



Differentiating Three Types of Research

Ted Ward

1. *Descriptive Research.* The purpose of descriptive research is to document processes, relationships and/or outcomes so thoroughly that it will be possible to formulate hypotheses about the phenomena being documented. Major forms include ethnography and case studies; comparative studies; analyses of documents; historiography; longitudinal and developmental descriptions. Vital concerns include the formulation of research questions and their logical background; data sources; modes of data gathering; instruments; reliability and validity of measures.

2. *Experimental Research.* The purpose of experimental research is to test hypotheses in order to add to theory. Major forms include quasi-experimental comparisons, especially time series studies; and “true-experiment” laboratory-type studies (rare). Vital concerns are the formulation of research questions, hypotheses and their grounding; population and samples; experimental design (model); experimental controls and design accommodation to rule out significant rival hypotheses; reliability and validity of measures.

3. *Evaluative Research.* The purpose of evaluative research is to provide objective evidences which can inform important executive decision-making. Major forms include descriptive analyses against criteria; experimental comparisons based on criteria. Vital concerns are sources of criteria; quantification of criteria or objectifying the standards of judgment; data sources and so on if descriptive; population and samples and so on if experimental; statistical analyses.

Definitions and Maxims

- Education is deliberate.
- Learning is process with outcomes.
- Curriculum is learning experiences, selected and ordered according to values.
- Curriculum development is a matter of clarifying intentions and learning through the process.
- Curriculum, as a term, has three major uses:
 - Intended learning outcomes.
 - Educational experiences designed to lead to those outcomes.
 - The whole educational process and effects of a given learning experience.
- Curriculum research is the scientific study of any curricular problem or issue. (By contrast, “educational research” includes anything from the behavior of school bus drivers to the learning of nonsense syllables.)
- Curriculum research is almost always “in situ” (*in vivo* rather than *in vitro*).
- Research is inquiry.
- Experimentation is but one mode of inquiry, though it is the essential mode for theory-building.
- A problem is what needs clarifying or solving.
- An issue is the structure that underlies a problem.

- Disagreement is two or more notions about how to solve a problem. Controversy is difference of opinion about an issue.
- A research problem is a problem that can reasonably be solved by scientific procedures.
 - A research question is a well-focused question that a feasible research study can likely answer.
 - Data are organized (orderly) evidences.
 - Conclusions are opinions about the meaning of data. Proof is what laypeople assume that research can provide.
 - Science is the orderly building of information about the natural universe. Empiricism is the common faith of modern scientific method.
 - Empirical evidence derives only from observable phenomena.
 - A hypothesis is a testable statement about how two or more things are related. Assumptions are the key elements in the logical underpinnings of a hypothesis. Presuppositions are the stubborn (persistent, inflexible) principles of faith within oneself that allow or disallow given assumptions.
 - Scientism is exaggerated confidence in science.
 - Research can answer questions of the form “What is . . .?” Research cannot answer questions of the form “What should . . .?”

Curriculum Research As Science

The conventions of scientific research, though not sacred or cast in concrete, are valuable as a conceptual framework and for technical guidance. To the neophyte, the conventions may seem arbitrary; to the professional, they are logical expressions of accumulated experience in natural and social science.

The “Big Three” Criteria

Without all three of these master criteria, it isn’t responsible scientific research:

1. Integrity.

- Honesty (truth). . . accuracy in source and substance.
- Worth (importance). . . does not waste time of subjects, researcher or readers.
- Linkage. . . identifies its place in the chain of human knowledge.

2. Replicability.

Everything is to be done and reported in such thoroughness that if repeated by a reader the same findings would result.

3. Generalizability.

- Represents a class of problems.
- Rival hypotheses have been eliminated by design.
- Significance of the findings has been established.
- Conclusions have been drawn to relate to more than the particular situation studies.

The Five Parts

Logical sequence in *planning* research and an orderly system for *reporting* research demands sequential attention to five elements:

1. Problem—What needs to be better understood? Why is it important? How can it be defined? What does it relate to? What are the assumptions and presuppositions that underlie this view? What hypothesis needs to be tested?
2. Precedents in Literature—Who has already looked into this matter: What did they find? What does it mean? What is the “state of the art” in this topic? What research methods are used to look at it?
3. Procedure—What will you do to make your inquiry? How will you insure that your study is generalizable? What ways will you rule out rival hypotheses by design? What assurances of validity and reliability will you provide?
4. Findings—What do you/will you find? What data do you/will you get from your procedures? How do you/will you display these findings? analyze them for significance?
5. Conclusions—What do the findings mean? So what? What is the basis for your interpretation? What suggestions can you give?

Preparing a Curriculum Research Proposal: General Guidelines

1. Outline the proposal as a parallel of the standard five-part research report:
 - a) The Research Problem
 - b) Precedents in the Literature
 - i. Substantive precedents (What is known about the area of the problem)
 - ii. Procedural Precedents (How research in this area or specific sort of problem has been carried out)
 - c) Research Procedure
 - d) Plans for Assembling and Analyzing the Data (Findings)
 - e) Anticipated Conclusions
2. Sections a) and b) will depend extensively on how well you are acquainted with the previous research in the area of your interest. Don't neglect your reading.
3. Sections a) and c) of a proposal are the most important and are to be the most thoroughly prepared.
4. Examples of the instruments to be used for data gathering should be included in Section c).
5. In Section d), give examples of the ways the data will be arrayed—What will be counted, what will be compared with what, what tables will be possible, what statistical analysis will be needed to establish significance of which data.
6. In Section e) give a short review of the *worth* of the study, especially indicating what sorts of practical matters may be affected by the possible outcomes of the research. (*Don't* predict outcomes!)

Of concern in the evaluation of research proposals are these criteria:

- Problem statement is coherent and clear.
- Research questions are adequately focused and clarified.
- The logic of the research is well oriented to previous knowledge and literature.
- Appropriate methodology is proposed for the inquiry.
- Procedures and instruments are well described and rationalized.
- Nature and sources of data are adequately described.
- Adequate handling of reliability problems is demonstrated.
- Adequate handling of validity problems is demonstrated.
- Adequate planning of data management and analysis is demonstrated.
- Explicit projection of possible values of outcomes is given.