

Some Characteristics of Good Research

GOOD RESEARCH must have significance. Though it is often difficult to determine what is significant, a few areas seem clear. Teaching needs improvement, and any research that helps improve it is significant. We need to understand more about the learning process, and research which helps teachers know what facilitates learning and what blocks it in varying circumstances and with different individuals is helpful. We are becoming more concerned about realizing growth in such human values as self-respect and respect for others, reflective thinking, and the liberal attitudes and values which promote the growth of people. Where research enhances these values it is significant.

We want an improvement in the way people all over the world live; where research shows how to improve life it is significant. Living together creates many problems, and research which helps to solve these problems is significant. Many students carry on research unrelated to life and claim generous support on the grounds that their findings are "statistically significant." In evaluating any piece of research, one must appraise its social and human significance.

Statement of the Problem

Where a problem is clearly formulated, we can easily understand the research worker describing his procedures and conclusions. Where a problem is not stated clearly nor described simply, we may wonder what all the shooting is about. Some researchers try to solve dozens of problems or problems so big as to defy the efforts of a single individual. It is difficult to state problems simply, and sometimes when we try we go to the extreme

of over-simplifying them. In fact, we may do violence to the dynamics of the problem situation; we simplify by isolating a tiny part of a large problem, and the solution out of context has little or no relationship to the setting in which the original difficulty occurred. Difficult though it is, one of the most desirable characteristics of research is a clear-cut statement in simple terms of the problem being investigated.

Design of the Research

When we are assured that the problem is significant and see clearly what is to be investigated, we need to formulate a plan which can lead to valid conclusions. We must collect information necessary and sufficient to warrant a reliable inference. We must make sure that our design does not distort the evidence and that evidence, both pro and con, will appear. We need to be sure that our conclusions cannot be attributed chiefly to chance or to the operation of a constant error.

Fundamental Assumptions

In every good piece of research the experimental design is clearly related to the problem under attack. This relationship always carries with it a number of assumptions and the reader is helped when these assumptions are stated explicitly. Ordinarily there are assumptions dealing with sampling; with the selection and interpretation of statistical measures; with the reliability and validity of the data; with the integrity and competence of sources; and with the adequacy of the sources cited and of the data collected.

Though not directly mentioned, it is often falsely assumed that the procedures are described so clearly that other people

could repeat the experiment precisely; and that the groups being compared were either equal at the start or that the inequalities were compensated for during the experiment. Sometimes it is assumed without testing that the results are of a permanent character. Sometimes, too, there is the suggestion that merely stating assumptions explicitly without defending their reasonableness is sufficient to gain the reader's acceptance of them. We should expect good research to state assumptions and to defend their place in the study.

Related Studies

To understand a research, we do not always need to see its relationship to other studies but citation of related writings is customary. Strangely, though, researchers often refer to other studies without showing why they make the reference. The quality of research reports would be raised if writers would indicate why they bring in related material. They should point out how the studies thus cited are similar in setting, technique, procedures, timing, or materials. They should point out wherein they differ and why these differences are important. Sometimes writers appear to cite literature merely to "have references." We should applaud only those researches where the use of reference is intelligent.

Two-Group Comparison Design

Over and over again we read of investigations applying certain unique factors to one but not to the other of two groups. The second, however, necessarily receives something during the period of experimentation. When all the data have been collected, the differences found between the two groups are blandly assumed to have resulted from the application of the experimental factors. In reality these differences *merely suggest hypotheses for*

subsequent testing—and hardly anything more. When differences are found between two groups, the necessary postulate is that in another two groups, similarly chosen, these very same differences will be found. When this hypothesis is tested with two groups similarly chosen, only these particular differences will be sought. We should like more researches that "finish the job" by establishing and stating a hypothesis clearly, and then carefully testing it.

Conclusions and Implications

In sections of published research studies promising to report conclusions, we should expect to find statements which can be justified by the data and by the procedures described. It is all too common to find conclusions having little bearing upon the problem under inquiry. A certain carelessness in reporting conclusions detracts from the quality of the research. We should also expect research workers to make a distinction between justified conclusions, and certain implications *suggested*, but not fully supported, by the data. Occasionally a research worker deliberately reports some of his impressions and personal opinions growing out of experience in solving or in trying to solve the problem. Sometimes these subjective, personal impressions are extremely valuable to other research workers. Too little of this particular kind of reporting is done consciously.

In closing, may I point out that different areas of research probably place different weightings on these qualities. A research emphasizing historical inquiry may especially prize certain qualities minimized by others, but I believe we can say that in all types of research these general headings are important.—*Louis E. Rath*, director of educational research, New York University, and member of the ASCD Research Board.

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