How to read the Neuroscience-Informed Teacher-Led Randomised Controlled Trial posters

PURPOSE
In this section teachers explain the reasons why they decided to research an area. The teacher studies were all informed by existing controlled evidence from the science of learning and teachers were given a text to read (Churches, Dommett and Devonshire, 2017), training day and feedback on their research proposals (which they turned into a research protocol).

REFERENCES follow the Harvard system – author names and date of publication appear ‘in text’ (e.g. Churches and Dommett, 2016, or as in paragraph at left) and the full reference elsewhere in the poster, as below:

THE RESEARCH DESIGN
Figure 1 illustrates the simplest form of randomised controlled trial (RCT). However, there are many types of RCT.

- **Between-participant** – pupils divided into two groups that each experience a different teaching approach (or condition).
- **Within-participant** – all pupils experience all approaches but in different orders (counterbalancing). It is usual to counterbalance the order in which things happen in this type of design, in order to balance out effects that might transfer from one condition to another (carryover or order effects).
- **Matched-pair (or case-matched)** – similar pupils are paired and each member of the pair randomly allocated.
- **2x2 factorial design** – a design in which four things can be compared against each other, simultaneously.

METHODS
In this section the researcher describes what took place and who was involved. You will see that different forms of randomisation are referred to. The researcher may also mention things such as the trial’s mundane realism (‘everyday-ness’), or whether participants and teachers were kept blind to the purpose of the research.

- **Simple randomisation** – no control over the randomisation.
- **Stratified randomisation** – a balance of pupil characteristics has been ensured across conditions.
- **Cluster randomisation** – whole groups randomised together.

RESULTS

- **Gain scores** were first calculated from pre- and post-test scores (Figure 2).
- **A one-tailed independent samples t-test** showed that the intervention had a significant ($p = .01$) positive effect (d = 0.63) compared to the control condition (CI (95%) = 0.40 – 0.83).
- **Effect size** is the strength and direction of the change. This can be positive or negative. Different effect sizes are used for different data (d, r, np2 etc.).
- **The confidence interval (CI)** is an estimate of the range of effect size that you might expect in 95 out of 100 replications of the study.

LIMITATIONS
There is no such thing as a perfect experiment. Here the researcher points the reader to the main issues that may have affected the results.

CONCLUSIONS
A verbal description of the results and an interpretation of what they might mean. In a longer journal article there is a discussion section and conclusions.