Challenges with Linking Organizational Learning to the Bottom Line

Practical Strategies for Inferring Causation

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Overview

- Organizational learning
- Evaluation and causation – why?
- Certainty about causation
- Inferring causation
  - Basic principles
  - Eight practical strategies to choose from
  - Choosing a blend of strategies
- More information (refs)

Organizational Learning

- "The creation and use of important knowledge for improving organizational effectiveness"
- Can be intangible, slippery
  → difficult to demonstrate value
- How can we show whether a particular intervention *caused* an impact?

Evaluation and Causation

- All outcome evaluations must make causal claims
- Push for "evidence-based" practice → Federal mandate that evaluations of educational interventions won't be funded unless they are randomized experimental designs (with a few quasi-expt exceptions)

⇒ clear need for a wider range of sensible options for inferring causation

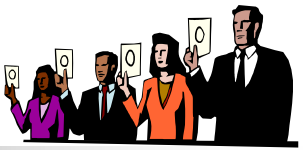
Certainty About Causation

- "The evidence appears to support …"
- Academic training pushes for 95% certainty ($p < .05$) – and even then we don't call it "proof"
- In business, decisions are made based on much less certainty (≈ 60-70% or less?)
- Need to match methods with decision-maker needs (not with academic standards)

Inferring Causation

- Basic Principles
  - Look for evidence in favor of *and against* the intervention as cause
  - Look for evidence in favor of and against alternative causes
  - Use most cost-effective strategies successively until required level of certainty is reached
- Eight strategies
  1. Ask observers
  2. Match content to outcomes
  3. Modus operandi
  4. Logical timing
  5. Dose-response link
  6. Comparisons
  7. Control variables
  8. Causal mechanisms

#1: Ask observers



- Causation is often directly experienced or observed:
  - By intervention participants themselves
  - By managers, peers, and other stakeholders
  - By intervention implementers (e.g., trainers)
- Use this strategy by:
  - Building impact right into survey questions (don't just pretest-posttest)
  - Using probing questions in interviews, surveys
  - Observing causation yourself (if possible)

#2: Match content to outcome

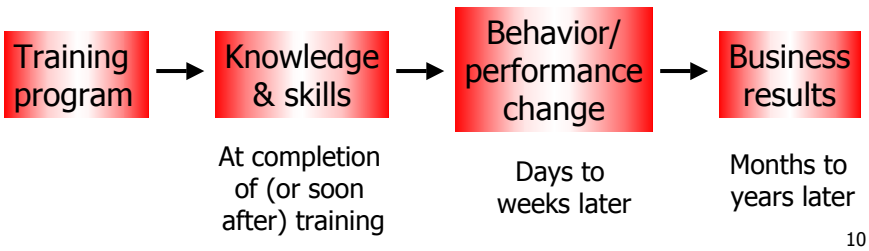
- Did [organizational learning intervention X] improve on-the-job performance?
- Causation is not just about WHETHER performance improved, but about HOW it did
- Using this strategy by:
  - Identifying the content of the intervention, e.g., a team learning intervention may teach certain skills
  - If the improved performance contains evidence that those skills were applied, we have a stronger case for causal inference

#3: Modus operandi method

- The detective metaphor:
  - Just as criminals have a "modus operandi" (patterns of behavior), so too do some interventions create distinctive/characteristic patterns of effects
- An organizational learning example …
  - A "systems thinking" intervention → systemic improvements (main, intended effects)
  - But its "signature trace" should also include a general increase in questioning assumptions and other changes in thinking/behavior (culture Δ)

#4: Logical timing of outcomes

- Interventions → chain of outcomes
  - Distal outcomes should not occur before proximal outcomes
  - Each set of outcomes should emerge with timing that is consistent with current empirical knowledge



#5: Dose-response link

- Patchy implementation of interventions
  - An evaluation opportunity, not a disaster!
  - Look for the relationship between "dose" (extent and quality of implementation) and "response" (magnitude of outcomes)
- How to use this strategy
  - If using survey, include a question about extent and/or quality of implementation
  - Alternatively, gauge extent of implementation by business unit and graph your outcomes

#6: Use comparisons

- Compare impacts with a "control" or "comparison" group
  - Random assignment (a true experiment) is often possible in these settings because full, simultaneous rollout is frequently impossible
  - If not possible, comparisons with the best possible control group match is a very good alternative
  - Comparisons can be made at the individual, group/team, business unit, branch office, or whole-organization level

#7: Use control variables

- Even with random assignment or a good comparison group, worries often remain about rival explanations
  - => use statistical techniques (e.g., regression) to control for extraneous influences or variables
  - Useful control variables include: prior business unit performance, implementation of another change intervention, tenure of BU members

#8: Check causal mechanisms

- Causal claims are a lot more convincing if backed by a logical explanation – especially if that has been tested, e.g.,

Choosing a blend of strategies

- You don't need all eight to infer causation!
- Try this step-by-step method:
  1. Identify level of certainty required
  2. Identify what kind of evidence would be most persuasive to stakeholders (esp. critics!)
  3. Identify which of the eight strategies would be cheapest (and most feasible) to use
  4. Start by adding the most cost-effective strategy to your evaluation design
  5. Have you reached required level of certainty? If not, add next best strategy. Etc.

More information

Davidson, E. J. (in press). *The multipurpose evaluation guidebook: The nuts and bolts of putting together a solid evaluation.* Sage Publications.

Davidson, E. J. (2003). Linking organizational learning to the bottom line: Methodological issues, challenges, and suggestions. In T. E. Kramer (Ed.), Linking organizational learning to the bottom line [Special issue]. *The Psychologist-Manager Journal, 6*(1), 54-67.

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