

BUILDING THE BRIDGE FROM RESEARCH TO PRACTICE

Julie Luft
Arizona State University

Vexation

“Research is Practice” is a vexation that is familiar to all science educators. We contemplate this as individuals and wonder what it means to link research and practice in our own work. We also contemplate this topic as communities and want to know how practice can impact research, and how research can impact practice. At either level, the positions we hold about this important topic are often influenced by our community affiliations.

Within our communities, we have a culture that has norms, values, traditions, relationships, and expectations that are influenced by our history, location, language, and social class. Within cultures are sub-cultures that share qualities of the more encompassing culture. The larger science education culture, and the sub-cultures of teacher educators, teachers, and researchers (for example), hold different positions about how research and practice are and should be connected to one another. As a science educator, I am interested in the positions that these different sub-cultures have about research and practice.

The connection of research and practice has been contemplated over the years and has been presented in different ways. Richardson (1996), for instance, suggested that practical inquiry (research by teachers) and formal research (studies by researchers) do have a distinction. She suggested that practical research strives to explore classroom practice as it is occurring and helps a teacher build her knowledge. Formal research tends to be conducted to contribute to more theoretically based notions and is for communication within a specific group. Kelly and Lesh (2000) reinforced the importance of the research conducted by teachers when they included a chapter on action research in their handbook on research. More recently, Labree (2003) contemplated the difficulties of turning educational practitioners into educational researchers. The views that have been presented by these and other scholars describe for example; different ways that knowledge is constructed, various assumptions about the importance of certain forms of knowledge, theories or events that drive the resulting forms of knowledge creation, or barriers to crossing cultural borders.

The different views of scholars that contemplate the research and practice gap seem to stem from the different cultural positions. In the examples above, the culture that proposed and contemplated the issue of research and practice was comprised of academic scholars. Essentially, these are people who are rewarded to contemplate such issues and to share them publically with their peers. I would also like to take a similar cultural position as these academics, but I would like reach directly to the practitioner. Specifically, I want to know if the points presented by academics can really help bridge the gap of research and practice.

I realize that my position creates different perspectives that may be viewed as “us” and “them.” My ultimate goal is to reach beyond us and them and see if I can understand the enterprise of knowledge creation within culture. By starting with myself and teachers, I am hoping to create a basic understanding of my own knowledge and perceptions in this area. This will help me move towards understanding other positions (even beyond teachers), and then perhaps identify cross-cutting notions that surround research and practice as it relates to student learning (the goal for those in education). It may be in this journey I have to visit the idea of cultural knowledge (see Neito), cultural border crossings (Aikenhead), or other positions. In the end, my understanding or conclusion should help me come to some understanding of how I can best bridge the research and practice gap as the Research Director for the National Science Teachers Association (NSTA).

In my quest for areas to contemplate, these are some of the topics I am considering:

- Value – Is there a value on certain types of research in the different communities? What makes research valuable? Should there be a different value?
- Worldviews – Are there conflicting world views that are really insurmountable?
- Translation – Is it how the research is presented that makes is important to consider? Is it an access issue for teachers? Is it how teachers present their research to researchers that keeps researchers from drawing on their work?
- Responsibility – Are we (researchers and teachers) being responsible for our profession by not attending to the research of teachers, or the research of researchers?
- Participants in this discussion – Who should participate in the research to practice discussion in education?

Are these appropriate questions to begin this discussion with? If not, what should I start with or include in my list?

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I feel that there is a need to connect research to practice. In support of my interest, I recently had the chance to listen to a discussion by national leaders at the Congress of the NSTA. During their discussion about research and practice it was striking to hear practicing teachers ask for “research-based approaches to improve student learning.” They clearly valued educational research (most at least), but just wanted the bullet points or the conclusions so that they would know what to change in their instruction. They acknowledged that they were busy and didn’t have the time to sift through research journals to advance their knowledge. As they brought this point forward, I was surprised that they didn’t recognize their own practical research as valuable in the learning of their students. The researchers in the crowd offered a different position that involved research on student learning, theoretical grounding, and robust methods of data collection. They then sought to inform teachers about new forms of research that would be valuable to the teachers. By the end of this conversation, I felt the teachers really didn’t have a voice and that the researchers weren’t hearing the teachers.

As an active member in the Association of Science Teacher Educators (ASTE), the National Association for Research in Science Teaching (NARST), and NSTA, I am determined to think about how to connect research and practice.

In doing this, my first thoughts are very practical and emerge from my cultural position. As I study and contemplate this issue, I hope to revise my preliminary model to be more practically situated and cognizant of the different communities. It is difficult to say what the ultimate product will be, but my starting point is with teachers and researchers and can be expanded to different perspectives and communities.

At this point, I have a several ideas to bridge the research to practice gap. Space restrictions allow that I can only submit a few here and these are:

- What Research Says – One-page summaries written by educators who are familiar with research and who work with teachers. These have the goal of summarizing research for teachers, so that it can be used in the classroom. These will be developed with the assistance of ASTE, NARST, and NSTA members and published in NSTA journals and placed on web-sites.
- Teacher as Researcher day – NSTA conferences have a Teacher as Researcher day and it is one of the most popular events for teachers. Researchers need to be present at the NSTA sessions, and ASTE and NARST should host a Teacher as Researcher day. Teachers, of course, would attend ASTE and NARST for free.
- Sharing of teacher friendly material at conferences – NARST members handed out research materials at the last NSTA conference, and teachers valued these materials. This needs to be instituted at NSTA conferences.
- Research placed in NSTA journals – Researchers have a responsibility to share their work in journals as it relates to teachers. Encouraging researchers to do this will be a problem.
- NSTA presence at ASTE and NARST – Why is NSTA not at ASTE and NARST conferences? This would allow these communities to see the work of NSTA and understand how they could participate in this community.
- Teacher forums at NARST/ASTE – Panels of teachers to talk about the research they would like to read, research that has been valuable to them, and their own practical inquiries.
- Reduced journal rate for full-time teachers – The Journal of Research in Science Teaching and the Journal of Science Teacher Education should be offered to teachers at a reduced rate, or in combination with their NSTA membership.

As I continue to think of these solutions, I would like to situate them within my vexation, consider a framework their organization, and identify other ideas. Perhaps this is a matrix that could be constructed, which has a horizontal axis that moves from individuals to communities, and a vertical axis that consists of passive to active participation. Within the matrix, examples can be placed.

Relation to Situated Recognition

I think this problem is important to all science educators. When I think about my position on this problem - I lean towards the research side. However, I am very cognizant of the teacher’s perspective and often depend upon the ideas of teachers as I look at my data and pose questions to study. Could I do more? Should I do more? Can I work between the different groups involved in this problem? I am certainly at the Crossroads of this problem as a professor, a member of NSTA, and as a science educator in ASTE and NARST.