The Psychology of Education

I. What is Good Teaching?

**Expert - novice distinctions**
- elaborate knowledge systems
- set of overriding principles
- analytical, quickly diagnose & problem solve
- see overall patterns
- know students
- understand student mistakes
- more time planning
- heuristics
- automatic in the details

See Shulman's 7 areas of professional knowledge

"The art of education is like the art of medicine: it is an art that cannot be practiced without special gifts, but one that assumes exact and experimental knowledge relating to the human beings on which it is exercised" (Piaget, 1973)
II. Educational Research

**Theory** - integrated statement of principles and laws that explain a phenomenon & make predictions.

**Hypothesis** - theory based prediction of results

Commonly Used Research Methods

A. **Descriptive or Qualitative approach** - detailed information about a specific situation.

1. **Ethnography** - focuses on group life as it naturally occurs (sometimes participant).

2. **Case study** - intensive examination of a single person or situation

3. **Action Research** – exploring a critical question through observations, artifacts, and interviews

**Heisenberg Principle** - observer's presence may influence the subject's behavior or responses.

**Correlational research** - statistically describes relation between two variables.

**Correlation coefficient** - numerical estimate of association

**CORRELATIONAL RESEARCH DOES NOT TELL US ABOUT DIRECTION OF EFFECTS, OR THE CAUSE OF RELATIONS!**
B. **Experimental Approach** - permits determination of cause and effect.

1. Variables
   - **Independent variable** - directly manipulated by experimenter.
   - **Dependent variable** - variable measured for change

2. Assignment
   a. **random assignment** -
      - strength - equal chance of preexisting conditions
      - weakness - accidental differences
   b. **matching** - on variable of interest
      - strength - no accidental differences
      - weakness - time consuming & difficult

3. Types of experiments:
   a. **Lab experiments** - random assignment in controlled conditions
      - high control of variables
      - less ecological validity
   b. **Field experiments** - random assignment in natural settings.
      - produces higher ecological validity
      - less control of random variables
   c. **Natural experiments** - existing treatments in natural settings
      - ease & flexibility
      - loss of precision & interpretive power
Major Goal of Ed. Psych. - Understand teaching and learning. Research is primary tool

Principles - Established relationship between factors

Theory - Integrated statement of principles, explains and predicts.

Hawthorne Effect – a temporary change in behavior due to an adjustment in environmental conditions. The act of testing a new idea may spark a temporary improvement.

3 questions to ask about all research

1. Who funded the research?
2. How did scientists structure the research (what was the methodological design)?
3. How did they operationalize the essential constructs?
I do not believe that with greater specificity or by reducing the whole to its most essential parts we can produce the kind of prescriptions that have made the space shuttle, radar, or laser beam possible. The aspiration to create a prescriptive science of educational practice is, I believe, hopeless."

(Eisner, p. 8)


Rather, it (research on the scientific basis of teaching) calls for the same kind of steady effort that improved cures for Hodgkins disease, surgery for detached retinas, social roles for women, freedom from racial discrimination in employment, equality of educational opportunity, and human longevity. The natural and social sciences have contributed magnificently to these advancements of the human condition. Over the decades, scientific method can do the same for teaching and teacher education.


You make a great, a very great mistake, if you think psychology, being a science of the mind's laws, is something from which you can deduce definite programs and schemes and methods of instruction for immediate school use. Psychology is a science and teaching as art: And sciences never generate arts directly out of themselves. An intermediary inventive mind must make the application, by using its originality.