

A Cube Model for Competency Development: Implications for Psychology Educators and Regulators

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This article provides a conceptual framework for training in professional psychology focused on the construct of competency. The authors present a 3-dimensional competency model delineating the domains of knowledge, skills, attitudes, and values that serve as the foundation required of all psychologists, the domains of functional competencies that broadly define what psychologists do, and the stages of professional development from doctoral education to lifelong learning through continuing education. The goal in presenting this model is to provide a conceptual frame of reference for those responsible for psychology education, credentialing, and regulation.

Keywords: education, competencies, training

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Public accountability always has been a hallmark value orientation of the professions including psychology. In recent years, as society has placed increased emphasis on accountability for services rendered, there has been a corresponding increased attention given to the competency of those providing services. The American Psychological Association's (APA) *Ethical Principles and Code of Conduct* (APA, 2002) emphasizes the issue of competency in the education and practice of psychology. Additional support for the importance of competency is reflected in the *Guidelines and Principles for the Accreditation of Programs in Professional Psychology* (Committee on Accreditation, 1996, 2002), showing a major shift of focus from the assessment of curricula to the assessment of education outcomes of which competency of the graduates is an example.

In the context of this evolution of thought, it is also increasingly apparent that the practice of psychology has expanded in recent years to include services that are additional to, and at times different from, those offered by psychologists even a quarter of a century ago. Although this expansion of the scope of psychological practice may reflect in part changes in the public need and demand for services, it is also due in part to the expanded body of knowledge and skills on which the practice of psychology is based. One of the implications of this profession's development is that future psychologists may be more likely than their predecessors to specialize in their practice following a broad foundation of preparation for practice. The question among psychology educators is how and in what way is this to be accomplished (Association of Psychology Postdoctoral and Internship Centers, 2004). Those responsible for regulation of the profession through credentialing pose comparable questions related to the assessment of competency for independent practice (Jonason, DeMers, Vaughn, & Reaves, 2003).

These developments provide the context for the in-depth discussions resulting in the concepts described in this article. The goal of this article is primarily to provide those responsible for education and regulation in professional psychology a model as a conceptual frame of reference. It is our intent that the concepts advanced in this article will stimulate further discussion and research within and between those involved in education and regulation. Before addressing the model itself, however, some historical comments and definitions are in order.

Competency in Historical Context

Some of the earliest work in recent years to identify the domains of competency expected of graduates from professional education and training programs in psychology was done by the National Council for Schools and Programs of Professional Psychology (NCSPP; Bent, 1992; Bent & Peterson, 1998; Bourg, Bent, McHolland, & Stricker, 1989). The importance of the competency domains developed through these efforts was reinforced by the Joint Council on Professional Education in Psychology (Stigall et al., 1990) and by the Committee on Accreditation in its introduction of guidelines for the accreditation of programs in professional psychology during the mid-1990s (Committee on Accreditation, 1996). More recently, a thoughtful analysis of competency-based education and training in professional psychology was provided by Sumerall, Lopez, and Oehlert (2000), applying Fantuzzo's (1984) model of competency development to the core domains of competency identified by the NCSPP.

Although these previous works advanced the profession's understanding of general competencies needed as a psychologist, they did not provide a consensus framework regarding the relationship between the various competency domains. In addition, Sumerall et al. (2000) highlighted a number of the difficulties in the development and assessment of competencies needed to practice psychology. In order to explore these and other competency questions, including how and when various competencies are developed and how they are assessed, the Association of Psychology Postdoctoral and Internship Centers (2002), with support from the APA and 30 other cosponsoring groups and organizations of psychologists, was prompted to convene a conference entitled *Competencies Conference, 2002: Future Directions in Education and Credentialing in Professional Psychology*. More than 130 psychologists representing diverse professional perspectives of scientists, practitioners, educators, and regulators in psychology convened for 3 days to address issues pertaining to the identification, training, and assessment of competencies considered essential to professional psychologists engaged in health and human services. A summary of the conference is provided by Kaslow et al. (2004).

On the basis of a preconference survey incorporating concepts from the various models of competency described above, a broad array of educators, practitioners, and regulators, identified as experts, attained general consensus that the following domains of knowledge, skills, attitudes, and values are essential to the professional education of psychologists, especially those providing health and human services. They are, in no particular order, (a) scientific foundations of psychology and research methods; (b) ethical, legal, and public policy issues; (c) supervision; (d) psychological assessment; (e) intervention; (f) individual and cultural diversity; (g) consultation and interdisciplinary relationships; and (h) professional development issues.

These eight domains provided the framework for the Competencies Conference work groups that were tasked to examine the definition of each domain, how and in what developmental sequence these competencies are achieved in the course of professional education, and how these domains are to be assessed. An additional work group was assigned the task of conceptualizing how to assess overall competence across the specific competency domains, and a final group was asked to address how education and training for professional specialties might be conceptualized in relation to the development of competency, using the same developmental perspective that other work groups followed. This work group comprised experts in the area of general and specialty education and practice. It is this latter group's work that provides the basis of this discussion.

Competency and Specialization in the Context of Professional Psychology

Competency and Domains of Competency Defined

Competency is generally understood to mean that a professional is qualified, capable, and able to understand and do certain things in an appropriate and effective manner. Simply having knowledge or skill is insufficient for someone to be considered competent. Rather, there is the implication that competency requires action and in some public way verification of what is achieved by that action. Moreover, appropriate and effective action requires judg-

ment, critical thinking, and decision making. In a profession, competency also connotes that behaviors are carried out in a manner consistent with standards and guidelines of peer review, ethical principles, and values of the profession, especially those that protect and otherwise benefit the public.

Proctor (1991) and Reilly, Barclay, and Culbertson (1977) summarized the elements of competency to include what a person brings to a job or role (knowledge), what the person does in the job or role (performance), and what is achieved by the person in a job or role (outcomes). More recently, Epstein and Hundert (2002) described professional competency as the habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values, and reflection in daily practice for the benefit of the individual and community being served. Meier (1993) defined competency as the capacity to integrate effectively the knowledge base, component skills, personal-professional values and ethics, attitudes, and profession-specific (generic and specialized) factors into professional practice, defined by a configuration of problems addressed, populations served, procedures used, and service settings.

The *domains of competency* on the other hand are the domains of professional activity in which competency is developed. McIlvried and Bent (2003) defined these domains of competency as fundamental clusters of integrated knowledge, skills, and attitudes that are used in the professional practice of psychology. They advanced the notion that the competency domains core to a profession are those that are essential to the profession's practice and, that taken together, define in a sense the functional roles of the professional person. Drum and Blom (2001) suggested that to apply or practice psychology implied domains of competency: amalgamations of values, principles, attitudes, knowledge, skills, and abilities necessary to effectively deliver services.

In summary, competency means a professional is capable (i.e., has the knowledge, skills, and values) to practice the profession safely and effectively. Domains of competency may be understood as elements or components of competency. One might say that these domains reflect the professional activity in which competency is developed.

Specialty Defined

The concept of specialty identification and training emerges from a professional response to a public demand for identifying added competence in particular areas of professional practice. The APA (1995), the Council of Specialties in Professional Psychology (2003), and the American Board of Professional Psychology (ABPP; 2003) have all defined psychological specialty practice. These three organizations, responsible for the recognition and maintenance of specialties as well as the credentialing of specialists, while offering slightly different definitions, share a common orientation in defining a *specialty*. Their definitions emphasize a specialty as a specific area of practice characterized by a distinctive pattern of services related to problems and populations that requires an organized and advanced sequence of education, training, and experience that builds on the core scientific and professional foundations of psychology.

Of the three organizations, however, only ABPP uses the term *competency* in its definition. As the only credentialing organization of the three, ABPP emphasizes for the public an understanding that formal education and experience in a defined area of practice leads

to the competence certified by examination and award of the specialty credential.

In summary, the same domains of competency apply to all specialties of a profession, though the relative importance of each may differ among specialty practices (i.e., the distinctive pattern of populations served, problems addressed, procedures used, and setting characteristics) (APA, 1984). The Competencies Conference work group examined the concepts of competency, domains of competency, and specialty in the education and practice of psychology.

Competency in a Regulatory Context

Prior to discussing the work group product, we will describe one application of the construct of competency that will provide an example of the use of this concept in the regulation of psychology.

Developments in Canadian professional psychology during the early 1900s illustrate the degree to which competency has emerged as a defining characteristic both in public policy and within the profession. In 1995, the federal, provincial, and territorial governments of Canada established competency as the principal basis for admission to all regulated professions (Mutual Recognition Agreement [MRA], 2001). The explicit goal was the reduction of barriers to mobility within Canada where provincial-territorial-based regulatory structure was very similar to the state-based system in the United States. Regulated professions were then provided a relatively short period to establish a competency-based admissions system and related criteria.

The profession established an iterative process coordinated by its three main national bodies: the Canadian Psychological Association, the Canadian Register of Health Service Providers in Psychology, and the Council of Provincial Associations of Psychologists (composed of all provincial-territorial regulatory bodies of psychology as well as professional associations). The result was that the MRA was signed by all regulatory bodies in June 2001 with implementation in July 2003 (MRA, 2001).

The MRA (2001) established five areas of competency to be required of all persons seeking admission to practice as a psychologist across all Canadian jurisdictions: (a) interpersonal relations, (b) assessment and evaluation (subsuming diagnosis under assessment thus enabling jurisdictions for which diagnosis is a controlled act to explicitly exam for this competence), (c) intervention and consultation, (d) research, and (e) ethics and standards. The MRA also recognized that the supervision competency domain is required for initial admission to practice or through a request for licensure in the context of mobility in the provinces of Newfoundland and Quebec. In addition, Quebec also requires competency in administration (as related to the delivery of professional services). For each domain of competence, there is a defined set of knowledge and skills, which establish the common parameters of competency. These are complemented by educational and supervised practice requirements typically linked to each area of competence by jurisdiction-specific regulations.

All Canadian regulatory bodies have been establishing the means by which competence will be assessed at the entry to practice level. The common definitions of knowledge and skills for each domain of competence are the common starting point. For example, the minimum threshold for research is linked to knowledge and skill in the application of current methods of applied research (e.g., outcome, quality assurance measures) rather than

setting the standard as a capacity to make an original contribution to new knowledge. During the recent past, professional psychology in Canada has come a long way toward making competence the basic principle of education and training as well as public protection.

The United States' regulatory bodies do not yet have a common definition or format to assess competence for independent practice. However, there is general consistency in how each state has defined the academic requirement, a doctoral degree, needed as the initial step for licensure (Association of State and Provincial Psychology Boards [ASPPB], 2004). Unfortunately, the consistency among states ends with the academic degree. State regulations for supervised professional experience have significant variation from 1,500 hr and 1 year of experience to 6,000 hr and 3 years of experience (Bartle & Rodolfa, 1999). The ASPPB (2004) reported that there is consistency in that almost all states require the Examination for Professional Practice in Psychology, but some states require various additional examinations (e.g., jurisprudence, oral examinations). Domains of competency evaluated through these examination experiences are varied as there is limited agreement by each state as to the specific domains required to practice independently. However, there is general agreement that the Examination for Professional Practice in Psychology measures the broad array of basic or foundational competency domains that set the groundwork for the practice of psychology.

Although there is limited consistency across these independent states, during the past few years the ASPPB has developed a mechanism, the Certificate of Professional Qualifications, that has been accepted by a majority of states to facilitate mobility (Jonason et al., 2003). This effort and those by other associations including the ASPPB (Hall & Boucher, 2003) and the National Register of Health Service Providers in Psychology (Robinson &

Habben, 2003) are providing structures to enhance the mobility of psychologists.

The Cube Model for Thinking About Competency Development

The Competencies Conference work group on specialty education examined competency and specialty using the steering committee's initial framework and the committee members' thorough understanding of these topics. The work group participants defined the domains originally developed, incorporated additional domains not included by the steering committee, and emphasized the interrelationships of these domains.

Figure 1 presents the work group's model describing competency development in professional psychology. It frames the essential elements in the development of a professional psychologist, namely, the domains of functional competency and the intellectual and interpersonal foundations on which they are based. This model also depicts the developmental context in which the domains of competency are developed from the earliest stages of doctoral education through lifelong learning.

Foundational Competency

The foundational competency domains, the building blocks of what psychologists do, are conceptualized as follows: (a) reflective practice–self-assessment, (b) scientific knowledge–methods, (c) relationships, (d) ethical–legal standards–policy, (e) individual–cultural diversity, and (f) interdisciplinary systems. Knowledge and skills in these foundational domains provide the groundwork for psychologists to subsequently acquire functional competency. Foundational competency domains are primarily taught in gradu-

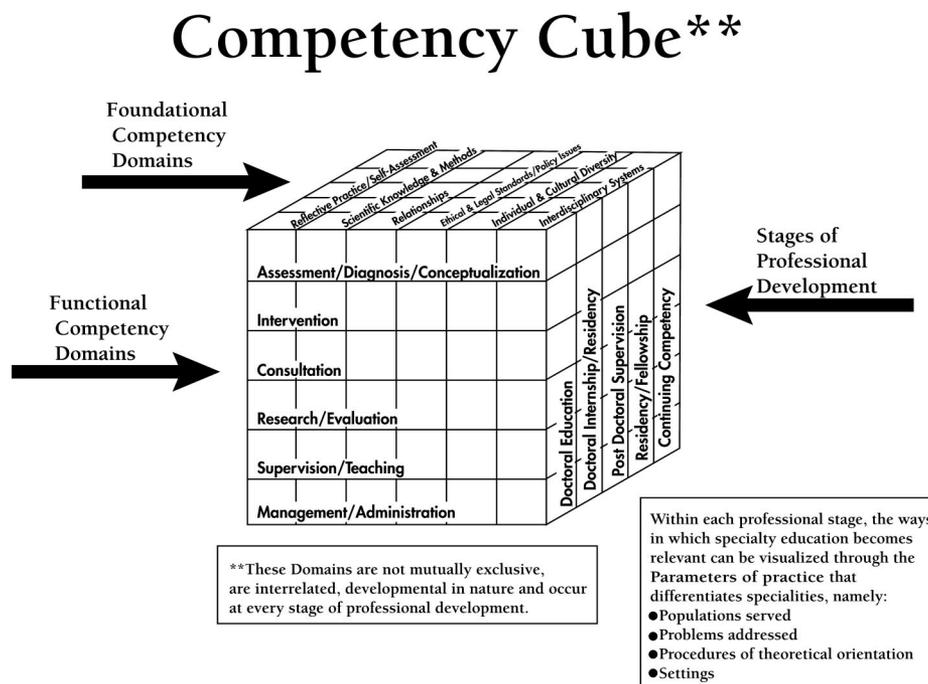


Figure 1. Cube model describing competency development in professional psychology.

ate school and other aspects of doctoral education (e.g., internship), although psychologists continue to enhance their knowledge base as changes in the field occur. The foundational competency domains are defined in Table 1.

Functional Competency

The domains of functional competency describe the knowledge, skills, and values necessary to perform the work of a psychologist. These areas of professional functioning include (a) assessment–diagnosis–case conceptualization, (b) intervention, (c) consultation, (d) research–evaluation, (e) supervision–teaching, and (f) management–administration. These activities encompass the breadth of the day-to-day services provided by psychologists. Throughout the career of each psychologist, the domains of functional competency continue to be enhanced. Each of these domains is defined in Table 1.

Relationship Between Functional and Foundational Competency Domains

It is assumed that the knowledge, skills, attitudes, and values of the functional competency and foundational competency domains are orthogonal. That is, each of the foundational domains has implications for each of the functional competency domains. In addition, as the scientific and professional basis of psychology advances, and changes in the external marketplace (i.e., funding sources for training or practice, legal–regulatory definitions of scope of practice) occur, these changes are likely to initially be reflected in changes in the foundational competency domains and then will likely be integrated in the functional competency domains resulting in the development of new procedures and skills.

Stages of Professional Development

The stages of professional development represented in this cube model provide a snapshot of basic framework (graduate education,

Table 1
Definitions of Functional Competency and Foundational Competency Domains

Domain	Definition
Functional competency	
Assessment–diagnosis–case conceptualization	Assessment and diagnosis of problems and issues associated with individuals, groups, and/or organizations.
Intervention	Interventions designed to alleviate suffering and to promote health and well-being of individuals, groups, and/or organizations. Understanding of empirically supported treatments.
Consultation	The ability to provide expert guidance or professional assistance in response to a client's needs or goals.
Research–evaluation	The generation of research that contributes to the professional knowledge base and/or evaluates the effectiveness of various professional activities.
Supervision–teaching	Supervision and training of the professional knowledge base and/or evaluates the effectiveness of various professional activities.
Management–administration	Managing the practice of mental health services and/or the administration of health organizations, programs, and agencies.
Foundational competency	
Reflective practice–self-assessment	Practice conducted within the boundaries of competencies, commitment to lifelong learning, engagement with scholarship, critical thinking, and a commitment to the development of the profession.
Scientific knowledge–methods	The ability to understand research, research methodology and a respect for scientifically derived knowledge, techniques of data collection and analysis, biological bases of behavior, cognitive-affective bases of behavior, and lifespan human development.
Relationships	Capacity to relate effectively and meaningfully with individuals, groups, and/or communities.
Ethical–legal standards–policy	Application of ethical concepts and awareness of legal issues regarding professional activities with individuals, groups, and organizations. Advocating for the profession.
Individual–cultural diversity	Awareness and sensitivity in working professionally with diverse individuals, groups, and communities who represent various cultural and personal background and characteristics.
Interdisciplinary systems	Identification and involvement with one's colleagues and peers. Knowledge of key issues and concepts in related disciplines and the ability to interact with professionals in them.

Note. Definitions are based on the Council of Credentialing Organizations in Professional Psychology (CCOPP, 2004) document titled *A Conceptual Framework for Specialization in the Health Service Domain of Professional Psychology*. CCOPP used the 2002 Competencies Conference specialties and proficiencies work group cube model in their document and expanded the definitions initially developed by the work group.

internship, postdoctoral training or residency, and continuing competency) for psychologists to gain, maintain, and enhance competency throughout their professional careers. Although only the basic stages of professional development are depicted in Figure 1, a more detailed depiction of each of these stages could be articulated, for instance, multiple stages of development in attaining the doctoral degree alone. For example, there is a sequence to academic education that includes coursework, early and advanced practicum experiences, dissertation research, and the initiation of specialty education.

The Cube Model and Specialty Education

The cube model assumes that how and when in the professional development of psychologists specialty–distinctive knowledge, skills, and attitudes are introduced and further developed in the functional competency domains vary by specialty. Thus, the introduction of specialty–distinctive knowledge in neuropsychology will differ from the introduction of specialty–distinctive knowledge in forensic psychology.

All specialties share the same foundational competency domains that are central to psychology as a profession. All specialties also share the same functional competency domains (i.e., methods of assessment, intervention strategies, consultation activities, professional activities based on science, training activities, and management of service activities). These functional competency domains are built on the general foundational competency domains of all professional psychologists (self-awareness, science, developing relationships, ethical and legal standards, understanding of diversity, and the ability to work with other professions). Thus, it is not the functional domains themselves or their foundations that differentiate one specialty from another.

What differentiates specialties is the way in which the foundational and functional competency domains are shaped by particular configurations of the parameters of practice, notably populations served, problems addressed, procedures or theoretical orientations used, and settings–systems–contexts within which the practice occurs. For instance, each specialty has in common the basic foundations of assessment (i.e., test construction, norms, sampling procedures), but a particular specialty's assessment tools differ on the basis of the problems examined and the populations treated within a particular type of setting.

An Example of a Competency Framework: Education Leading to Practice

A competency framework is useful to train students seeking to practice psychology. For example, in the assessment domain, a clinical psychology doctoral student will typically begin training by acquiring foundational scientific knowledge in psychometrics, test standards, and a functional understanding of psychopathology. Later the student may develop core interviewing skills that will be integrated into diagnostic interviewing. The combination of this knowledge and these skills would be integrated with test administration skills and the student would begin to develop the conceptual competencies to bring these varied skills and knowledge bases together. At the same time as this student learns to use an instrument such as an intelligence test, other foundational competencies would come into play as the student experiences the importance of the client relationship, understands the application of ethical and

legal standards, appreciates the importance of assessment across individual differences and cultural diversity, and works within interdisciplinary teams. The student's reflective self-assessment should track these progressive skill acquisitions. As the student further progresses, these initial foundational competency domains are integrated into other functional competency domains. In the assessment area, the student gains skills in administration, scoring, and interpretation of a number of assessment techniques that are further extended to work with different populations, problems, and settings during practicum experiences. The internship consolidates these skills into a coherent model of professional functioning, and the postdoctoral year transitions the student into independent professional practice.

Specialties build on the basic foundational and functional competencies to culminate in postdoctoral specialization. A student following a clinical neuropsychology career path might obtain the same foundational and functional competency domains in the same order but would add further in-depth knowledge in brain behavior relationships. Specialty competencies would be developed as the student learns to integrate competency in intellectual testing with other tests of cognitive function. Internship and postdoctoral experience would emphasize settings with neurologically impaired populations.

Implications

The cube model of competency development has implications for educators, practitioners, and regulators.

For Educators

First, the competency domains required of a professional psychologist may be depicted at three broad levels: (a) domains expected of all professional psychologists, (b) domains of professional psychologists in specialties of a particular area of practice (e.g., health services), and (c) domains distinctive to particular specialties (e.g., forensics). The acquisition of these three levels of competency through education, training, and experience occurs developmentally, from broad and general to specific and specialized.

Second, the parameters of practice (the relevant settings, procedures, populations, and problems) are the critical indicators for the development of specialty competencies. Professional education provides the sequence of training leading to competence in both general and specialty practice.

Third, in as much as specialties are distinctive but not mutually exclusive from one another, some specialty competency domains will be shared, especially when the specialties are of a related domain of professional practice (e.g., clinical and counseling psychology), whereas other competency domains may be more distinctively identified with particular specialties (e.g., forensic and health psychology).

If these are reasonable implications, questions for those responsible for professional education include the following: Is there a hierarchical, linear structure to the competency domains such that learning some is a prerequisite for learning others? Psychology education and psychology students will benefit if those involved in professional education will examine and ultimately improve the sequence of training to acquire professional competence and competence in specialty practice. For instance, it will be useful for

educators to assess the consistency in education and training leading to broad and general training at the early stages of professional education (e.g., In the domain of assessment, are clinical interviewing skills taught differently on the basis of the theoretical orientation of faculty?).

It will clearly benefit educators, students, practitioners, and regulators if this cube model and all models of competency development were examined and grounded in research. Questions to be explored include the following: How are competencies developed? What factors influence the development of competencies? Should competency domains be taught in a similar manner regardless of theoretical orientations, majors, and other aspects of doctoral education? How is competency maintained throughout a psychologist's career? For instance, how do the standard 1-day continuing education courses contribute to professional competency? How is supervision related to competency development? Are different supervisory skills needed to facilitate competency in the functional and foundational domains?

Related to the answers to the questions above, it will be useful to explore whether specialties differ in the structural patterns of learning outcomes and, if so, how? If specialty competencies are dependent on the parameters of practice, what differentiates the development of competency domains and specialty competencies in terms of these parameters?

The answers to these questions have implications for the timing of specialty education (e.g., Should internships offer general or specialty training experiences or both?). Currently internship training is offered in approximately 15 different types of settings (Association of Psychology Postdoctoral and Internship Centers, 2004), many that differ significantly in terms of parameters of practice and populations served. Although the common view of internship training is generalist in nature (Committee on Accreditation, 1996), it would be useful for the profession to understand whether interns at these various sites actually receive specialty or generalist training and determine how the sequence of training can be improved using a competency-based model.

It would also be useful if educators provided doctoral students in professional psychology a broad orientation to different specialties prior to specializing their education and training. In addition, information on careers in psychology, prepared for students contemplating graduate work in psychology, should address the competency domains expected of all psychologists as well as information about the specialties of professional practice.

For Regulators and Credentialing Bodies

It may be beneficial if United States' regulators (state boards of psychology and the ASPPB) and credentialing bodies (National Register of Health Service Providers) came to a consensus about the domains of competency for independent practicing psychologists. These groups can use this cube model, in conjunction with other competency models, as a basis for determining competency domains required for practice. In addition, regulators and those involved in other types of credentialing can develop effective measures to evaluate the competency of candidates seeking a psychology license or credential. This cube model can also provide a framework for regulators who wish to develop a mechanism to license specialty practice. Currently, specialty practice is only credentialed by the boards of professional practice (e.g., ABPP) rather than regulated by state boards of psychology.

For Practitioners

Although this model has numerous implications for educators and regulators, practitioners may find it useful to assess their own domains of competency. Practitioners can use the cube model to help them decide domains of practice that may be beneficial to seek further training to enhance their ability to provide safe, effective service to the public.

For the Profession

The cube model of competency development may be useful to assist the profession in understanding the sequence of training resulting in competent general and specialty practice in professional psychology. In particular, as specialty practice in psychology grows, the profession's development of specialties must occur within the context of three systems: one for recognizing the specialty, one for identifying those programs that demonstrate adequate training in the specialty, and one for certifying the competence of graduates of specialty preparation through credentialing. As psychology improves its understanding of competency and its systems of review of preparation and practice of competent psychologists, the profession will become increasingly responsive to the demands for accountability from the public, regulators, and third party payers, which will result in enhanced services provided to the public.

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