

Research Quality: Quantitative or Qualitative?

by Stephen P. Heyneman – January 31, 2014

This note will report on distortions from both quantitative and qualitative research. In the end I will argue that we should throw the terms out altogether and, instead of teaching graduate students in a class labeled 'qualitative research', that we should teach graduate students in a class simply titled 'research methods'.

BACKGROUND

Everyone has their own definition of qualitative research. Merriam (2009) says that the term 'defies a simple definition' (p. 13) because of the multiple philosophical, disciplinary, historical characteristics that underpin it. Some prefer to use the term 'naturalistic' or 'interpretative' instead of qualitative. Some believe that the term functions so well *because* it is so vague that it can incorporate a plethora of techniques and orientations. These might include positivist, post-positivist, interpretative, critical, postmodern and post-structural perspectives. Some suggest that the term qualitative reflects an interest in 'understanding' phenomena rather than (just) predicting, controlling or generalizing about it. But to researchers using empirical methods, this characterization would be patronizing. They might ask, who says that those who employ empirical techniques are not interested in understanding phenomena?

Prior to the use of computers, social research was limited to interventions and controlled experiments. Pioneering leaders in the social sciences—Freud, Merton, and Durkheim—drew their theories primarily on the basis of observations. Analyzing survey data had been cumbersome in the 1960s and early 1970s. I remember when SPSS arrived at the University of Chicago. It was a barely finished draft manual developed by Norman Nye, a graduate student at Stanford. Yet it revolutionized the ease by which researchers, including graduate students, could analyze data and make generalizations. Essentially, it opened social research to the masses.

With ease of access, the analysis of large-scale data sets became the dominant technique in the 1980's. Some parts of the research community had hostile reactions to this. Observational research had been trumped in terms of more mechanical techniques. But the rise in popularity led to over-precise conclusions which can seem naïve and counter-productive in terms of policy. Reports sometimes were sloppy about explaining the assumptions of cross-sectional data, for instance, the fact that measures of association were not 'causes' of changes in a dependent variable.

DISTORTIONS

Some hold that a quantitative researcher will remain objectively separated from the subject matter. They might suggest that empirical tests are 'truly neutral'. I think otherwise.

Take James S. Colman for instance. Throughout the 1980s, he believed that justice could be driven by scientific results. He was so convinced about the moral justice of school integration and the science supporting it, that he tended to treat 'white flight' away from urban school districts as a reflection of resistance to racial integration. He and I once found ourselves sharing a cab in Washington DC. "You are wrong Jim," I said, "you know that in many countries minority children even poor minority children do not perform worse on average than others." "Yes," he said, "I have been reading your work on that, but why not in the United States?"

"It is true in the United States," I said. Those who are poor and are highly motivated, do as well as others. I reminded him of the work of John Ogbu (1991) and his own work on social capital (1988). I asked him to consider the possibility that those who flee integration are motivated for the right reasons, not the wrong reasons; that they included not only whites but minorities as well. Jim, they aren't fleeing integration, they are fleeing something else—the likelihood that their children will experience school violence and classroom indiscipline. No responsible parent wants their child in an environment that teaches them things which are harmful. "It isn't poverty which drives scores of American students down," I said, "or race, or even minority status, but rather an impoverished spirit. It is the general lack of a desire to learn and this, in turn, is affected by public policy. What differentiates American from other children in the world is American public policy which assumes that curriculum has to entertain, and that students require many freedom but few obligations."

By this time we were downtown. I remember him looking at me with that thoughtful expression. He was quiet for a long time. "Maybe," he said. A year or so after that cab ride, I received a draft article in which he cited an essay I had written. On the draft he had written the word "Thanks" next to the citation. The point he was making in that article had to do with American adolescence. His idea of a well-balanced adolescence, and the point made that day in the cab had to do with the balance between privilege and obligations and the need of American adolescents of all races and all language groups to

adhere to a common standard of behavior and performance in schools.¹

James Coleman was among the ultimate in empirical researchers, yet he was deeply influenced by his emotions and as such he may have missed the true cause of what he was investigating. Neumann (2006) argues that emotion is a concomitant part of empirical research. Here is an illustration. Take today's research on school choice, a public policy issue of major consequence. It draws the best and the brightest of education researchers and it attracts research financing from multiple public and private sources. Scholars who investigate school choice typically employ the most modern of statistical methods, including causal inference, randomized trials and hierarchical linear modeling. But the results of their complex investigations are predictable, not on the basis of the data but on the basis of the investigator's orientation. For example, we investigated 21 school choice publications by Paul Peterson.

Table 1: School choice debate

Name of author	Article results		
	In favor of school choice	Against school choice	Neutral
Peterson	21	0	0
Hoxby	19	0	0
Carnoy	0	14	0
Rothstein	0	6	0
Kreuger	0	2	0
Rouse			3

All 21 concluded that school choice had a positive outcome. We found 19 articles by Caroline Hoxby, all 19 had positive outcomes. On the other hand we found 14 by Martin Carnoy and 6 by Rothstein; none concluded that school choice had favorable outcomes. The fact is that there is greater predictability of the outcomes of school choice research simply by knowing the name of the researcher than on the basis of the data or methods.

Articles on school choice confuse choice with competition. Competition is a construct of social scientists; choice is a policy acted on by families. Families are in favor of choice but often could care less about competition. Even researchers who are against school choice are likely to favor a choice of particular classroom experience for their own children. By ignoring the preferences of families, all articles on school choice bypass the essence of the education policy dilemma: the fact that there is a problem of failing schools and parents often want any policy which gives them the opportunity to avoid having their children harmed by the schools they attend.

The debate on school choice has become polarized and predictable. The effect of this polarization is counter-productive for education and for education research. The public cannot trust the empirical school choice findings because they cannot trust that those findings are based on a neutral consideration of the evidence. Nor is the public assured that a few weeks later new findings using new methods and new data sources won't reach the opposite conclusion. Because there is a low level of trust in the findings the reputation of education research declines.

In addition, the school choice research does not address the real problem. The real problem is that there are large numbers of failing schools and failing school districts. To be sure vouchers are a means to bypass this problem. Some articles conclude that choice doesn't work. But simply saying choice doesn't work and that we should better understand the teaching learning process (Ravitch, 2010) is not adequate and hence, not constructive.

Another example of the bias with empirical research is the fascination with national achievement scores and the tendency to blame American schools for their low international rankings in math and science. The problem with this empirical

research is that it is parochial. It assumes that 'school effects' happen in school. In Asia 'school' is seven days/week. It is an intensive marathon for adolescents who attend private tutoring classes after their regular school day has concluded. To test the effect of this 'non-school school-effect', we added up the studying time spent by students in Korea and the United States.

Table 2: Mathematical Performance and learning time

	Math	Time in School in Math instruction (hours per week)	Instructional weeks/ year	Total hours	Ratio of score to time
Korea	552	4.1	35.6	145.9	3.78
United States	472	3.7	36	133.2	3.54

	Math	Time out of school in Math Instruction	In-school + out-of-school instruction	Total hours	Ratio of score to time
Korea	552	2.1	6.3	224.3	2.46
United States	472	0.3	4.0	144	3.27

Source: PISA (2004) Learning for Tomorrow's World . Table 5.14.

Note: Math scores are from PISA 2003. Out-of-school activities include working with a tutor and attending out-of-school classes.¹⁰

We found that Korean students spend 64% more time studying than do American students. To be sure, the average score on a math test is higher for Korean students. But contrary to expectations, we found that American pupils were about 30 % more efficient in achieving each point on the PISA test than Korean students. (Heyneman, 2013). This approach was stimulated not by the search for greater empirical precision but by the results of historical and anthropological work which emphasized the importance of Korean cram schools (Tucker, 2011). All we did was quantify what anthropologists have known for years. What this suggests is that the divisions between quantitative and qualitative research techniques are artificial and that maintaining them in different categories as policy may be counterproductive.

IMPLICATIONS AND RECOMMENDATIONS

Insight is not determined by research technique. I have seen biased interviews and biased large scale surveys. I have seen randomized trials provide an elegant answer as to causality, but on a question of trivial importance. I have seen claims of sophistication in education research, but little change in the nature of the problem, that of failing schools and failing school systems. I have seen research findings used as weaponry in battles over social ideology, whether the problem of failing schools is solved through larger state financial allocations and social safety nets; or whether the problem of failing schools and systems is solved through demand side performance incentives and increased competition. In the end this research is not about schools or school children but about social ideology. And it has gotten the education community nowhere in terms of progress.

The implication of these experiences might suggest that we settle something, and that is the distinction we make between qualitative and quantitative research techniques. We sometimes treat them as if they were different categories of investigation and that they may lead to different types of insight. The distinction may have been justifiable decades ago, but today it has no discernible function and can lead to new problems. To new scholars it may suggest that one category is more culturally sensitive; that one category is more scientific; that one category can explain why things occur; that one category may insure that the findings are generalizable. Continuing to make distinctions between techniques may suggest to students that they need to choose instead of being responsible for both.

In my view we should submit ideas to tests of many kinds, including in depth discussions with respondents as well as surveys representative of larger populations. And we should always be on the lookout for the counter-factual; we should always watch for inconsistencies. It is the inconsistencies that may lead us to learning something new, not necessarily the umpteenth recitation of the general tendency. This is why we should pursue cases where race and poverty make little difference to school achievement. This is why we should take notice that the poor sometimes choose low fee private

schools instead of free public schools. This is why we should investigate why some cultures appear to be more diligent. This is why we should consider the possibility that schools that include God in the curriculum may have more manageable classrooms. This is why we should notice that parents, once offered a choice of schools, do not vote to return to the ex ante status. And this is why we should focus on whether it is normal for all families, not just white families, to flee schools that are dangerous.

I would suggest that graduate schools of education end the segregation of research techniques; that they teach research techniques as one continuum and place as much importance on personal interview and observation as on causal inference. The more expensive and more precise techniques have not led to greater insight or to an amelioration of our main education problems. And for that reason, we should pause and rethink our approach. Our emphasis should be on two things only: insight and the political feasibility of improvement. Other things, such as the elegance of precision: those are of secondary importance.

Notes

1. Adapted from Heyneman (1997).

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APPENDIX

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Cite This Article as: *Teachers College Record*, Date Published: January 31, 2014
<http://www.tcrecord.org> ID Number: 17400, Date Accessed: 2/13/2014 2:54:26 PM

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