among [group]?

**4 Identify your outcome measures**

- Aim to use validated scales (e.g. from the ASQ), interim or proxy outcomes (e.g. GCSE selections, sign-ups to event), or core impact measures (e.g. A-level attainment, higher education continuation).

**5 Identify opportunities for RCTs**

- Consider whether an RCT evaluation of the intervention is of strategic value to the institution and/or the sector, and whether it can meet the robustness threshold for Type 3 (causal) evidence.
- You will need to identify appropriate opportunities to create a control group (e.g., students who are not taking part in the intervention).
- You will need to make sure the data you collect provides a large enough sample size for robust analysis.

**6 Understand your sample size**

- You will need to determine how many participants you need to make your RCT robust enough to be worthwhile.
- There are many online calculators that can help you find your minimum sample size, or you may want to use guidance from a statistician.

**7 Choose your RCT design**

- There are many different types of RCT designs and you will need to identify which one best suits the context of the intervention.
- There are variations in RCT designs that mean that all participants (including those assigned to the control group) take part in some form of intervention.
- The introductory video and webinar recording on RCTs include more information about each of these designs.

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| **8**<br>**Create a research protocol** | • Lay out your evaluation approach and implementation. TASO's protocol templates can help with this. |
| **9**<br>**Get ethical approval from your institution** | • This needs to be done in advance, so ensure you plan in enough time for the evaluation to be approved.<br>• You will usually need your research protocol and information about the risks to participants to secure ethical approval. TASO's research ethics guidance can help with this. |
| **10**<br>**Recruit participants** | • Include clear information about the study, expectations of participants, timeframes (enough lead-in), and key steps. |
| **11**<br>**Randomise** | • Randomise participants to the control and intervention group.<br>• Always pre-specify how this will happen in your protocol.<br>• Consider strategies to minimise required sample size and maximise power while retaining a practical design.<br>• If possible, have someone else run the randomisation for you. |
| **Monitoring and Evaluation Framework Step 3: Measure** | |
| **12**<br>**Collecting and storing data** | • Consider how you will collect data in practice, how you will store it, and ensure you can tell if data belongs to the intervention or control group.<br>• Make sure you are using robust and reliable data collection tools (e.g., behavioural measures or validated surveys).<br>• Ideally, collect baseline data prior to randomisation. |
| **12**<br>**Analysing data** | • Ideally, engage someone with statistical expertise.<br>• Understand attrition levels and check if observable baseline characteristics are balanced between intervention and control groups.<br>• Follow your pre-specific analytical approach. |
| **Monitoring and Evaluation Framework Step 4: Reflect** | |
| **13**<br>**Interpret your findings** | • Statistical analyses may identify statistically significant or statistically non-significant (null) results. Consider what this tells you about the intervention. Remember, a non-significant result does not always mean the intervention has no effect on the outcome, just that this evaluation has failed to detect an effect.<br>• A significant result means you can be fairly certain the intervention has had a causal influence on the outcome. If the result is significant and positive, the intervention has significantly increased the outcome. If the result is significant and negative, the intervention has significantly decreased the outcome.<br>• Interpret your results alongside your theory of change and consider the practical implications.<br>• Publish your results (using TASO's reporting templates). |