MIS Quarterly

ISSUES AND OPINIONS

MARSHALING THE PROFESSIONAL EXPERIENCE OF DOCTORAL STUDENTS: A CONTRIBUTION TO THE PRACTICAL RELEVANCE DEBATE

By: **Heinz K. Klein**
School of Management
State University of New York at Binghamton
Binghamton, NY 13902-6000
U.S.A.
Salford University
Manchester M5 4WT
UNITED KINGDOM

Frantz Rowe
University of Nantes
8 Rue de Touraine
44000 Nantes
FRANCE and
Bentley University
175 Forest Street
Waltham, MA 02452-4705
U.S.A.
frantz.rowe@univ-nantes.fr

Appendix A

Bourdieu's Symbolic Capital

We are arguing that, through three practical domains (see p. 679), these students have acquired a significant amount of symbolic capital (Bourdieu 1984), capital that is now wasted rather than systematically developed. In fact, the "boot camp" mentality of the early Ph.D. training years seems to have had the impact of purging much of that capital from the students' psyche (Montealegre and Truex 2005; Truex and Long 2005; Truex et al. 2005). Indeed, Bourdieu stresses that economic, cultural, and social dimensions of human capital only matter socially if their importance in social fields confer some authority, credit, and recognition to those who own them, that is, when either form of capital represent some symbolic capital as well. Bourdieu (1980) also applied his theory to the field of academia to detect domination effects through the three

types of capital. Dominating disciplines and methods are those driven by the leading actors of academia and epistemic communities at large, including in our case software and database editors, certification bodies, and ranking producers. For PQDSs, a key component of this symbolic capital is a special type of knowledge, of cultural and social capital, acquired in the context of a community of practice, which we call applicative knowledge, and which is philosophically justified in Gadamer's (1975) theory of understanding and in Heidegger's (1931) analysis of the foundations of human existence (see Appendix D). Interestingly, these philosophically based insights are consistent with the findings of an entirely different research stream in cognitive sciences (see Appendix C).

We are convinced that the knowledge production gap does not stem only from the poor identification and treatment of *relevant* problems by academics. The fact that PQDSs can more easily identify and analyze some of them is an interesting step. But their transformation into an academically recognized problem and *solving* it also involves issues that are intrinsically linked to the communication gap. This communication gap itself involves not only the quality of the argument, but also the authority and credibility of the communicator since both have an influence on the perceived usefulness of the argument (Sussman and Siegal 2003). We have already seen that what is scientifically valid is not often what is considered useful by professionals. Ironically we could add that because academics and professionals operate in different fields their symbolic capital is at risk when knowledge transfer and production across communities of practice could be developed. Therefore, to be relevant can be more generally seen as doing more intensive and longitudinal research (Hatchuel 2001; Lyytinen1999; Markus and Lee 1999) so as to be credible.

Appendix B

An Aristotelian and Bourdieusian Reading of the Practical Types of Knowledge

Type A and Type B are part of what Bourdieu (1984) calls *cultural capital*. In his theory, cultural capital exists under three forms:

> 1) embodied, and as such it presupposes inculcation and assimilation work; this form is acquired through personal investment, not just received, is costly in time and can be best measured by time of acquisition; 2) objectivated by cultural goods, paintings, books, dictionaries, instruments, machines which are the trace or the achievement of theories or critiques of these theories, of problem formulations; 3) and finally in an institutionalized state, a particular objectivated form which has to be selected out, because it confers some quite original properties to cultural capital which it is supposed to guarantee, as we can see with the school degree. Most of cultural capital properties can be deducted by the fact that, in its fundamental state, it is linked to the body and presupposes embodiment (Bourdieu 1979, p. 3).

Type B is partly explicit knowledge and may certainly be acquired in excellent books or texts written by the profession and taught as part of the body of knowledge (BoK) of a certain profession (Iivari et al. 2008). Classically, any knowledge can be distinguished into "knowing-that" or declarative knowledge and "knowing-how" or procedural knowledge (Anderson 2000). Analogously, in science we refer to these as theory and method. While knowing-that can be taught by classical methods, the transmission of knowing-how for professional knowledge relies also on learning by doing and observation.

To comment further on the properties of these knowledge types based on classical distinctions, we first turn to Aristotle (1941). He distinguished four types of knowledge: (1) *episteme* (theory or elaborated system of situation-invariant propositions), (2) *techne* or technical knowledge (Herschbach 1995) of an instrumental or means-end rationality, (3) *ethics* related to moral values and norms (for a distinction, see Stahl 2008), and (4) *phronesis* or practical wisdom, also called *applicative knowledge* by Gadamer (Hirschheim and Klein 2003) (see Appendix D). *Techne* and *phronesis* are embedded in everyday practice of action and communication while *episteme* is not (Wyssusek and Totzke 2005). Type A and Type B can be considered as constituted of *techne* and *episteme*. Some of A and B is beyond *techne* and *episteme*; it is tacit and embedded in their daily practices (Cook and Brown1999) and practices can in fact be considered *amethodical* (Truex et al. 2000). That is, it is dependent on having stock repertoires of implicit and explicit knowledge experience to draw upon and use in a specific situation. Canonical methods may inform and even guide how the task is seen or undertaken, but the exigencies of the task-at-hand may require *amethodological* adjustments. Thus, knowing-in-practice is a situated accomplishment often based on noncognitive and tacit knowledge (the practice turn). It is situated in the body, in language, in the dynamics of interactions, and in a physical context embedded in space and artefacts (Cook and Brown 1999; Gherardi and Nicolini 2006; Postman 1988). Hence the "stickiness" of know-how—or difficulty to be transferred (Orlikowski 2002). A typical example is business process modeling. Those who have really practiced will know better how to deal with physical processes even though they were not until recently (Fedorowicz et al. 2007) part of the modeling itself.

With respect to Type C, this skill, based on *phronesis*, is essential when it comes to formulating interview guides, that is, the selection of questions and their proper wording so that "the questions really click with the practitioners' mind sets." These mind sets are influenced on the one hand by their prior experience and on the other hand by the professional community with which they continuously interact. This includes communication with immediate work colleagues as well as advice giving and taking from the larger professional community through personal contacts and meetings (workshops, conferences, etc.). This last point makes Type C part of what Bourdieu calls social capital. "Social capital is the set of current or potential resources which are linked to the ownership of a lasting network of interconnaissance (who is known in the network) and inter-reconnaissance (who is recognized) relationships" (Bourdieu 1980, p. 2).

Appendix C

Cognitive Sciences Foundations for the Justification of the Specific Knowledge of PQDSs

Dane and Pratt (2007) define intuition as affectively charged judgments that arise through rapid, nonconscious, and holistic associations. Their definition is supported by results in neurosciences and in organizational and cognitive psychology. In particular, the basal ganglia located in the brain play a critical role in implicit learning and intuition (Lieberman 2000). What the science suggests is that intuition—or instinct, or hunch, or "learning without awareness," or whatever you want to call it—is a real form of knowledge. Indeed, people can acquire knowledge through experience and display it in task performance in the absence of conscious awareness of what they have learned. This implicit learning (Kihlstrom et al. 2007) may be ineffable, and not always easy to get in touch with, but it can process more information on a more sophisticated level than most of us ever dreamed. Some psychologists now say that far from being the opposite of effective decision-making, intuition is inseparable from it. However, Khatri and Ng (2000) argue that such intuitive knowledge does not come easy; it is not simply armchair reflection that comes with age but requires years of experience to be effective. Results seem to confirm that it takes approximately a decade of heavy labor to master any field (Ross 2006). This kind of experience can typically only be acquired through intensive work in professional environments, such as law, medicine, management, or academic work in research communities.

Appendix D

Philosophical Foundations for the Justification of Specific Knowledge of PQDSs

The purpose of this appendix is to further clarify the nature of experiential knowledge in the various domains by outlining its foundation in the philosophical theory of knowledge. In particular, the insights that emerged from the linguistic and hermeneutical turns in 20th century philosophy help to clarify the notion of *applicative knowledge* because they point to the importance of social experience as a necessary complement to theoretical knowledge. This does not imply that PQDS have to adopt a phenomenological or hermeneutical methodology in their dissertation. It nevertheless constitutes an additional theoretical lens, which we have found explains the type of knowledge that can be specific to these students.

Theoretical knowledge (*episteme* in the sense of Aristotle) has been the primary concern of academia all the way back to scholasticism. In modern times it appears primarily in the form of theories. However, from the renaissance and the age of enlightenment forward, this cascading bias toward rigorous theory has lead to the disavowal of practice and reflection in the modern era; that is, until the appearance of the writings of the pragmatists philosophers (James, Pierce, Dewey, and Rorty) and of the linguistic and hermeneutic turn (Wittgenstein, Husserl, and Heidegger) (Reckwitz 2002). After World War II, the philosophical background literature for qualitative research has revitalized the interest in applicative knowledge, in particular through the absorption of Husserl's lifeworld phenomenology, Heidegger's existential philosophy in *Being and Time*, and Gadamer's philosophical hermeneutics (theory of human understanding). The hermeneutic and phenomenological reconceptualization of the theoretical understanding of applicative knowledge supports the claim that applicative knowledge must be given the same consideration as theory. Indeed, the ultimate source of all knowledge, theoretical and otherwise, is the immediate meanings acquired through social interaction in the life-world (Heidegger 1931). This knowledge acquisition process begins with learning the first sentences and effective during childhood all to the way to learning the most advanced "language games" (Wittgenstein 1953) through socialization into a

research community or other professional community of practice. Philosophically, the meanings associated with the work languages and work practices can be said to define "forms of life" in the sense of Wittgenstein (1953). The life-world of the CoP provides the ultimate grounding of core knowledge of CoP. Or, work languages and practices define a certain way of "being-in-the world" and consistent with Heidegger's (1931) viewpoint that all knowledge is rooted in "being-in-the-world" and "being-with."

For specifying the general characteristics of intuitive or applicative knowledge, it is best to rely on its discussion in philosophy, where the tradition distinguishing *different types of knowledge* extends all the way back to Aristotle (see Appendix B). Hermeneutic philosophy is concerned with identifying the human capabilities or "talents" that are involved in the act of understanding complex matters. Gadamer, referring to Aristotle's knowledge types of *phronesis* and *ethics*, relates this type of knowledge that is required for understanding a difficult text simply under the label "application" as in the following quote:

> Hermeneutics was divided up in the following way: a distinction was made between *subtilitas intelligendi* (gleaning insight[1]), and *subtilitas explicandi* (interpretation). Pietism added a third element, *subtilitas applicandi* (application)….The act of understanding was regarded as made up of these three elements. It is notable that all three are called *subtilitas*, i.e. they are not considered so much *as* methods that we have at our disposal *than* as a talent that requires particular finesse of mind (Gadamer 1975, p. 274).

By freely interpreting Gadamer (1975) and Habermas (1984, 1988), we can identify the following two partly overlapping characteristics by which applicative knowledge differs from the positivist knowledge ideal of the scientific method[2] (adapted from Hirschheim and Klein 2003, p. 266):

First, applicative knowledge closely connects to personal emotions and interests. It depends on the whole complex of presuppositions, fundamental beliefs (prejudices in the sense of Gadamer's hermeneutics), and attitudes that are part and parcel of a person's character. In contrast, *episteme* is relatively neutral and external to a person's inner core. Insofar as applicative knowledge is acquired from the environment, for example, by participation in political groups or professional communities of practice, the process is more one of socialization than cognitive learning even though cognitive, intellectual abilities are important to filter and digest what is acquired through social interaction. Because of these characteristics, applicative knowledge tends to have a close relationship to a person's identity, because to acquire it takes hard work and painful mistakes. Therefore, such knowledge takes on the value of a cherished property and becomes part of an individual's personality. It is mostly learned through various forms of apprenticeships, mentoring, and the "school of hard knocks." As such, it is closely related to personal insight and wisdom.

This naturally leads to the *second* characteristic of applicative knowledge, which is its holistic nature. It cannot be easily split into ends and means or generic methods and task-specific facts. Rather it is rooted in integrative, lived experiences such as work, play, and travel, various forms of symbolic communication, and, last but not least, the tradition into which someone is born or into which a person has chosen to integrate when leaving his/her native community.

A further consequence of these observations is that professional applicative knowledge can at least be partially shared among frequently interacting groups, but much of it remains tacit knowledge. This leads us to recognize the importance of CoP (communities of practice) for acquiring good intuitions or applicative knowledge. Insofar as it can be shared, professional CoP are the principal arenas where it is acquired. These ideas illustrate a further shift in ideas on the nature and origin of scientific knowledge, namely a shift of the locus of knowledge creation from the knowing subject to the shared practices of a competent community specialized on specific domains such as law, medicine, plumbing, etc., including the many academic disciplinary specializations (Cook and Brown 1999; Gherardi and Nicolini 2006; Reckwitz, 2002).

---

[1]In the translation, instead of "gleaning insight" we found "understanding," which does not make sense given the sentence "The act of understanding." We preferred to make it clearer and consistent by changing the translation of the Latin. We have also added the italics to the two words in the last sentence of the quote.

[2]On the positivist ideal of the methodological unity of all sciences, including the social and cultural ones, see Klein (2004, p.126)

Appendix E

The PQDS and the Interview

PQDS have less difficulty with focusing the data collection on what is really relevant than non-PQDSs, who often collect endless amounts of data because they lack the background information for judging practical relevance. On the other hand, PQDS, like other reflective practitioners, are more susceptible to parochial biases (Heiskanen and Newman 1999), but this can be more easily counteracted by the advisor than to tell the students which data are really relevant.

One of the most difficult tasks is typically the design of the interview guide. Qualitative methods textbooks simply recommend that researchers should typically begin with a large question in order to put the problem into its context (Demers 2003; Erlandson et al.1993, p. 93). However, PQDS may be embarrassed to ask the broader question of organizational policy-making and politics, because they identify with the culture of their former peers to get down to specifics quickly. This is especially a problem when the data collection site is the same as their former work place. The advisor can counteract this by allowing the student to go from specifics to the larger questions and discuss the larger issues with them in the advising meetings.

Once the interview guide has been settled, the next challenge is the proper conduct of the interview, which typically raises two issues. One issue is to keep the interview on track and the other to interpret the responses before asking the next question. Some questions will inescapably have to be skipped during the interview. For non-PQDSs, these kinds of choices are more error-prone than for a PQDS. A particularly delicate situation occurs when the interviewee uses his/her authority to speak of another subject. A quick judgment is needed to decide if this deviation is more valuable for the research than the predefined questions or if it is beside the point. Our combined experience with PQDS indicate that they are better able to handle this situation than non-PQDSs, maybe because of their more extensive experience with management meetings.

Finally, interpretation is easier for PQDS. They are able to avoid misinterpretations of the practitioners discourse."[3] This skill, based on *applicative knowledge*, is also essential when it comes to formulating interview guides, that is, the selection of questions and their proper wording so that the questions really click with the practitioners' mind sets.

Appendix F

Institutional Issues

Working out the curriculum implications of the principles outlined above is only the first step, and perhaps the easiest one, that university academics and administrators need to take to produce research that is valued by practitioners and to narrow the communication gap. To achieve these goals, several practical issues need to be addressed. Prominent among these are

- marketing the program in relation to industry proximity and prior experience of the host institution
- addressing human resources issues such as the recruiting and availability of faculty with appropriate motivation and qualifications to serve as dissertation advisors
- identifying possible funding mechanisms

Clearly not all institutions will wish to embark on the road proposed here. This is not solely because institutions need easy access to a broad base of work environments. Even those universities that are in such locations and already have programs that accept cross-overs from professional work environments need to consider how to market the concept in order to attract qualified candidates and avoid misunderstandings. An important consideration here is whether to create new Ph.D. programs for PQDSs only, or to combine these students in courses

[3]For example, in L's work, a clearly worded question was if professional characteristics of consultants coming from different disciplines (e.g., finance vs. law) would affect their behavior when using the company's KMS. Yet, the initial response of "no" turned out as being highly misleading when interpreted in the light of subsequent responses. The reason for this was that the consultant had interpreted the question as to whether he would like to use the KMS even though the question was not aimed at preferred use, but at actual behavior (Monnier-Senicourt 2008). Without prior practical experience and knowledge of the local culture related to the KMS, it would have been very difficult for the researcher to identify this hidden reinterpretation of the question by the respondent. The reason is that the true answer was not revealed until much later in the course of the interview, but it could not easily be found without guessing at the correct answer based on the interviewer's earlier direct observations of consultants' behavior.

with non-PQDSs. Another important issue is whether to accept them on a part-time basis or insist on full-time status. The latter may be preferable for two reasons: First, in order that they finish their studies in a timely fashion; and second, that they need to be properly socialized into academia, which can be difficult with part-time students. Of course, this will depend in part on the funding arrangements of their home organizations.

A second set of issues concerns faculty qualifications and personnel policies related to education, recruiting, retention, tenure and promotion (Bennis and O'Toole 2005). In fact ,the curriculum might be the effect, not the cause, of the knowledge production gap. Regarding educational issues, initially senior faculty with established publication records would be needed to jumpstart the program. They would need to mentor the involvement of junior faculty without jeopardizing their career progress. Naturally, doctoral programs for PQDSs require several faculty members with sufficient exposure to industry or public sector work environments, who can give sound advise on qualitative methods. However, adjusting the curriculum and providing the human resources for doing so might still be insufficient. Assuming that we as a field do not relegate the PQDS-Ph.D. to the role of clinical faculty or nontenure-track positions, we have to deal with the issue of recruitment, tenure, and promotion of the PQDS profile. Indeed, PQDS need to see that their research can help them secure a good position in academic institutions while not denying their value for practitioners. We think PQDSs can have a competitive advantage over non-PQDSs on the job market if they publish high quality research, but also because they would be likely to attract greater student interest, thanks to their experience and field work, and also probably receive more funding from stakeholders.

While we do consider that bridging the knowledge production gap is very important and that has been our focus in this paper, bridging the communication gap by reporting the results of research to practitioners is also very important. Attempts at external boundary spanning such as publishing in practitioner journals, writing practitioner books, and speaking at practitioner conferences should be rewarded. Some metric of external practitioner impact should register as valuable for recruiting and tenure (Hoffman 2004). Clearly such external boundary spanning activities cannot be at the expense of producing excellent scientific publications. Such boundary spanning activities should be in addition of very rigorous and relevant (in quality) but limited (in quantity) academic publications. Boundary spanning efforts can be rewarded by reducing the number of required top-tier publications for the PQDS profile.

A third issue is to create effective funding arrangements. Given that PQDS are likely to have been full-time wage earners for several years, it might be more expensive to fund their studies than those of non-PQDSs, funding that is necessary for attracting well qualified candidates. Maybe the CIFRE arrangements of France could provide a possible model for other countries in this regard. CIFRE stands for *Convention Industrielle de Formation par la Recherche en Entreprise*, which is a special industry contract (see Rowe and Pries Heje 2005). CIFRE students have a full-time employment contract with their company and are treated as full-time employees, except that a certain amount of time is negotiated and contracted between the company and the university research center so that the student has time to devote to his/her dissertation. In return, the sponsoring company or organization receives 15,000 Euros per year from a government agency during the three years of the CIFRE contract. Similar arrangements to that of the CIFRE in France could be very promising for attracting more qualified PQDSs.