Designs with and without a comparison group

Randomized pretest–posttest design

Assign participants or intact groups to conditions at random. Measure the outcome before and after the intervention in each condition. Random assignment helps reduce systematic differences between conditions.

One-group pretest–posttest design

Measure one group before and after an intervention. There is no comparison group. A change in scores may reflect the intervention or something else that happened between the two measurements.

Comparing existing groups

Quasi-experimental pretest–posttest design with a nonequivalent comparison group

Use two existing groups without randomly assigning them to conditions. Measure the same outcome in both groups before and after the intervention. One group receives the intervention and the other follows a comparison activity.

What the comparison can tell you

Compare the changes in the two groups, keeping baseline differences and other explanations in mind. Existing groups can differ in ways that affect the outcome, so the design alone does not establish causation.