Reliability of a NCLB Design

Part 1: What's a NCLB Design?

- Outcome criterion is percent passing

- School as a whole and every subgroup within the school must pass either a status bar or an improvement standard on reading and math to make AYP

- A school that fails to make AYP two consecutive years faces consequences

Status Bar

- 20th percentile school
- Separate bars for reading and math
- Separate bars might be set for each grade span
- Status bar for subgroups might be 20th percentile of subgroups

Improvement Standard

- 10 percent reduction in percentage of students failing from previous year

Part 2: What's Reliability?

- Probability of a consistent or correct decisions (not a reliability coefficient)
- Can be highly volatile

Kane and Staiger

- Three sources of variation
  - Sampling variation
  - Other non-persistent effects
  - Persistent effects
- Percent of non-persistent effects for average-sized school in NC
  - Status – 14
  - Longitudinal gain – 49
  - Non-cohort gain – 73

Linn

- Not only measurement error, but sampling error as well

- Sampling error is a much larger contributor to volatility of school-building scores than measurement error

- Difference scores less reliable than the scores used to compute the differences

Critical Statistics

- Variance of students σ^2_X
- Variance of school means $\sigma^2_{\overline{X}}$
- Variance of students within schools $\sigma^2_{X|S}$
- Kane and Staiger: Ratio of $\sigma^2_{X|S}$ / σ^2_X

  NC ratios around .89

  Coleman reports .84 - .88