Randomised Controlled Trials

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What's the idea?

Evidence-informed practitioners are often faced with educational fads or fashion which may have little or no evidence to support their introduction. Randomised Controlled Trials (RCTs) are often referred to as the 'gold standard' of educational evidence because many sources of bias are removed from the research process. They provide the chance to discover if a specific intervention makes a positive difference, and to develop a body of knowledge and evidence around the effectiveness of different types of intervention..

What does it mean?

Connolly, Biggart, et al. (2017) describe an RCT as "a trial of particular educational programme or intervention to assess whether it is effective; it is a controlled trial because it compares the progress made by those children taking the programme or intervention, with a comparison or control group of children who do not and who continue as normal; and it is randomised because the children have been randomly allocated to the groups being compared" (p. 4).

Randomisation of participants in each group takes researcher bias out of the equation and allows the impacts of the studied intervention to be measured objectively.

The process of randomisation - if done properly - should ensure the only systematic difference between the two groups of pupils is that one group will have received the intervention and the other will not. The process of randomisation has led to all those potential other factors which may influence a child's progress to be evenly distributed between the intervention and control group. If the intervention group makes more progress than the control group, then the difference is likely to be down to the effects of the intervention.

Churches and Dommett (2016) put forward a number of advantages of quantitative experimental research. These include that RCTs have:

» *Objectivity.* They can be more objective and reliable than other forms of research

» *Controlled conditions that can be replicated.* Replication provides the opportunity to remove the possibility of falsification of results that are unusual and unlikely to happen again.

» *Controlled conditions so that the results of replicated studies can be combined* through the use of meta-analysis.

What are the implications for teachers?

By combining the work of Ginsburg and Smith (2016) and Gorard et al. (2017), it's possible to draw-up a checklist of things to look out for:

1. Is the study design a good match for the research question?

2. Is the developer of the intervention associated with the team evaluating the RCTS?

3. Over what period of time was the new intervention implemented?

4. Is there evidence of 'drop-outs' from the research, and how does this impact upon the findings?

5. Is it clear what comparison curricula or interventions were used?

6. How were participants allocated to each group - have they been randomly allocated or have cases been matched between groups?

7. Did the control group and intervention group receive the same amount of teacher time?

8. Does the study show how impact of the intervention accumulates or dissipates over weeks/months/years?

9. Is the assessment designed by the developer of the intervention (likely to favour the intervention)?

WANT TO KNOW MORE?

» Cartwright N (2013) Knowing What We Are Talking About: Why Evidence Doesn't Always Travel. *Evidence & Policy: A Journal of Research, Debate and Practice* 9(1): 97-112.

» Churches R and Dommett E (2016) Teacher-Led Research: Designing and Implementing Randomised Controlled Trials and Other Forms of Experimental Research. London: Crown House Publishing.

» Connolly P, Biggart A, Miller S et al. (2017) Using Randomised Controlled Trials in Education. London: SAGE.

» Connolly P, Keenan C and Urbanska K (2018) The Trials of Evidence-Based Practice in Education: A Systematic Review of Randomised Controlled Trials in Education Research 1980–2016. *Educational Research.*

» Ginsburg A and Smith M (2016) Do Randomized Controlled Trials Meet the "Gold Standard"? Washington: American Enterprise Institute.

» Gorard S, See B and Siddiqui N (2017) The Trials of Evidence-Based Education. London: Routledge.

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