Observing Moderate Evidence:

QUASI-EXPERIMENTAL DESIGNS

Part of an infographic series on research study design for educators

What defines a quasi-experimental study?

Group Formation

Unlike regular experiments, quasi-experiments lack the key feature of randomly selected groups. Quasi-experimental designs (QED) can still help researchers understand the impacts of a policy or program. What makes a QED "quasi" is the fact that instead of randomly assigning subjects to intervention and control groups, they are split by some other means. Two groups are formed through various, non-random processes.

Nonequivalent Groups

Groups could be created by factors other than random selection. For instance, comparing volunteers to people who did not volunteer. The key factor is that while there are two groups to compare, they are not randomly selected.

Matching

Researchers may use statistical methods to create a comparison group, matching schools or students on characteristics that are likely related to the outcome of interest. For instance, researchers might create a control group by matching students with similar prior test scores.

Before and After Time Series

Researchers can compare the results for schools or students before and after an intervention occurs. For example, researchers might examine changes in test scores before a new policy starts and after the policy takes effect.

Example: Policy Change

Policy change is a simple example of a QED that uses a before and after time series. The people under the rules before the policy change are the comparison group while those impacted by the change are the treatment. The people in those groups were not selected randomly but by the circumstance of timing. It is "almost" an experiment but not quite.

Other considerations

Selection Criteria

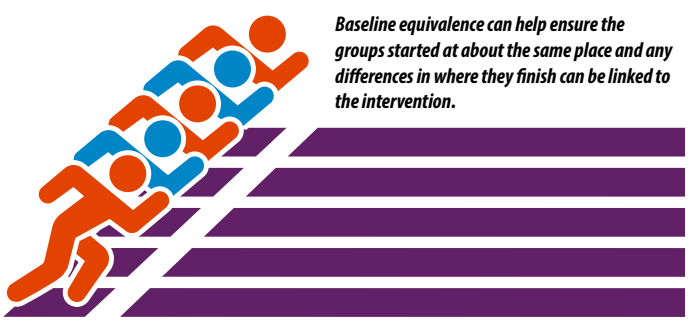
It is critical that the process for creating the two groups be consistent and clear. Consistent means it applies to everyone equally, and clear means that the selection criteria make it obvious to which group a student or school belongs.

Example: Policy Change

In the policy change example, if some students or schools were exempted from the policy, or if some schools implemented it earlier or later than others, then the assignment of subjects to the groups would not be consistent or clear.

Baseline Equivalence

Without random assignment it is always possible that the two groups in a QED, while similar, might still have critical differences. Baseline equivalence is the idea of establishing that the two groups are similar on a key measure that is closely related to the outcome measure. The goal is to demonstrate that the two groups were as equal as possible before the change being studied took place.



Baseline equivalence can help ensure the groups started at about the same place and any differences in where they finish can be linked to the intervention.

Example: Pre-test

A good example would be a pre-test that takes place before the intervention and is similar to the outcome being measured. If both groups can be established as similar before an intervention occurs and differences are found between the groups afterwards, we can attribute those differences to the intervention.

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