Challenging the Scientist–Practitioner Model: Questions About I-O Education and Training

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The field of I-O psychology is commonly described as adhering to the scientist–practitioner model. For example, in his widely used textbook Muchinsky (2006) states, “the education of I-O psychologists is founded on the scientist–practitioner model, which trains them in both scientific inquiry and practical application” (p. 3). The SIOP guidelines for doctoral education and training describe the scientist–practitioner model as their “underlying theme” in that the “I/O psychologist is frequently both the generator of knowledge and the consumer/user of such knowledge” (SIOP, 1999, Perspective of the Guidelines: The Scientist–Practitioner).

In this article, I will argue that although our field is indeed founded on both science and practice, the true scientist–practitioner model is seldom enacted in our training programs. Despite our espousal of the scientist–practitioner model, it appears that our field has not closely examined what the model actually implies for training and professional activity. This is not surprising because the model was developed by psychologists concerned with the preparation of clinical psychologists (Benjamin & Baker, 2000). It may be that alternative models of professional preparation, such as the scholar–practitioner (Wright, 1983; Korman, 1974) or local clinical scientist (Stricker & Trierweiler, 1995) models may be more appropriate for industrial and organizational psychology as a whole. This article is intended to stimulate consideration of this possibility, and a closer enactment of the true scientist–practitioner model where that is appropriate.

Recent articles in TIP have reviewed the application of the scientist–practitioner and scholar–practitioner models to the preparation of I-O psychologists. Therefore I will only briefly review these perspectives, after which I will suggest a third approach, the “local clinical scientist” model (Stricker & Trierweiler, 1995), which may be well suited to education, training, and work in I-O psychology. In particular, this approach seems appropriate for programs that emphasize preparation for practice. In conclusion I will raise some questions about preparation for practice in I-O psychology.

The scientist–practitioner approach. The scientist–practitioner model is identified with the 1949 Boulder conference and characterizes the perspective usually associated with university-based academic programs in clinical psychology. In this tradition, psychologists would be trained in a manner that
integrates science and practice, with each a focal activity and each informing the other. For example, students would learn about scientific methods and findings and about practice techniques and skills. Simultaneously they would have opportunities to conduct scientific research and clinical practice under the supervision of faculty who themselves are actively engaged in both types of activity. Training programs would maintain research as well as clinical facilities, and the two activities would be integrated whenever possible, with research-based practice that itself is the subject of research.

An updated consideration of the Boulder model appeared in a section in the *American Psychologist* (Benjamin & Baker, 2000) that commemorated the 50th anniversary of the Boulder conference. Belar and Perry have also described the essential characteristics of the scientist–practitioner model as agreed by a national conference on this topic. According to Belar and Perry, “there was consensus that many programs that currently identify themselves as adherents of a scientist–practitioner model fail to meet this fundamental requirement” of integration of science with practice (1992, p. 71). In stronger terms, Stricker and Trierweiler have stated “the name scientist–practitioner model seems to have become merely a rhetorical device reserved for the scientific training programs” (1995, p. 995).

The application of the scientist–practitioner model in I-O psychology graduate training has recently been described by Bartels, Macan, Gutting, Lemming, and McCrea, (2005). These authors studied the mechanisms for addressing the practitioner side of the Boulder model as described in the SIOP listing of 122 master’s and 102 doctoral programs in I-O psychology and on programs’ Web sites. They found that 60% of master’s and 63% of doctoral programs described their orientation as scientist–practitioner. Master’s programs were more likely to describe themselves as “mainly applied” (30%) but doctoral programs were more commonly described as “mainly research”(26%; p. 61). Among the scientist–practitioner programs, the most common techniques for training in practice skills were reported to be supervised experience (88%), formal courses (23%), and consulting experience (16%). Supervised experience was described more commonly by master’s programs (96% vs. 80% for doctoral programs). In contrast, formal courses (20% vs. 27%) and consulting experience (6% vs. 28%) were reported more frequently by doctoral programs.

*The scholar–practitioner perspective.* A second popular model, called the Vail model after the 1973 conference at that location, is more commonly associated with professional schools of psychology, many of which award the PsyD degree. This “scholar–practitioner” model developed out of disillusionment with the narrow enactment of the scientist–practitioner model and distrust of its ability to produce graduates who were well-prepared for practice. In the words of Stricker and Trierweiler, it was thought to be “frozen in a model that emphasized existing models of scientific training at the expense of practice” (1995, p. 995).
According to Logan Wright, the scholar–practitioner model emphasized the scientific foundation of psychology training and high standards for service delivery. Science and practice would be integrated by “applied research...a critical (scientific) attitude in professional practice as in research...an intellectual interest in and understanding of one’s profession, the body of knowledge on which it is based, and the methods by which that knowledge is gained and professional service is rendered” (1983, p. 11). Scholar–practitioner programs generally place increased emphasis on science-based practice skills and may see themselves as preparing consumers of science rather than active scientists.

An application of the Vail model to graduate work in I-O psychology was described by Thompson, Garman, Horowitz, and Barr (2005), who argued that this model is particularly suited to the preparation of practitioners in I-O psychology. To illustrate, they discussed three curricular components of an I-O master’s program that focus on preparation for practice. The first is a professional development course covering “(a) self-awareness and interpersonal skills, (b) networking and professional integration, (c) diversity training, and (d) research and writing skills” (p. 108). The second is a student assessment center with individualized feedback, and the third is a two-course internship sequence that includes ethics, supervised practice, and career planning. Some students also work in the school’s consulting center. The program itself could be understood as action research that generates data that are used to revise and improve the program.

The local clinical scientist model. A third approach has developed from the scholar–practitioner model within the practice-oriented graduate training community. It appears highly relevant for education and training in I-O psychology as well as for the work of many practitioners. Trierweiler and Stricker define the local clinical scientist as “a critical investigator who uses scientific research and methods, general scholarship, and personal and professional experience to develop plausible and communicable formulations of local phenomena” (1998, pp. 24-25). They acknowledge that the activities of science and practice may appear incompatible for the individual psychologist. However, if science and practice are considered attitudes or identities, this incompatibility may be reduced or eliminated because the individual psychologist need not simultaneously be engaged in both science and practice. The scientific attitude implies “openness and receptivity to a multiplicity of approaches to a problem.” It also implies a valuing of empirical support, skepticism, awareness of personal biases, concern for “ethical implications of interventions,” and “collegial interaction and feedback” (Stricker & Trierweiler, 1995, p. 999).

Science is based upon empirical observation; in this model, equal consideration is given to development of skills in objective, subjective, participant, and self-observation. A scientific approach to practice would involve identification of a problem and formulation of alternate hypotheses to account for
observations. The practitioner must be skilled in the collection and application of pertinent information that may support or disprove these hypotheses. The model also focuses on consensual verification and replicability of results, and emphasizes the importance of publicly sharing one’s observations and conclusions with a community of peers.

This model was developed by clinical psychologists, hence the second word in its title. However, if we think more broadly about scientifically based practice in a variety of fields, we might substitute the word “applied” or “practicing” as a qualifier, as in “the local applied (or practicing) scientist model.”

Stricker and Trierweiler explain that science deals in generalizations that apply widely and is often understood to rely upon large samples and controlled research environments. Practice, on the other hand, takes place in a particular individual situation, which leads these authors to use the term “local.” The emphasis on “local thinking and problem solving” (1995, p. 997) places a focus on the context of practice. It calls attention to idiosyncratic, unique, or particular aspects of settings in which scientific approaches to practice are applied. In the words of Stricker and Trierweiler, “a major task for the local clinical scientist is to generate evidence that either supports or questions the applicability of scientific conclusions in particular cases” (p. 997).

The term “local” may refer to a particular application of science to the individual case. It may also denote considerations specific to particular groups, cultures, or subcultures. In addition, it implies the particular unique juxtaposition of events or characteristics and the specific space and time location of each particular instance. The emphasis is on bringing general science to bear on the individual case.

It seems that this approach should characterize the informed practice of I-O psychology. For example, empirical research can identify frameworks and methods that will be useful in the applied organizational work of I-O psychologists. However, “observations of the immediate setting and…experience gathered from years of local practice” (p. 998) should inform this applied work.

Although Trierweiler and Stricker present this view as a model for scientific practice, they draw implications for pedagogy. Students should be prepared in “attitudinal, critical thinking, and methodological skills” (1998, p. 31). Attitudes should be those of open inquiry and valuing of evidence. Critical thinking involves the application of logic to the examination of evidence and the search for confirmatory and disproving data. Methodological skills in both science and practice are essential.

Although to my knowledge there are currently no I-O graduate programs based on the local clinical scientist model, I suggest that a program based on this model might include some of the following elements:

1. Both didactic and experiential instruction in scientific method and technique, as well as in various I-O techniques and methods that have been found to be sound, scientifically and legally;
2. Training in the use of a sort of template for approaching an applied situation as a scientific experiment, including diagnosis, development of alternative hypotheses and identification of data that could support or challenge them, implementation of feasible methods of data collection to guide intervention, and a clear plan for evaluation;

3. Training in the application of a system perspective to the individual situation in which a particular technique is to be applied;

4. Supervised experience in proceeding with intervention on the basis of explicit hypotheses about what is going on in a particular situation;

5. Emphasis on identification and collection of types of data that can support or refute one’s hypotheses;

6. Cultivation of an attitude of inquiry and the value of generating new knowledge as well as applying that which already exists;

7. Emphasis on the importance of communicating results of this “local applied/practicing science” in ways that can advance knowledge, including case studies, qualitative research, workshops, books, and other means.

Implications and questions for education and training in I-O psychology: How do the various models guide our thinking about the design of graduate preparation in I-O psychology? First, although the three models discussed above were developed in the context of doctoral preparation in clinical psychology, they have been or could be extended to other applied fields such as I-O. In clinical psychology, the first two models are associated with different approaches to curriculum design and institutional setting of professional preparation. (Political tensions within psychology are also relevant. Stricker and Trierweiler state, “It is not necessary to take sides in this debate to observe that a great many decisions that have been made have been governed by considerations of political power rather than of sound training, and neither practice nor science benefits from such actions” [1995, p. 996].)

In contrast, I-O psychology does not appear to have engaged in the same degree of collective analysis of training models (or their politics). Academic programs in I-O psychology take a variety of approaches. Their designs often appear to be a result of local and idiosyncratic processes and choices rather than a collective decision to provide a specific sort of education and training experience. Would it be useful for our field to direct more attention to the conceptual foundation for the design of programs? Would this lead, perhaps undesirably, to increased uniformity or political tensions across programs?

Second, do our graduate programs actually enact the familiar scientist–practitioner model upon which we claim they are based? The remarks of Paul Muchinsky, discussant for a recent SIOP panel about these models, suggest that we do not. He pointed out that our field has resisted any form of accreditation, which might be used to verify that programs adequately and appropriately prepared their students for practice. Many I-O programs do not require internships or practica, and some discourage them (SIOP,
2006). Collectively we are conflicted about the appropriateness of licensure for practice in I-O psychology (SIOP, 2006), when licensure is the typical procedure for identifying professionals who have been prepared to provide services to the public. An argument can be made that many I-O programs voice support for the scientist–practitioner model without fully understanding and accepting the implications of this decision.

Third, as I have suggested elsewhere (Hays-Thomas, 2002), the scientist–practitioner model that seems so widely accepted may not be the most appropriate model for graduate programs that focus on the preparation of practitioners. In particular, the typical 2-year, 40- to 50-hour master’s program in I-O psychology, which usually emphasizes practice, may be better served by the scholar–practitioner or local clinical scientist models. Indeed, the SIOP Master’s Guidelines refer to “the generalization that master’s-level students will typically be consumers of I-O knowledge, rather than producers of new knowledge” (1994, pp. 2-3). In a 2-year program it is extremely challenging to include sufficient research training and experience for the generation of scientific knowledge, along with coverage of the appropriate knowledge base and necessary supervised application. However, the scientific attitude of the local (clinical) scientist model can be acquired. Such a program could cover foundational content as well as teach about research and scientific inference, cultivate an attitude of skeptical inquiry and local empirical problem solving, and prepare students to make good use of the research of others.

Fourth, is there a tension between any sort of science-based application in I-O psychology and the demands of practice in business settings? Ever-present financial pressures and the norms of business and industry may work in opposition to a deliberative and inquiring science-based approach.

Finally, we might ask whether the doctoral preparation of present faculty members has explicitly prepared them to teach and supervise the application of I-O psychology. How do we learn to supervise students who are learning the practice of our field? In clinical and counseling psychology education, and in the licensure requirements that constrain practice, it is clear that consideration has been given to the learning of supervision. Is it appropriate for I-O psychology to direct more attention to the teaching, supervision, and learning of practice, and can this be done while retaining the flexibility and variety that characterize our field?

References


**Author Note:** Lynn Bartels, Laura Koppes, Therese Macan, Paul Muchinsky, and Jennifer Thompson participated in an Education Forum organized by the author for presentation at the 2006 SIOP conference. This paper has benefited from their comments at that forum.