

THE ELEMENTS OF A PROPOSAL

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A. Statement of the problem

1. State the problem in terms intelligible to someone who is generally sophisticated but who is relatively uninformed in the area of the problem.
2. Define and delimit the specific area of the research.
3. Foreshadow the hypotheses to be tested or the questions to be raised.
4. Indicate briefly the significance of the study (this item to be elaborated later).
5. Be certain to include somewhere a sentence such as, "The purpose of this research is..."

B. Review of Literature

1. Demonstrate to the reader that you have a comprehensive grasp of the field and are aware of important recent substantive and methodological developments.
2. Delineate the "jumping off place" for your study" how will your study refine, revise, or extend what is now known?
3. Avoid statements which imply that little has been done in the area or that what has been done is too extensive to permit easy summary. Statements of this sort are usually taken (and often rightly) as indications that the proposer is not really familiar with the literature.

C. Questions and/or Hypotheses

1. Questions are relevant to normative or census type research.)How many of them are there? Is there a relationship between them?) Hypotheses are relevant to theoretical research, and when you state hypotheses the reader is entitled to have an exposition of the theory that lead to them (and the assumptions underlying the theory.)
2. Hypotheses can be couched in four kinds of statements:
 - a. Literary null: a "no difference" form in terms of theoretical constructs.
 - b. Operational null: a "no difference" form in terms of the operations required to test the hypotheses.
 - c. Literary alternative: a form that states the hypothesis you will accept if the null hypothesis is rejected, stated in terms of theoretical construction (this is usually what you hope the experiment will show).
 - d. Operational alternative: similar to (c) except that the operations are specified.
3. In general, you should be prepared to interpret any possible outcome with respect to the questions or hypotheses. It will be helpful if you visualize in your mind's eye the tables (or the summary devices) which you expect to come out of the research, short of the actual data.

D. The Design

1. Indicate the steps you will take to answer every question or to test every hypothesis indicated in the previous section.
2. All research is plagued by the presence of confounding variables: the noise, as it were, that covers up the information you would like to have. Such confounding variables must either be eliminated by various kinds of controls, or be estimated and taken into account by randomization processes. Thus, in this section it will be proper for you to indicate:
 - a. The variables you propose to control, and how you propose to control them, experimentally or statistically.

- b. The variables you propose to randomize and the nature of the randomizing unit (pupils, grades, school, etc.)
3. You should be aware of the possible sources of error to which your design exposes you. No one can expect of you that you will in every situation produce a perfect, errorless design. However, you can be expected to be aware of the possible sources of error and to do what you can to overcome them or to take them into account in your interpretation. To demonstrate this awareness, you should yourself point out the sources of error in this section.
4. In discussing your design, it will be helpful if you can label it according to the terms of some logical or statistical typology. Such labeling is helpful in communicating your precise intention to the reader, and it also helps you to identify possible sources of error.

E. Instrumentation

1. In this section you should outline the instruments you propose to use. These should be described if they are already available; if not, the procedures you will follow to develop or select the instruments should be described.
2. Since the selection of instruments is in most cases also the operational definition of the variables, this is a most crucial step. It is at this level that a literary conception such as, "Intelligence is related to school achievement," becomes "Stanford-Binet I.Q. is related to Grade Point Average." Strictly speaking, any findings of your research will be relevant only to the instrumental or operational statement. You may adequately represent the variables contained in the conceptual statement of the problem. Of course, operational definitions are always arbitrary, but you should defend your particular brand of arbitrariness on some basis, even if none better are available than expediency, availability, or simplicity.
3. In addition to the validity problem posed in (2), you should also be aware of questions of reliability and objectivity, and deal with these.

F. Sampling

1. The first reason for being concerned with sampling is that of external validity, i.e., knowing the population to whom the findings apply. To generalize validly the findings for a sample to some defined population requires that the sample shall have been drawn from that population according to one of several probability sampling plans. By a probability sample, we mean that the probability of inclusion in the sample of any element in the population must be given *a priori* (all probability samples involve the idea of random sampling at some stage). In experimentation, two distinct steps are involved:
 - a. Random selection, i.e., the subjects to be included in the sample must all be chosen at random from the same population. You should define the population and indicate the sampling plan in detail.
 - b. Random assignment, i.e., the subjects selected for the sample must be assigned at random to one of the experimental treatments. Subjects assigned to a group on the basis of some already existing basis, e.g. membership in boy scouts vs. no membership in boy scouts, are not randomly assigned and hence the data are invalidated as experimental data, although not as study data (such studies are sometimes referred to as "ex post facto" experiments. You should indicate the assignment procedure you will use.
2. The second reason for being concerned with sampling is that of internal validity. Without a probability sample we cannot construct an error estimate; hence, we have no way of telling whether the findings represent mere "noise" or whether they also contain information and, if so, in what proportion.

G. Data Collection

1. You should outline your general plans for collecting the necessary data, including an explicit statement covering the field controls you will employ. The major concern here is generally that you will maintain equivalent situations for all groups.

2. You should give some idea of the time schedule you expect to follow, including any plans for counterbalancing to take care of order effects.

H. Data Analysis

1. You should specify the statistical and or other analytic procedures you will use. Where instrumentation remains to be developed it may not be possible to make a very specific statement in the absence of information regarding the strength of measurement, absence of information regarding the strength of measurement, continuity, form of distribution, etc, which may be expected.
2. Develop "bogus" tables to indicate the nature of the analysis.
3. Indicate briefly any special analytic tools you have available, e.g. IBM equipment.

I. Significance

1. Indicate how your research will refine, revise, or extend existing knowledge. Note that such refinements, revisions, or extensions may have either substantive or methodological significance.
2. Almost all studies have two potential audiences: Practitioners and professional peers. Statements relating the research to both groups are in order. (not necessary for Ph.D. dissertation.)
- 3.* Indicate what the research means for your institution, e.g. it fits in with an institutional research program, it will contribute to renewed interest in research on the part of colleagues, etc. Very often grants are made as much on the basis of cultivating an institution as on the basis of intrinsic research merit.
- 4.* Indicate what significance the research has in your own development and that of other members of the research team.

J. The Budget

1. Investigate the budget requirements of your own institution.
2. Investigate the budget requirements of the granting agency.
3. Do not overlook overhead items. (budget= \$ + time)

*These two items may properly be discussed in a cover letter if not in the proposal itself.