A Research Process Checklist


“This Research Process Checklist is designed to provide general guidelines for conducting educational research. It can be used as a planning guide before a research study begins, as a review procedure for a research study in progress, or as a criterion for evaluating completed research. The major issues that must be addressed in each step of the research process are enumerated in the checklist. The listing of issues is appropriate for a large variety of research studies but may not be appropriate in all cases. Depending on the nature of a particular study, certain of these issues might be ignored while other issues, not listed in this general checklist, might be addressed” (pp. 134-135).

I. Defining the research question and the nature of the research

1. Specify the research problem in clear and explicit terms.
2. Review the literature related to the research problem.
   A. Review substantive/conceptual issues.
   B. Review technical/methodological issues.
   C. Enumerate recommendations for improving research offered by those who have conducted previous research.
3. Determine whether the research questions deals with:
   A. Description
   B. Relationships or correlation
   C. Differences
4. Specify each research hypothesis to be explored in the study.
5. Classify the research approach as:
   A. Descriptive
   B. Correlational
   C. Quasi-experimental
   D. Experimental
6. Specify delimitations of the study.
7. Specify operating assumptions.

II. Defining variables, subjects, and the research design

Variables
8. Specify a conceptual definition of each of the following:
   A. All independent variables
   B. All dependent variables
   C. All controlled extraneous variables
   D. All other extraneous variables
9. Specify an operational definition of each of the following:
   _____ A. All independent variables
   _____ B. All dependent variables
   _____ C. All controlled extraneous variables
   _____ D. All other extraneous variables

Subjects
_____ 10. Specify the target population.
_____ 11. Specify the accessible population.
_____ 12. Specify the procedures that will be used for sample selection.
_____ 13. Identify any limitations to generalizability due to the sample-selection procedure.
_____ 14. When appropriate, specify procedures for assigning subjects to treatment groups.
_____ 16. Specify procedures for obtaining the subjects' informed consent to participate in the study.

Research Design

17. Specify procedures for controlling extraneous variables:
   _____ A. Design procedures
   _____ B. Statistical procedures

18. Summarize the overall research design, specifying:
   _____ A. The nature of the research (cf steps 3, 5 above)
   _____ B. The number and nature of any groups (i.e., experimental, control)
   _____ C. The number and sequence of observations made on the groups (e.g., pretests, posttests)

III. Verifying the objectivity, reliability, and the validity of observation instruments and procedures

19. Will the independent, dependent, control, and extraneous variables be observed using:
    _____ A. Currently available instruments/procedures?
    _____ B. Instruments/procedures developed for this research?

20. If instruments/procedures for observing variables will be developed (19B) specify:
    _____ A. Procedures for developing the instrument(s).
    _____ B. Procedures for pilot testing the instruments(s).

21. Specify evidence that the instruments and procedure used to observe the independent, dependent, control, and extraneous variables (steps 9, 19, and 20 above) are objective.

22. Specify evidence that the instruments and procedures used to observe the independent, dependent, control, and extraneous variables (steps 9, 19, and 20 above) are reliable.
    _____ A. For each variable, specify the index of reliability used.
23. Specify evidence that the instruments and procedures used to observe the independent, dependent, control, and extraneous variables (steps 9, 19, and 20 above) are valid.

A. For each variable, specify the index of validity used.

IV. Analyzing Data

24. Specify the procedures that will be used to provide basic descriptive information:
   A. Visual displays of data (e.g., graphs, charts).
   B. Descriptive statistics
   C. Indices of relationships

25. Specify the statistical hypothesis that corresponds to each research hypothesis described in step 4 above.

26. Specify the appropriate statistical procedure for testing each hypothesis stated in step 25:
   A. Indicate the significance level for inferential tests.
   B. Indicate possible violations of assumptions or other limitations of the procedures.

V. Interpreting Research Results

Internal Validity

27. Determine the internal validity of the study:
   A. Enumerate threats to internal validity that must be assessed in interpreting the results of the study.
   B. Evaluate the internal validity of the study.

External Validity

28. Determine the external validity of the study:
   A. Enumerate threats to external validity that must be assessed in interpreting the results of the study.
   B. Evaluate the external validity of the study.

Findings, Conclusions, and Recommendations

29. Summarize the study's findings.
30. Provide conclusions based on the study.
31. Describe how the results of the study related to the findings from previous research on the problem.

32. Provide recommendations based on the study:
   A. Substantial recommendations
   B. Methodological recommendations