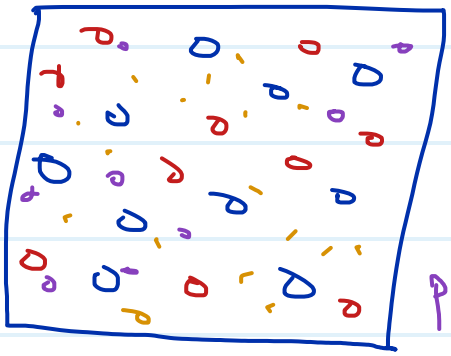
Causal Inferences

Inferential statistics.



population

Statistical inference

Generalize

Study { sample

results

Causal inference

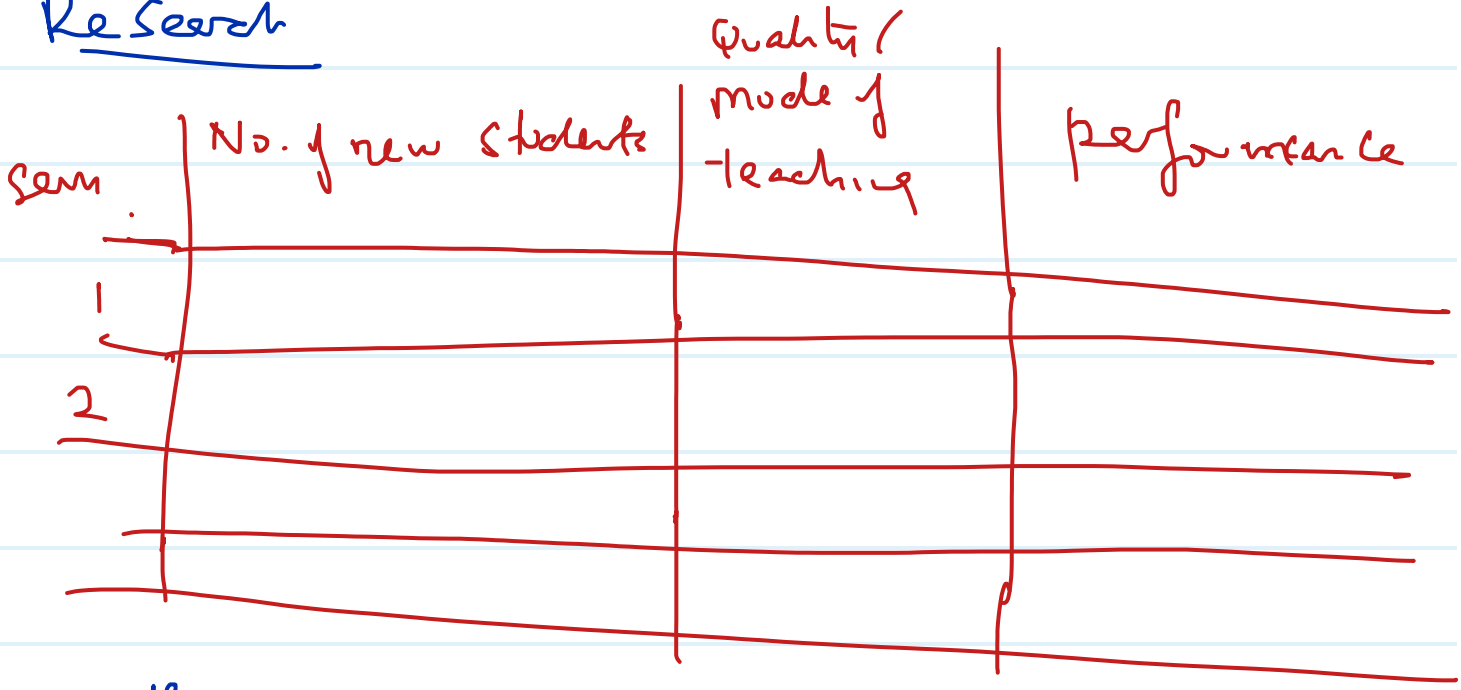
Cause and effect

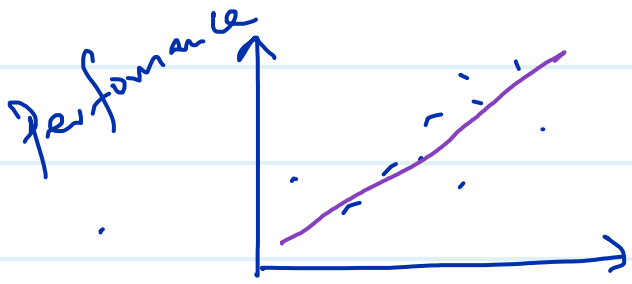
lead

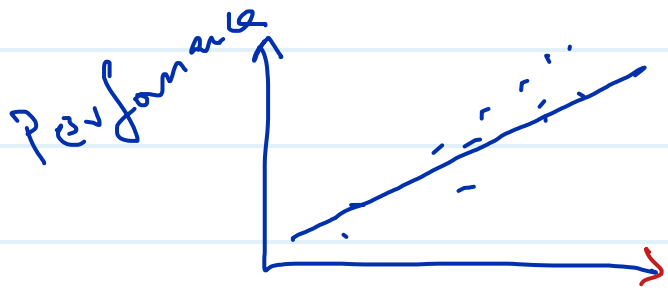
mode of teaching → performance

Does mode of teaching affect performance?

Research





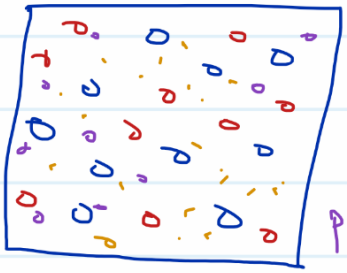


Cause & effect

No Cause & effect

Associations or Correlations

Association does not imply Causation
Cause – effect.



population

Selection: random sampling

Sample 2

TEST GROUP

Administer the new curative (intervention)

1. Randomization
2. Treatment (intervention)

Sample 1

CONTROL GROUP

placebo

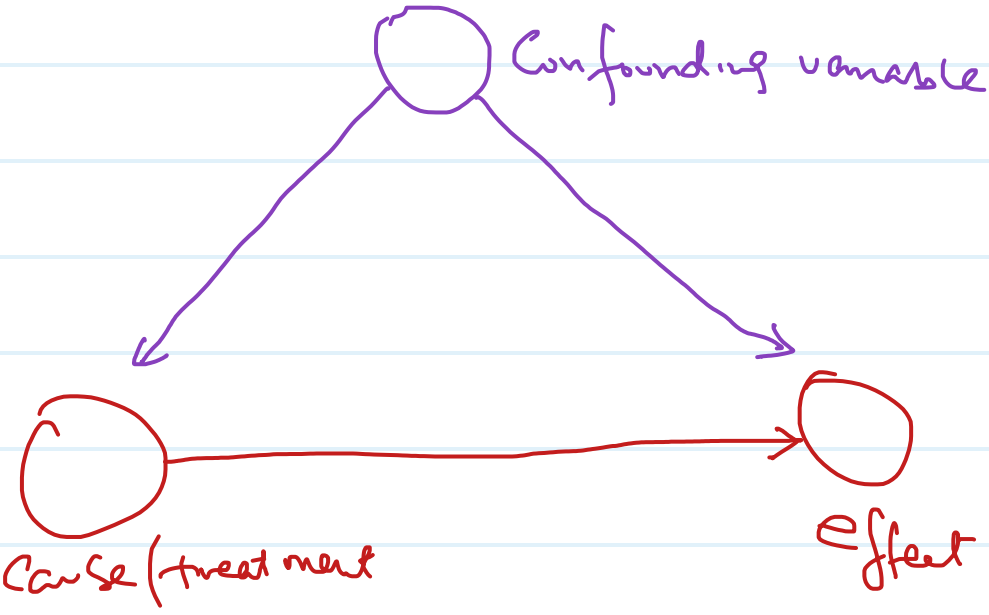
No drug administered (pain killer)

Sometime

No change

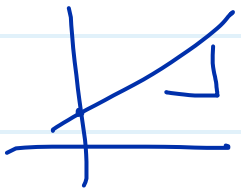
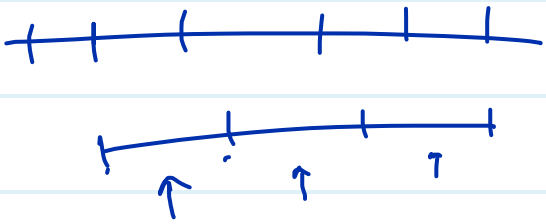
Change is observed

Change is attributed to the intervention



$$y = 2x = f(x) = 2x$$

$x \to 3$, $x \to 3$

$2(3) = 6$

model $\Longrightarrow f(x) = 2x$