

BRIDGING THE RESEARCHER-PRACTITIONER GAP: VIEWS FROM DIFFERENT FIELDS

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Issues dealing with a researcher-practitioner gap are neither unique to one area nor are they a recent phenomenon. These issues are prevalent in fields such as computer science, education, healthcare, information systems, library and information science, management, nursing, political science, psychology, sociology, and social work. Given the fact that such a researcher-practitioner gap is prevalent, both across disciplines and time, how have professionals and academicians dealt with this issue? What can statistics education learn from what others have tried? This paper will provide an overview of how the researcher-practitioner gap has been addressed in a variety of fields, what attempts have been made to lessen the gap, and what strategies might apply to statistics programs. The challenges and opportunities will be discussed, as well as what may be learned from past efforts at bridging the researcher-practitioner gap.

PREVALENCE OF THE GAP ISSUE

The theme for this conference is “data and context in statistics education: towards an evidence-based society” and this session is about the “researcher-practitioner gap.” This paper is positioned to provide background context for the researcher-practitioner gap. The hope is that by considering both academic and practitioner views from a variety of disciplines, we might gain some insight into the reasons for such a gap and learn how others have dealt with it.

In 1982, Luthans and Martinko wrote that both academics and practitioners “*recognized and lamented*” the gap between academic research and actual practice in management and discussed using organizational behavior modification as a vehicle for bridging this gap. In 2007, Bartunch indicated that questions about management research impacting management practice had existed since at least 1958, when the *Academy of Management Journal* was started, and that “*multiple answers have been given in the Academy throughout the past 50 years*” (p.1324). She explored the implications for practice sections of 59 refereed papers in *AMJ* in 2006, finding that only 38 articles (64%) contained explicit implications for practice but that these were “*typically suggested in a decontextualized, distant way*” (Bartunch, 2007, p.1325) with no rationale, were often contradictory, and would be difficult to apply.

Similar disconnects between researchers and practitioners are evident in many different fields. For example, Hess and Mullen (1995) edited a book called *Practitioner-Researcher Partnerships: Building Knowledge from, in, and for Practice* in order to explore ways to promote partnerships in generating knowledge for social work practice. In 2005, Ferguson wrote that “*a wide gap still exists*” between research and practice in knowledge management. Nye (2008) indicated that a growing gap between theory and practice in the formulation of foreign policy was evident two decades ago and that this gap was likely to grow in the future. After a study of the decision making process of evaluators, Tourmen (2009) concluded that there is “*a need for dialogue between pragmatic and academic theories of evaluation, which could enrich each other.*”

Although this issue had been written about under various names, it is commonly referred to as the research-practice or theory-practice gap or divide. Table 1 shows the results for various searches of all the databases in the *ISI Web of Science*, which include conference proceedings, for all the years in the databases, starting from 1975, and for the last ten-year and five-year periods, as well as for a *Google Scholar* search of the five-year period. Different combinations of either “bridging the gap” or “divide” along with “practice” and either “research” or “theory” were used in each search, with all keywords appearing in the titles. As is evident from this search, such articles have been around for many years. These results represent the tip of the iceberg, as articles dealing with this topic do not necessarily include these terms in the title. The total for just the past five

years jumps to over 300 if these terms are searched as topics rather than in the title. Additionally, several other keywords can be used to produce articles on this issue.

Table 1. Number of hits in online searches for different keywords in article titles

Keyword 1	Keyword 2	Keyword 3	Web of Science			Google Scholar
			All years: 1975- present	10 years: 2000- 2009	5 years: 2005- 2009	5 years: 2005-2009
Bridging the gap	Practice	Research	115	59	34	72
		Theory	73	31	22	53
Divide	Practice	Research	5	4	3	12
		Theory	7	6	6	29
<i>TOTALS:</i>			<i>200</i>	<i>100</i>	<i>65</i>	<i>166</i>

CONTINUING DILEMMA

Consider what has been written about the impact of educational research over the years. In 1997, Anderson, a former president of the American Educational Research Association, stated:

One continuing dilemma for educational research as we move toward and into the 21st century will be how the research and scholarship that we do are ever going to find their way into practice. We've had various models of the proper relationship between research and practice. None of the models work very well. (Glaser, Lieberman, & Anderson, 1997, p. 25).

Six years later, De Corte (2003) concluded that “*education has until now not been improved in ways that reflect the substantial advances made over the past decades in our knowledge and understanding of the processes of learning and teaching*” (p.46). Subsequently, Hirschorn and Geelan (2008) said that “*teachers rarely directly implement the educational research produced by universities and seemingly do not value it*” (p. 1).

These comments are particularly troubling given the fact that the U.S. Department of Education’s Office of Educational Research and Improvement include requirements for research grantees to design their work with teacher involvement (Kennedy, 1997). Such comments, however, are not limited to education and may be found in almost every field. Everyone seems to acknowledge that this is a major problem, but not much progress seems to be made.

CULTURAL AND PROCEDURAL DIFFERENCES

A common interpretation of the divide between theory and practice, regardless of the field, refers to the dichotomy between two cultures. On one side are the researchers, intent on the rigors of sound academic research but divorced from the ongoing concerns of practice, and who are dismayed about the fact that practitioners are not reading or using their research results. On the other side are the practitioners, concerned with relevance in terms of bettering their practice but not interested in theoretical reasoning, and who claim that research results do not address existing problems and practical needs. The term rigor-relevance gap has been used in the literature as synonymous with the theory-practice gap.

Stephan (2006) writes from the perspective of having been program chair for a conference on the researcher-practitioner divide and editing a special issue of the *Journal of Social Issues* on this topic. He profiled the practitioners and researchers in intergroup relationship, focusing on cultural differences. He characterizes practitioners as “*action-oriented people*” who “*tend to be holistic in their approach to intergroup relations*” and “*are comfortable with the world of subjectivity*” (p.598). In contrast, he says that intergroup relations researchers, in part due to their training and advanced degrees, are more quantitatively oriented and “*work in professional contexts where publications based on theory and research are valued more than application of theory*” (p.599). Describing social work practitioners and researchers, Petrucci and Quinlan (2007) said

that they “*often have different preferred research strategies*” (p.25), with the former preferring qualitative approaches and the latter preferring quantitative approaches.

Based on a personal interview with John T. Mentzer, former president of both the Academy of Marketing Science and the Council of Logistics Management, two different approaches to the theory practice divide emerge. The first approach is represented by the American Marketing Association’s response to the academic-practitioner divide, which was to hold separate conferences. The Academy of Marketing Science was chartered in 1971 as a scholarly professional organization. Its focus is on the enhancement of marketing research and other academic issues, such as how to get research funded, how to teach, how to understand and negotiate the different roles of associate and assistant professor. To promote future scholars, they sponsor a mentoring program for doctoral students and new faculty. While these are certainly worthy endeavors, this approach helps to perpetuate the divide. Whitley (1984) provided another perspective on such a separation, describing the establishment of a series of management journals in the 1960s that generally “*cater for knowledge producers rather than lay practitioners*” (p.334) as one means of establishing and solidifying a reputation for the academic discipline.

A contrasting approach was taken by the Council of Logistics Management, which was started in 1967 and is now called the Council of Supply Chain Management Professionals. It had a different culture and a belief that cutting edge information is needed in order to have good practitioners. Practitioners attended scholarly presentations at the annual conferences to learn about current results in logistics research and academics attended practitioner presentations to learn about new pressing issues (Mentzer, personal communication). It is through such dialog that the two groups can push each other, with academics forced to supply practical implications for their research and practitioners providing both directions for future research and offering access for data collection. This type of interaction can benefit both sides and could lead to useful collaboration. One potential explanation for the difference between these two associations is that the number of logistic academics is very small relative to the practitioner members and, therefore, they need to be more responsive to the practitioner group.

GUIDELINES FOR BRIDGING THE GAP

Baker, Homan, Schonhoff, & Kreuter (1999) provided seven general principles of practice as guidelines for academic/practice/community research partnerships. Three of the principles related to considerations about the research process, such as identifying the best method, using multi-disciplinary approaches and evaluation strategies consistent with the partnership. Four of them dealt with considerations of building and maintaining interpersonal relations, which included acknowledging and honoring the different agendas and recognizing the difference between input and active involvement. They acknowledged that building the type of relationship “*based on mutual trust and respect...requires a significant time commitment at the beginning of the project (often before grant money is available) as well as during the grant period*” (p.89).

Based on his reading of the library literature, Chu (2007), a practicing librarian, suggested ways “*to frame analyses on research topics that are important to practitioners*” (p.6). While his proposed strategies are couched in language specific to library and information science, his focus is that research topics should be “*grounded in daily practice*” and have relevance for practitioners. From their review of the social work literature, Petrucci and Quinlan (2007) cited several responses to the research-practice gap: collaboration, putting the goals of practice first, and use of multiple methodologies. They then outlined how concept mapping might be used in practice-based research. Although they describe two cases where this was used and detail how concept mapping could meet both the rigor requirements of academics and the relevance requirement of practitioners, the involvement of the practitioners appeared to be more as data producers and recipients of the findings than as true collaborators.

Based on their critical review of the educational literature, Hirschhorn and Geelan (2008) outlined four approaches to closing this gap: (1) fix the practitioners, (2) fix the researchers, (3) fix the research, and (4) create research translation roles (pp. 10-11). Fixing the practitioner means finding ways to “*improve access to and use of research by practitioners*” in addition to what might be gained by practitioners who undergo graduate study (p.10). Fixing the researcher means holding them accountable for providing more direct information to teachers by publishing in teacher

journals and presenting to teachers at conferences. This does not mean that all academic research must be practitioner oriented, but when it is, the researcher should be responsible for ensuring delivery to teachers in an understandable way. Fixing the research means pursuing different types of research, moving away from “*generalized, decontextualized knowledge*” to “*descriptions of and prescriptions for practice*” (p.11). Educational research has increasingly made use of different qualitative methods by way of “*deemphasizing the quantitatively defined standards of validity and reliability and replacing them with standards of verisimilitude (plausibility to practitioners) and utility (usefulness to practitioners)*” (p.11). They resort to qualitative methods in order to provide contextual fidelity to the research. The fourth suggested strategy would not require either practitioners or researchers to modify their normal mode of operation, but would create a new role of *research translator*. According to Hirschhorn and Geelan (2008):

Such people would be adept at speaking the language of both practitioners and researchers and would be able to translate research findings into a form that is comprehensible, plausible, and appears potentially fruitful to practitioners, as well as to convey the interests and concerns of practitioners to researchers. (p.11)

Although potentially useful, this last strategy would require a different type of person, one steeped in both cultures and able to speak and be respected in both contexts. It would probably also require an institutional change and different reward structures. An obvious question is where would such a person be employed?

Halfhill and Huff (2003) continued the work of others by examining authorships in 17 years (1986-2002) of the *Journal of Applied Psychology* and *Personnel Psychology*. They found that academics, who comprise only about 30% of their field, publish about 90% and 80% of the articles in the two journals, respectively, with only a small proportion of articles representing academic-practitioner collaboration. Due to their focus on practitioners disseminating their applied research, they suggested changing journal format requirements in order to foster practitioner publication. They did question the role played by the underlying reward systems in the lack of publication from the practitioner side.

Focusing on academics, Rahmandad (2009) proposed a funded research model as one approach to bridge the relevance gap in management. If faculty built relationship with outside clients, this would help fund doctoral research as well as keep them aware of practitioner needs. Not only would the funded research support student training, it would provide relevant results for publication and acculturate future scholars to a two-way communication with practitioners. Dunne and Rawlins (2000) outlined the benefits of teaching teamwork skills to students in higher education so that they would be better prepared to collaborate once employed. Such skills need to be fostered in academics, so that they can provide better training and experiences for students. Integrating teamwork activities in graduate statistics courses could simultaneously meet future employment needs and instill the value of incorporating research and practice.

Collaborative research, where academics and practitioners form a working relationship that benefits both the advancement of theory and informs the community of practice, has been advocated frequently. Stephan (2006) provided a list of ways that researchers and practitioners could find to work collaboratively, but he does not speak to the need for a reward structure that would encourage such collaborations. Understanding the importance of and implementing a viable reward structure that would help foster such collaboration is essential (Rahmandad, 2009). Action research and Mode 2 knowledge production, which is driven by application, have been advocated as a way of bridging the rigor-relevance gap (Aram & Salipante, 2003). Such work is well suited for collaborative research.

CONSIDERATIONS FOR STATISTICS EDUCATION

In most fields, while the theory practice divide may separate the type of questions that interest the two groups, their general area has much in common. For example, educational researchers and teachers both focus on issues related to education, even if from different perspectives. Likewise for medical researchers and practicing health professionals, where both are interested in health related issues. But this is not as clear for either statistics or statistics education. Our focus needs to be broader. The topic area in which this session is embedded, “data and context in statistics education: towards an evidence-based society,” speaks to this need.

Considering statistics, we might assume that the scholars in the theory-practice divide are academic statisticians. But, who are the practitioners? To whose practice should the theoreticians be trying to connect? Moore and Cobb (2000) pointed out that “*there are many more non-academic statisticians than academic statisticians*” and that “*technology enables engineers and other directly productive employees to do much more statistics than in the past*” (p.7). Should statistical research be aimed at connecting with the non-academic statisticians or other practitioners who utilize statistics? If we consider academics who teach statistics and conduct research in issues related to statistics instruction as the theory side of the equation, who are on the practice side? Some of us teach future non-academic statisticians, but many of us teach students from a variety of fields who may go on to be either academics or practitioners in their respective areas. What, then, should be our concern for communicating our research results in a practitioner oriented manner? Perhaps we should view statistics education as the bridge between statistical theory and both academic researchers and practitioners in diverse fields. One role then is to ensure that statistical literacy and evidence-based practice become common place.

CONCLUSION

Although issues about the research and practice disconnect have been prevalent in various disciplines for many years, suggestions about how to narrow the gap have not proved successful. The hope was that a review of what has been done to reduce the researcher-practitioner gap would provide specific guidelines that could be directly applied to statistics education. While much has been suggested in the literature, no overriding solutions appear to stand out. The most consistent recommendation was for better communication and collaborative work between researcher and practitioner. There is a great opportunity for statistics education to foster collaboration across disciplines because our classes typically contain students from a variety of programs and with different goals. Some students will go on to be academics, others will be practitioners in their chosen profession. We can train them to work together, to interact on projects, to value data-driven decision making, and to present their results in a meaningful way that communicates to diverse audiences.

Thinking about this from a different perspective, perhaps we are making too much of this issue and should recognize that there are different goals and different agendas to be considered. Imagine a continuum from pure scholarship at one end to pure practice on the other. At the two extremes, the concern of the other extreme may not be important. Every piece of research does not have to be made relevant to practice. Likewise, every practitioner does not need to understand the theoretical underpinnings of their work. A viable goal might be for those in the middle of the continuum to help bridge the perceived gap. What might be the shape of such a distribution? Would it be normal, with the majority occupying the middle ground? Or would it be bimodal, with most of the field entrenched in one camp or the other? The answer might vary by discipline. I would like to think of the people engaged in statistical education as serving the translator role between statistical theory and techniques on one side and the people who need to apply them on the other.

In closing, I think it is important to note that the work of the International Association for Statistical Education (IASE) and conferences such as this one are providing the necessary foundation for improving statistical instruction and for communication across specialties and roles. Statistics educators, statisticians, teachers, and educators at large were invited to participate in ICOTS-8 as well as to contribute to the scientific programme. The very existence of IASE is an attempt at bridging the gap between theory and practice in statistics education.

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