

# RESEARCH



## Ten Steps to Research Validity

Tip Sheet

Patricia Lauer (2006) *An education research primer: How to understand, evaluate and use it.*

1

### Is the Research Question Clear and Concise?

For information on developing research questions see: [Tip Sheet](#)



### What Does the Literature Say?

For information on reading and assessing the literature see: [Tip Sheet](#)

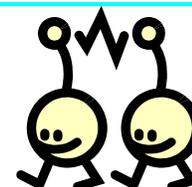
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3

### Does the Research Design Match the Research Question?

For in-depth examples of Qualitative/Quantitative questions see: [Tip Sheet](#)

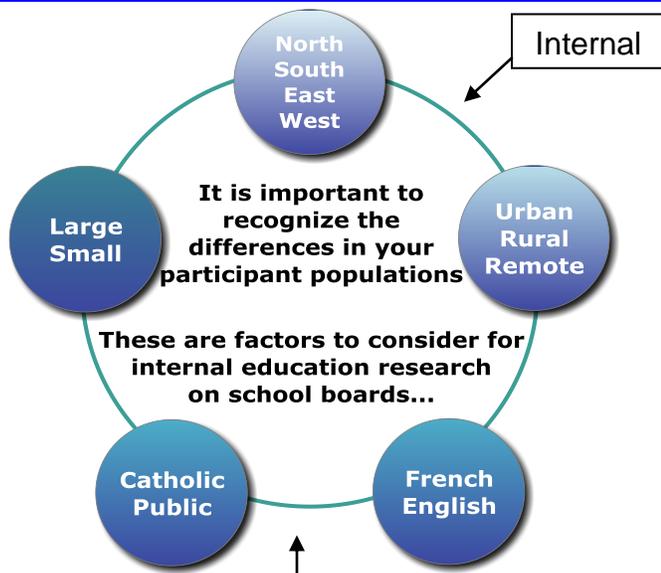
For information on research design [Click here](#)



### Participants

Good research demonstrates the basis for selecting the participants.

4



*Make sure you guide the researcher to the appropriate participant sample using the same considerations as you would for internal research.*

External

These are just **some** criteria for this example...

# Ten Steps to Research Validity

5

## Defining the Problem

***How well does the research address its original purpose?***

You need to ask yourself: What program, policy or practice is being studied?

This is called the “treatment” or variable being studied.

For more information on defining the problem [click here](#)



## Questions to Consider...

1. What data were collected?
2. How were they collected?
3. Are the data collection *tools* valid and reliable?
4. Was there pilot testing or field testing of the instruments?
5. What was the response rate for the questionnaire? (if used)

For more information on data collection validity [click here](#)



## Data Collection

6

The Ministry of Education typically does **6 types** of research activity. To gain a better understanding of these activities [click here](#)

The most common of the *6 typical types* of data collection used at this ministry are Interviews, Focus Groups and Surveys.

For more information on Interviews [click here](#)

For more information on Focus Groups [click here](#)

For more information on Surveys [click here](#)

For more information on Observation [click here](#)

7

## Data Analysis

**Qualitative data** consists of narrative descriptions and observations. In order to support valid conclusions, analysis needs to be systematic.

[Qualitative Research for Education: An Introduction to Theories and Methods](#)  
(Bogdan & Biklen, 2003)

[Qualitative Data Analysis](#) (Dey, 1993)

**Quantitative data** is analyzed through statistics. The computation of inferential statistics is the primary basis for research conclusions about a treatment effect.

[Inferential Analysis Considerations](#)  
(A Policymaker's Primer on Education Research, 2004)

[Analyzing Quantitative Data](#) (Taylor-Powell, 1996)



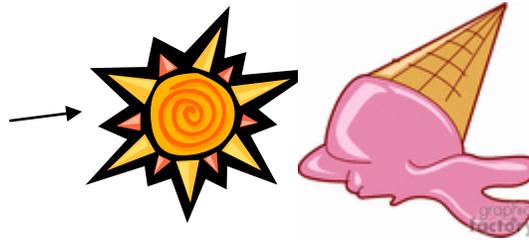
# Ten Steps to Research Validity

## A Caution on Causation...

8

It is important when reading, conducting or commissioning research that we are critical of the reported findings. Sometimes in research a mistake is created in drawing conclusions. This is often the case with causation vs. correlation. [Click here](#) for more on causation and correlation.

**Causation** means that there is a direct statistically significant link between the variables. For example: The hotter the temperature, the faster the ice cream melts. This has been scientifically proven as the direct cause of an ice cream's melting.



**Correlation** on the other hand, means that there is some relationship between the two variables but we are unsure what the *cause* of this relationship is and cannot attribute it to any one factor. For example, we have seen multiple reports of a correlation between ice cream sales and number of deaths. It appears that the higher the number of ice cream sales, the higher number of deaths we see. But that is not the whole story. There is a factor operating in the back that is confounding both scenarios: *heat*.

SO...

There is a causal relationship between heat and ice cream sales - and heat and deaths; so the correlational relationship between ice cream sales and deaths is really guided by the causal relationship that each variable shares with heat respectively.



It is the same in education research; we cannot necessarily attribute student achievement on a given assessment to any one particular program or policy without also identifying and factoring out all other contributing forces.

9

## Reporting

How clear and coherent is the reporting? Were non-significant results discussed as if they were significant? How did sample size influence the results? How were the data coded and what procedure was used to verify the coding? Are any biases or conflicts of interest stated?

[Click here](#) for more on reporting.



## Limitations and Rival Explanations

10

What are the limitations of the study? Does the study compare to the rest of the literature? Do the explanations come from experiment/observation, or from "expert opinion" and "advocacy"?

Does the study do a good job of offering alternative explanations? Were any extreme scores, large population or other conditions outlined as possibly having an influence on the results?

[Click here](#) for more information.