

Reading and Evaluating Research Articles: A Set of Guidelines

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Preamble

In spite of the familiar argument that the primary purpose of academic publishing is the satisfaction of the "publish or perish" need, published materials do have a significant audience. In truth, the "argument" is rather circular and is not only cynical but also implies a kind of arcanity and futility. Of course it is true that even if this motivation is dominant there can be other secondary drives, and benefits, but there is another view of academic literature which is less cynical, even more pragmatic. This view reflects a less obvious need, but one more compelling to the academic mind: the need to conduct inquiry, and to do so on the basis of existing information. The one view of our publication efforts is based on a "push", whereas the other is an acknowledgement of the collective "pull", the marketplace need. The analogy of research as a mosaic is a valid one, I think, each piece conveying very little on its own - rather the whole picture being entirely dependent on a large number of tiny pieces in toto. Like someone working on a giant jig-saw puzzle, we collectively seek those missing and vital pieces; each of which gives us the improved view of what we are trying to assemble. This context provides the true reason for our work.

Some have lamented a lack of standards for the conduct of research and its reporting, and though I would argue that there are extant standards, consistent adherence to them is at least questionable. Some of us find assessment of a given contribution enormously challenging and the fit, significance and extendibility difficult to establish because of inconsistent application of the standards. Evaluation, of anything, is difficult work, made more so when there is lack of specificity and clarity of the criteria for

evaluation. The responsibility for establishing criteria is a shared one between author and evaluator....not that the author must delineate evaluation criteria in the written product, but surely the common knowledge of what makes for good research, and good research reporting, suggests the criteria and their application. The article which follows this preamble is an attempt to remind academics of the most salient criteria for research article evaluation in the fields of Organization and Management.

Some kinds of work, some products, are more difficult to evaluate than others.....I recently overheard two academic artists talking about the work of Norman Rockwell. One felt that Rockwell was not an artist, because "...his statements on life are incomplete.....he is merely a good illustrator"! Now I realize that art, by its very nature, is esthetic and must be evaluated in a largely subjective way. I, personally, very much appreciate Rockwell, but I cannot fully explain why! I also know that even the most tight piece of quantitative research is finally documented in writing; such writing is an art form and therefore, to some degree, there will always be room for subjectivity, but this can be minimized.

In the behavioral sciences, and even in the more finite sciences, the inevitable subjectivity calls for discipline, justification, standards, logic, argument, boundary description, and, in the case of research, a specific methodology. Most importantly, readers of the research report are entitled to know something of this set of constructs, as it pertains, in order to judge the merit of the findings or conclusions. In those studies using quantitative methods the specifics

of methodology are no more important than for studies based on qualitative assessment, but they are inherently more readily described. Unfortunately, even with quantitative studies, ease of description does not always stimulate clarity.

The audience for academic literature, to which there is reference in the opening statement of this article, is a real "mixed Bag". From beginning students, and even graduate students, who stumble through research articles trying, desperately, to determine what was discovered, and how such discoveries might relate to their own academic assignment, to the more sophisticated academics. The latter includes senior faculty members, editors and editorial reviewers and research toilers, who seek to ground their own research appropriately. This latter group has an especially keen requirement for enough detail and clarity to come to recognize shortcomings and limitations in prior research efforts, so that they may attempt improvement, or at least avoidance of similar problems.

It is out of a sense of frustration with much of the research in our field, that the following is presented as my attempt to guide the evaluation of research reports. It may also serve as a reminder for writers, since it is based on fundamental yet essential components and safeguards of the disciplined conduct of inquiry and its documentation. This is not intended to be an all-encompassing treatment of this subject. There are several resources which can add, significantly, to the information presented here, and readers may want to examine some of the publications in the reference list.

The purpose of any attempt to publish a research report, tenure of the author notwithstanding, is to expand the base of current understanding in a given area of knowledge and to convince readers/publishers that the efforts which produced this new knowledge were conducted to the acceptable standards for the discipline. As Kerlinger (1985) puts it, "...it is to report as expeditiously and clearly as possible, what was done, why it was done, the outcomes

of the doing, and the investigators conclusions." The validity of method, outcome and conclusions should always be at the center of the whole research effort, but once the report is finished these are judged, initially, by the editors/reviewers, and ultimately by the readers; of course, solely on the basis of what is written. The following suggestions are for authors/researchers, for students who read and evaluate journal articles, and, for the growing number of us involved in reviewing research reports for possible publication.

Problem/Purpose

All worthwhile research starts with a question in the mind of the researcher. We all remember, no doubt, agonizing over "what to study" when preparing for our theses and dissertations! We should all, also, be familiar with the negative research analogy of "throwing mud". If enough mud is thrown at a wall, some of it will stick! There is a much better approach to discovery, however:

...knowledge accumulates by means of individuals carefully mapping out areas likely to yield information: prospecting through the scree, rubble and dirt to find ore-bearing rock. The mapping that precedes the prospecting is based on carefully accumulated knowledge, theory and models...."

(Campbell, Daft, Hulin, 1982)

Despite the mixed metaphors within the above quotation, the point is made that starting from the basis of curiosity, and/or felt need based on well grounded information, is far more likely to produce worthwhile new information than a random stabbing based on "the more the better"! A first responsibility for a writer of the research report is to ensure that readers understand exactly what was being attempted and why! Without this essential starting point, all else fades to insignificance. Such information does not need to be so detailed that it dominates the article, in fact it can usually be covered with a brief initial statement, or, where

there is need for expansion it can be done within the review of literature (particularly purpose No.1, for such, as discussed below). This purpose does not quite cover the same ground as answers to the infamous "so what" question, which, more appropriately should, near the end of the report, extend findings and conclusions to a larger context.

In an hierarchical manner, research questions, though not the more specific investigative ones, should descend from this early statement of purpose. With regard to hypotheses, there is more flexibility. Often, hypotheses are clear though implicit, and only in the case of rather complex research questions, or where there are multiple tests within such, should hypotheses be spelled out in the early statements. Again, the guiding rule for the inclusion of hypotheses should be clarity of purpose and approach in communicating with your readers.

Definitions

In the event that your research constructs, or even terms within the discussion of constructs, are subject to any possible variance in understanding, you should provide clear definitions, as early as possible. First, of course, the variables should be identified, then clarified...but also the various terms used in this discussion must be defined. Note that the measurement methods themselves and any discussion of the instrument is best left to a later section (Design & Procedures).

Limitations & Assumptions

Virtually all research has limitations. While I do not suggest the writer belabor the point, it is good practice to acknowledge major limitations which are of a general nature. Again, more specific limitations such as instrument weakness, data gaps, etc., can be left to the discussion section.

Similarly, much research is based upon existing information and some assumptions. To

the degree that these assumptions relate to the problem, the questions, hypotheses and variables, it is helpful to reveal such assumptions in these early attempts to put the reader completely in the picture.

Review of the Literature

There are two primary purposes for the review of literature: first, to ground the current research appropriately, making sure that it answers previously unanswered, or poorly answered, questions; second, to shed light on the subject area, i.e. to place the research into context. When writing about prior research make sure that you discuss it in separately identifiable components which directly relate to these two purposes. If prior information was, say, anecdotal, then say so and express the need for more focused answers to the questions involved. Tie such proclamations to your problem statement directly.

It is always a good idea, except when the review is quite brief, to provide a summary of the literature reviewed. Answer here the question "what conclusions were you able to reach from reviewing the literature. Also state how the shortcomings of a particular piece of prior work, or a collection, relate to your efforts and how does it provide the basis for your research. In this manner you will reinforce, for readers, the purpose of your study and its origins. A rambling discussion of literature related to your topic can only be made complete by adding assessment, summary, an extension statement, and, finally, a transition/connection to your own work.

Design & Procedures

Readers of the report/article are entitled to know a little of methodological background for your findings. Of first priority are clearly articulated statements identifying and clarifying the variables and the nature of the data, how obtained, controlled and in what ways rigor was ensured. Validity and reliability assurances may

be overlooked in this section, or assumed, though editors of some journals may want brief mention of such. If these are suspect or if they led to challengeable findings, there should be appropriate disclosure in the Discussion section.

On specific research procedures used, the detail, which would probably fill chapter three of a dissertation, is not necessary. However, when some aspect of the procedures is central to understanding a construct, analysis or finding, better to add enough to permit full appreciation of that dependency. There is nothing worse than reading a report which begs for a simple procedural clarification to shed light on the real meaning of a construct being evaluated or measured. Furthermore, it is best to present this information before attempting to show what was found, in fact the sequence of all of these sections have ancient and logical progression: "description; analysis; assessment".

Data Presentation & Analysis

Without strength in all of the foregoing, a beautifully presented data section is virtually worthless. Clarity is, of course, the paramount objective and is achievable only if the purposes and specific questions (and or hypotheses) have been previously emphasized. Though the measures taken (in quantitative analysis) and statistical tests used are important, the real meaning of the measures and the tests are what must be communicated. Make certain that the design of the research is perfectly matched in data presentations. It is here that the clarity of prior design statements become truly meaningful. Significance tests and data gathered are not the central part of any research, they merely provide the basis for the analysis which must be done; make sure that this section reads with that overriding philosophy.

Summary & Discussion

Extracting meaning from the data analyzed, reaching justifiable conclusions and extending them in some way beyond the current research

are the most important responsibilities of the research report writer. However, this should not just be a repeat of the findings and it should progress from the very specific to the rather general. The "shape" of this discussion, then, is that of an inverted Vee. Some would argue that this progression should very specifically cover: A quick summary statement on results; acknowledgement of significant weaknesses (or negative indications); How the findings related to other theoretical propositions; Implications in similar or different settings, or even with different populations; and, finally, suggestions for other research.

Title

It may seem a trivial point, but the selection of a title for a research article does involve critical decisions. How many times have we seen a title appear in a reference list or bibliographic search which appears to have some relevance to our topic of interest only to later realize that the connection is illusory? Writers, it seems, are often torn between the need to convey (for the infamous tenure decisions mentioned earlier) a high level of intellectual content and the desire to reach appropriate readers with a clear title. While I sympathize with the one need/pressure, in the final analysis a title should spell out, correctly yet concisely, the nature of the research, and preferably the results! I realize that inclusion of results, outcomes and findings can mean abandonment of the brevity rule, but at least the most significant results can often be included in a title of reasonable length. A title which states, for example, "Relationship Shown Between Productivity and ESOP in a Factory Setting" is superior to "An Examination of Productivity Measures and ESOP; A Longitudinal Multivariate Study". While the latter may look more impressive on a c.v., it conveys very little, really.

(References on next page)

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