

## **The Nature & Validity of Claims**

**These questions are based on the two “cheat sheets” I provided: (1) The Goals of Research Design and (2) Comparative Characteristics of Design Groups.**

My two sets of comments address two objectives, both of which are also addressed very thoroughly although in slightly different terms by Gorard: (1) what it takes to substantiate a claim of direct cause and effect or of causality and (2) the relationships between the nature of the research question and research design choices. Simply put, different questions force you to use different designs. The design choice drives the kind of data analysis that you will want to use. This in turn drives many decisions about how to sample and what type of data (interval, ordinal, nominal, ratio or open response) to collect. Therefore, you need to think through the entire process as you develop a proposal to conduct any form of research (academic, needs assessment, or evaluation). These decisions are linked.

1. Why is it important for the researcher to clearly define concepts (constructs) and propositions (linkages) before making research design decisions?
2. What are the main differences between descriptive research and explanatory research? Why does a realist focus on explanatory research?
3. What is the difference between direct cause and effect and causality or causal relationships?
4. What are the three pre-requisites researchers use to establish causality?
5. What is a spurious relationship? What is the relationship between the likelihood of finding spurious relationships and the conditions that can weaken internal and external validity?
6. Why is it critical to include comparison groups in research? How does use of comparison groups enhance internal and external validity and explanatory power?
7. Why does the use of multiple designs strengthen the overall body of knowledge about a specific phenomenon?

### **Extension Questions**

1. Think of an example of “scientific evidence” in an advertisement. What kind of evidence would the company making the claim would have to have to warrant the claim? What kind of research design would the company need to use to get that evidence?
2. Think about some example of an intervention program – like the “12 steps” program for drug users. If you wanted to evaluate the efficacy of this program, what kind of research design would you have to use.