National Conference on Scientist–Practitioner Education and Training for the Professional Practice of Psychology

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The National Conference on Scientist–Practitioner Education and Training for the Professional Practice of Psychology was held in Gainesville, Florida, January 16–20, 1990. The purpose of this conference was to define the essential characteristics of the scientist–practitioner model. Since its promulgation at the Boulder Conference in 1949 (Raimy, 1950), this model has served as the framework for the majority of training programs in clinical psychology, and has been extended to other areas of professional practice in psychology, such as school, counseling, and industrial psychology. However, in the 40 years since the model's inception it had never been fully articulated by a national conference of leaders in the field.

The conference was sponsored by the Assembly of Scientist–Practitioners and the Department of Clinical and Health Psychology at the University of Florida. Cosponsors included the major education, training, and credentialing organizations in North American psychology.[1] Delegates represented wide diversity in psychology education, training, and work settings. The final policy document was accepted by acclamation after a process in which each word was open to debate by the entire group. A number of themes that emerged during the conference are briefly addressed below.

Themes of the Conference

Conference Climate

Despite sometimes spirited debate, the atmosphere of the conference was collaborative. Delegates quickly agreed that the scientist–practitioner model was applicable to newly emerging areas of practice as well as to the more traditional and well-established practice specialties. Although the model had been originally formulated for clinical psychology, there was a notable sensitivity on the part of delegates to the need to replace words such as *clinical* and *clinician* with *professional* or *practitioner* to better represent the breadth of current areas of practice.

Necessity of the Model

Delegates asserted that the scientist–practitioner model of education and training was essential for the ever-changing discipline of psychology. Delegates agreed not to debate the efficacy of other models, but repeatedly emphasized that interlocking skills in science and practice were the foundation for generating the knowledge base and applications to practice that psychology required in order to continue to develop and contribute to human welfare. The model was considered ideal for psychologists who wish to use scientific methods in the conduct of professional practice.

Integration

Working groups repeatedly underscored that the scientist–practitioner model is not a summation of its parts, nor is it a point on a continuum between programs emphasizing science and programs emphasizing practice. Education and training in either research or practice alone, or concurrently without integration, were viewed as not fulfilling the requirements for implementation of this model. There was consensus that many programs that currently identify themselves as adherents of a scientist–practitioner model fail to meet this fundamental requirement. To better represent the integrative aspect, many delegates wished to replace the dash in *scientist–practitioner* with a symbol reflecting the integration and interaction of the two aspects (e.g., scientist ~ practitioner, scientist × practitioner).

Who Are Scientist-Practitioners?

It was the consensus that a scientist–practitioner is not defined by job title or role. "The graduate of this training

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[1] American Association of State Psychology Boards, American Board of Professional Psychology, American Psychological Association of Graduate Students, Association of Counseling Center Training Agents, Association of Directors of Psychology Training Clinics, Association of Heads of Psychology Departments (SEPA), Association of Medical School Professors of Psychology, Association of Practicing Psychologists, Association of Psychology Internship Centers, Association of VA Chief Psychologists, Canadian Psychological Association, Council of Graduate Departments of Psychology, Council of University Directors of Clinical Psychology, Council of Counseling Psychology Training Programs, Council of Directors of School Psychology Programs, Council of Directors of Health Psychology Training, Council of Directors of Social Psychology Programs, Council of Community Psychology Program Directors, National Council of Schools of Professional Psychology, National Register of Health Service Providers in Psychology.

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model is capable of functioning as an investigator and as a practitioner, and may function as either or both, consistent with the highest standards in psychology." Many psychologists misunderstand this model and assert that it is ineffective because some graduates fail to publish in scientific journals. Delegates emphasized that the integration of scientific methods with professional practice is the hallmark of the model, and noted that the use of research skills often does not lead to journal publication. However, they agreed that a basic requirement of scientific practice is that results needed to be communicable.

The conference policy statement also describes the didactic and experiential scientific and professional practice components in the preparation of the scientist–practitioner. It has been forwarded to the American Psychological Association (APA) Committee on Accreditation for consideration as a standard for designation of scientist–practitioner programs. Conference participants believed that APA should begin accrediting programs according to the educational model espoused by the program, and that the policy document developed at this conference could be used as a reference for defining the scientist–practitioner model. Because every word of this policy statement was open to debate by the entire delegation, the document is presented below to allow the conference results to speak for themselves rather than be paraphrased.

REFERENCE

Raimy, V. C. (1950). *Training in clinical psychology.* New York: Prentice-Hall.

APPENDIX

Conference Policy Statement

Basic Principles

The scientist–practitioner model of education and training in psychology is an integrative approach to science and practice wherein each must continually inform the other. This model represents more than a summation of both parts. Scientist–practitioner psychologists embody a research orientation in their practice and a practice relevance in their research. Thus, a scientist–practitioner is not defined by a job title or a role, but rather by an integrated approach to both science and practice. The model entails development of interlocking skills to foster a career-long process of psychological investigation, assessment, and intervention.

The scientist–practitioner model contributes to and is essential for the ever changing discipline of psychology. The model extends beyond current domains to newly emerging areas that embody science and practice, and is not restricted to specific content areas. It represents an overall theoretical, empirical, and experiential approach to science and professional practice in psychology.

All components of the didactic and experiential preparation for science and practice are consistent with the American Psychological Association Ethical Principles of Psychologists. Sensitivity to issues related to cross-cultural, multiethnic, and other individual differences shall be reflected at all levels of the training program.

Education and training in the scientist–practitioner model provide the student broad exposure to the knowledge base in the science of psychology and related fields that form the foundation of our discipline. The model provides for the development of the knowledge, skills, and attitudes that encourage the scientific approach to practice, and retains the sense of the Utah Conference Resolution 1.3: "It is essential in the graduate education of applied and professional psychologists to include education and training in the conduct of scientific research as well as the application of products of psychological research."

Both the knowledge base in psychology and the practice problems addressed by the scientist–practitioner are constantly evolving and changing. Therefore, the scientist–practitioner is able to extend simultaneously the boundaries and applications of scientific knowledge and to adapt to the changing needs of professional practice. Training in research prepares the scientist–practitioner for distinguishing fact from opinion in applications of the science of behavior and for innovation in existing theory and techniques.

The integration of education and training in the scientist–practitioner model is a continuous process. Socialization of the student within this model is an integral part of that process. This process also requires appropriate role models who demonstrate appreciation for both scientific inquiry and practice in psychology. Although psychologists are interested in forming bridges among the scientific core areas, the scientist–practitioner is, by definition, also committed to bridging the gap between scientific foundations and professional practice.

The scientist–practitioner model produces a psychologist who is uniquely educated and trained to generate and integrate scientific and professional knowledge, attitudes, and skills so as to further psychological science, the professional practice of psychology, and human welfare. The graduate of this training model is capable of functioning as an investigator and as a practitioner, and may function as either or both, consistent with the highest standards in psychology. The scientist–practitioner model is ideal for psychologists who utilize scientific methods in the conduct of professional practice.

Components for the Preparation of the Scientist–Practitioner

Didactic Scientific Component

The goal of the didactic components of the basic scientific core is to ensure mastery of the material in the following

domains. This mastery includes issues of normal and abnormal behavior and human life span development. This goal also includes knowledge of a wide range of individual differences including, but not limited to ethnicity, gender, age, culture, religion, race, and life-style.

The foundation of professional practice is the evolving body of knowledge in the discipline of psychology. While programs will vary in emphasis and in available resources, sound graduate education in general psychology is essential. The curriculum shall encompass the equivalent of a minimum three academic years of full-time resident graduate study. Instruction in scientific and professional ethics and standards, research design and methodology, statistics, psychological measurement, and history and systems of psychology must be included in every doctoral program in professional psychology. Further, the program shall require each student to demonstrate competence in each of the following substantive content areas: biological bases of behavior, cognitive–affective bases of behavior, social bases of behavior, and individual behavior.

Integrating science and professional practice requires a knowledge base sufficient to formulate problems for assessment and intervention. The additional scientific education directly related to professional practice required by the scientist–practitioner includes the following:

1. Assessment
   a. Knowledge of the theories and scientific bases of psychological tests and measurements.
   b. Competence to design research to evaluate the applicability (including limitations), reliability, and validity of existing tests and measurements and to develop new measures.
   c. Knowledge of theories and scientific bases of a representative sample of relevant assessment strategies in the student's area of concentration.
2. Intervention (use here includes, in addition to treatment, such service delivery categories as prevention and consultation with individuals, groups, and/or organizations)
   a. Knowledge of theories and scientific bases of intervention.
   b. Competence to design research to evaluate the applicability (including limitations), reliability, validity, process mechanisms, and efficacy of current interventions and to develop new interventions.
   c. Knowledge of theories and scientific bases of a representative sample of relevant interventions in the student's area of concentration.

The scientific core and the additional scientific education within the scientist–practitioner model must involve formal, interactive instructional contact with appropriate faculty who are expert in the particular domain. These components must include the areas identified. The particular orientation and pedagogical methods may vary according to the focus or orientation of the program. The overall curriculum must exhibit an integrity consistent with the program's orientation or focus.

Didactic Practice Core

The minimum didactic components of professional practice education are designed to educate students in the strategies and tactics of applied work. These represent the applications of scientific thinking and behavior to problem-solving and hypothesis-testing in practice. The intent of these components is to foster a unique process of case/problem conceptualization that entails operational delineation of problems useful for the planning of intervention. These constructions and the interventions that flow from them are continuously refined through scientific validation.

The minimum didactic components are as follows:

1. Establishing working relationships, communication skills, interviewing techniques, and consultation skills (depending on the nature of the applied program).
2. Case/problem conceptualization grounded in valid assessment procedures and the scientific literature.
3. Scientifically validated interventions that follow logically from the case/problem conceptualization.
4. The impact of the personal characteristics of the scientist–practitioner in professional interactions.
5. Analysis of risks and benefits of assessment and intervention, informed consent, and iatrogenic issues.
6. Ethical, legal, and professional mandates to consider scientific evidence when choosing among alternative assessments and interventions.
7. Socialization into the professional practice of psychology including the encouragement of appropriate scientific–professional affiliations.
8. The implications of cultural and ethnic factors, and important individual differences, as delineated in the Didactic Scientific Core.
9. Education in supervision and other forms of instruction.

Education in the practice of psychology must begin at entry into the graduate program. Core faculty must be involved in professional practice education and training at all stages of the student's program. All aspects of professional practice education and training should be carefully selected and evaluated so that the continuity of scientist–practitioner thinking and practices is maintained. Settings in which the intensive education for practice occurs must allow trainees to be engaged in the active integration of science and practice.

Scientific Experiential Component

Experiential is defined by the degree to which a student is involved in learning by doing, participating, and contributing to knowledge.

The scientist–practitioner approach to critical thinking should be initiated, modeled, and taught from the beginning of the student's enrollment in the graduate program. Moreover, education and training in the scientist–practitioner model is a continuous and interactive process. This process develops from close supervision to independence, from specific fact and skill to conceptualization and synthesis, and from observation to imple-

mentation. It involves experience in a variety of modes of communication and it develops with knowledge and appreciation of ethical implications and principles.

Scientist–practitioner psychologists reflect a research orientation in their practice and a practice relevance in their research. Therefore, there will be an experiential component that emphasizes research to the same extent that it emphasizes practice, and, more important, it reflects an integration of the two. Formal, systematic, documented scientific experiences will occur throughout the student's tenure in the doctoral program. These formal research experiences should be sufficiently diverse to facilitate generalization of scientific/practice inquiry.

Scientific experience may occur in the classroom, through tutorials, or in laboratory/field experiences. It must also include a pre-dissertation research project and the dissertation. Although this activity would initially focus on the tools required to perform as a scientist–practitioner, it would increasingly involve concentrated activity in a particular area reflecting the student's focal interest. The conception and design of the student's research should be consistent with the scientist–practitioner doctoral training model.

The doctoral dissertation should be viewed as a learning experience that enhances the development of the scientist–practitioner. The doctoral dissertation must demonstrate the student's competence to carry out an original, independent scientific investigation that furthers psychological knowledge. Students should be encouraged to select research topics and methods relevant to their development as scientist–practitioners; therefore diversity in methods is endorsed.

Professional Practice Experiential Core

1. The experiential component of the scientist–practitioner model focuses on the systematic application of knowledge from scientific domains to practice with individuals, groups, and organizations, the systematic collection of information, and the communication of such information.

2. The process of critical thinking, hypothesis testing, and other elements of the scientific method should be engendered and integrated into all experiential activities throughout the training process. Evidence for this integration should be visible in the experiential and research activities of the faculty and their students. One of the particular characteristics of the scientist–practitioner model is that it facilitates the emergence of ideas in the field (it is generative rather than static).

3. The experiential component of practice should be broad and general rather than narrow and specific; this does not preclude some emphasis on the preparation for areas of concentration. The experiential component should include several different levels of experiences across a broad variety of settings and populations. The experiential component focuses on the areas of case/problem formulation, assessment, intervention, evaluation, and consultation.

4. Early experiential training is best accomplished under the aegis of the program faculty, with the setting matching the goal established for the training experience. Later phases of training could be supplemented through various other external placements.

5. Issues of ethics and social and legal responsibility should be an integral part of the experiential component throughout the training process.

6. The experiential component will direct specific attention to issues related to individual differences including cross-cultural and multiethnic factors. These issues also should be integral parts of the experiential component throughout the training process.

7. There should be a one-year, post-practica, intensive supervised predoctoral practice experience as part of the professional student's doctoral program. This training is known as an internship, residency, or field experience and may be distributed over one or more years. The setting wherein this training for practice occurs must provide students with opportunities to engage in additional formal research that supplements their scientist–practitioner experiences. For clinical, counseling, or school psychology, the internship is offered for one year full-time or is distributed over two years. This experience should be a continuation of the scientist–practitioner model as articulated for graduate programs.

8. The experiential component of scientist–practitioner education and training begins during the first year and focuses on the systematic application of knowledge from core scientific substantive areas to practice.

9. It is recognized that in some areas of applied psychology, models for supervised field experiences normally called internships within the scientist–practitioner context are still evolving.

Integration of All Education and Training

It is essential that there be integration of the basic scientific core with all coursework and other didactic and experiential components of the program.

The fundamental principles and scientific bases of general psychological and psychometric theory, critical evaluation techniques, and research design and implementation must be continuously integrated and reinforced in all content and practice areas from the beginning to the end of graduate education and training. The goal of education and training is a continuation of this emphasis throughout the professional career of the scientist–practitioner.

System Characteristics

1. *Faculty.* In general, faculty responsible for both domains of the curriculum should be psychologists who are full-time at the university. The scientist–practitioner orientation shall be reflected in the daily activities of sufficient numbers of these program faculty, given the number of students in a program, to provide appropriate role modeling. Such role modeling and mentoring are crucial to training in and the continuation of the scientist–practitioner model. The scientist–practitioner faculty integrate the science and practice of psychology and reflect this

integration in teaching and all other professional activities. These activities should be recognized as integral parts of their job responsibilities. Those supervising in extramural scientific and/or practice settings must have meaningful input into the areas of the program in which they participate.

2. *Setting.* A comprehensive, multipurpose, regionally accredited university represents the ideal location for these components of scientist–practitioner programs in psychology. Institutions that house programs have the following characteristics: full-time scientist–practitioner faculty; opportunities for scientific inquiry and practice either with or monitored by these faculty; climates of social and economic support for student education; and expanded opportunities for breadth of learning. Published descriptions of all scientist–practitioner programs should state whether they are designed so that graduates may meet current licensing and certification requirements.

3. *Procedures for Evaluation.* There will be regular monitoring of each student's progress to ensure the relevance and adequacy of the individual's curriculum and integration of the various training components. Attention will focus on the continuous development of the student's knowledge, skills, attitudes, and values. Monitoring will take place through formal, structured evaluation to be conveyed to the student in writing. Evaluation will begin with a student's selection and continue through practice, research experiences, the predoctoral internship, and the dissertation.

The scientist–practitioner doctoral training program and internship faculty should evaluate their effectiveness in implementing the scientist–practitioner model.