

## **How Can We Convince (Young) Colleagues That Less Really Is More?**

In a 2003 editorial in the *International Journal of Science and Mathematics Education*, I tried to make the case for a return to more experimental and quasi-experimental science education research that produces “lean and mean” results and less qualitative research that produces “thick and rich” interpretations (see my editorial below). Perhaps my words resonated with a majority of science education folks because I have not since received nor heard any opposing views on the subject since they appeared in the *IJSME* (one rival hypothesis is that no one actually read my words in the first place). In any case though, the question(s) remain: how can we get the pendulum to swing back toward more experimental and quasi-experimental research, and/or should I or anyone be promoting such a shift?

This question of lean and mean vs thick and rich has troubled me for quite some time—at least 20+ years—since I first made the decision as editor of *JRST* to seek and encourage qualitative research studies in response to several qualitative researchers who threatened to quit *NARST* if editorial policies weren’t changed to allow for a more diverse menu of research genres in the journal. The ploy and the plan worked. Today, *JRST* and most of the science education journals are now over-ridden with various forms of qualitative research. Some may argue that this is not inherently a problem, but I think it is if for no other reason, the “results” of qualitative research do not lend themselves to any kind of quantitative aggregation or to good qualitative synthesis for that matter. As a researcher, I relied heavily on such aggregations and syntheses as starting points in my own studies and as talking points for my work with practitioners. Now I must wade through scores of pages of one qualitative study at a time and even then, it is very difficult to synthesize or generalize results.

If wading through scores of pages of multiple studies is problematic for me, how can we expect practitioners and policy makers to be convinced or compelled by such research? In 1989, architects and authors of “Science for All Americans” made a strong case that “less is more” when it comes to topic coverage in the science curriculum. How can we make that case with our colleagues (especially the young ones) when it comes to our science education research? This is the question that I propose to share and discuss at the conference.

### ***An Argument for Succinctness!***

*IJSME* Editorial (2003, Volume 1. Issue #2)).

*Watson and Crick’s landmark research on DNA first appeared in Nature in 1953 in an article of 1078 words.*

It has been more than 20 years since the first qualitative papers began popping up in our journals and professional meetings in science and mathematics education--the Stake and Easley case study of 1976 comes to mind as one of the earliest examples of this “new” research

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genre. Early proponents of qualitative methodologies argued that results from traditional experimental and quasi-experimental designs were simply too sterile and devoid of context and meaning--that researchers who focused discussions on means, correlations, t-tests and F-tests were not only missing what was important, they were often distorting the truth--much like a topographer who might describe the dramatic above and below sea level variations in and around Hawaii as having an average elevation of zero meters! These arguments against traditional statistics resonated with novice researchers just entering the field and even with some of the most traditional experimentalist--and the push for "thicker and richer" data was on! The result is that we now have a research literature filled with papers that consist of long stories that often lack clear and concise results.

In talking about clear and concise reporting, I am not arguing for any one kind of research method over another. We need research that seeks to expose the thick and rich nature of teaching and learning. But we also need research that seeks to establish connections and causes with "lean and mean" research designs. In his 1981 keynote speech to the Annual Meeting of the National Association for Research in Science Teaching, Doug Roberts (1982) argued that qualitative and quantitative research genres both have a purpose and should inform and "complement" each other. He stressed that it is the merit of the arguments made that count, not the form of the research design.

Thick and rich descriptions are attractive and useful for researchers and practitioners who want to delve deeply into classroom research. But not all researchers want or need all the detail in a thick and rich report and certainly policy makers won't take the time to read them. While it is true that all research papers must tell some kind of story, as journal reviewers and editors, we must ask how much journal space can we afford for any one story? Like most of the other research journals, we have no official page limitations on submissions for IJSME. But there are practical limits. Journal space is a limited commodity and must be used wisely if the field is to benefit and grow from the research that is reported. It is critical that we as editors and reviewers demand journal articles that lay out claims and arguments in the most succinct manner possible regardless of the research genre employed.

Roberts, D. (1982). "The place of qualitative research in science education." *The Journal of Research in Science Teaching*, 19 (4), 277-292.