THE DEVELOPMENT OF THE PROFESSIONAL COMPETENCIES SCALE: AN ASSESSMENT OF FOUNDATIONAL, FUNCTIONAL, AND CONTINUING COMPETENCIES FOR PSYCHOLOGISTS

By

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To my parents, who always believed in me and encouraged me to follow my dreams and find my purpose in life. Thank you for your help to make this milestone possible.
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Professional competence is of paramount importance to the field of professional psychology. However, little research in the field has examined what it means to be a competent psychologist, even though there have been repeated calls for more research in this area. Although increased attention has focused on developing various definitions and conceptualizations of professional competence, the absence of adequate assessment measures have continued to hamper the field’s move towards a “culture of competence”, which is reliant on the availability of reliable and valid methods of measurement. The present study aimed to fill in this gap by investigating the various domains of professional competence and developing a measure that follows the contours of one of the leading conceptualizations of competence in the field of professional psychology today.

This study explored the development of the Professional Competencies Scale (PCS) and assessed the reliability and validity of the measure. Results of the second-order confirmatory factor analysis suggested that foundational, functional, and continuing competencies are not composed of a higher order factor. An exploratory
factor analysis was later used as a guide for a first-order CFA, which created a revised, shortened version of the PCS with excellent fit and three factors retained: foundational, functional, and continuing competencies.

Results from this study also suggest that the Professional Competencies Scale and its revised, shortened version are both reliable and valid as self-assessment instruments. With an accurate measure of competencies, research may be devoted to examining more effective ways to increase professional competencies and explore the relationship between these competencies and the nature of outcomes associated with them.

In addition, the professional competencies measure may help therapists assess areas of improvement for professional development. The instruments also have the potential to assist graduate training programs in monitoring the development of their students’ competencies across the course of their training. Used in these contexts, the measures may be helpful in charting competencies throughout graduate school and in targeting and remediating any identified areas of deficiency.
CHAPTER 1
INTRODUCTION

In this chapter literature surrounding professional competence and specific domains of foundational, functional, and continuing professional competencies will be explored. Next, the history of professional competence in the literature will be examined, followed by a look at some important foundational, functional, and continuing competencies and the relationships among them. The chapter concludes by discussing the assessment of professional competencies, which is the primary focus of the current dissertation.

**Professional Competencies in Psychology**

While most fields in the health professions offer, and may even require, ongoing standardized assessments of professional competence after licensure, the field of psychology does not. Indeed, there are no required external evaluations after psychologists have completed their licensure exams (Leigh et al., 2007; Summerall, Lopez & Oehlert, 2000). There may be many reasons for this, including the challenge of assessing competencies among psychologists with differing theoretical orientations, differing ways of understanding and contextualizing client problems, and differing methods of implementing interventions.

However, whether encouraged, monitored, or expected by consumers, regulators, or legislation, continuing competence for health professionals is essential for practice (Hoge et al., 2005; Kaslow et al., 2009). Continuing competence is widely regarded as a precondition to effective service delivery and favorable outcomes. Beutler, Crago, and Arizendi (1986), for example, found a connection between therapists with high perceived degrees of competence and favorable clinical outcomes.
In light of research on the importance of ongoing professional competence, the field of psychology is progressing towards a “culture of competence” both in relation to defining and measuring competencies (Belar, 2009; Kaslow et al., 2004; Kaslow et al., 2009; Roberts et al., 2005).

**Definitions of Professional Competence**

Many definitions for professional competence have been proposed and discussed in the literature. Some of the most common aspects of professional competence include critical thinking skills, interpersonal relationship skills, knowledge of self, self-assessment skills, and self-care, as well as field-based knowledge and skill development, and a range of personality traits and attitudes (Elman, Illfelder-Kaye & Robiner, 2005; Hatcher & Lassiter, 2007; Wise, 2008). Borrowing from the medical profession, Epstein and Hundert (2002) define competence 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” (p. 226).

This definition of competency entails an ongoing, active process, involving lifelong learning and continuing professional development. In fact, the Latin term “competere” means to seek or strive together (The Free Dictionary, 2011), which implies the active and ongoing nature of professional competence (see Wise, 2008; Wise, 2010).

Competence, according to Epstein and Hundert (2002), involves cognitive, integrative, relational, and affective or moral functions and depends on “habits of mind” (p. 227). The habits of mind proposed to be crucial include attentiveness, self-understanding, inquisitiveness, critical thinking, and openness to feedback and growth.
Thus, in addition to knowledge, skills, and attitudes, competence includes the ability to appropriately apply such knowledge to professional settings.

In addition, competence evolves over time and requires remediation along the way. It is both developmental, in the sense that competence grows in complexity over time, and it is context-dependent, in the sense that various competencies, and the salience of each, differ based on the environment and the setting (Epstein & Hundert, 2002).

Professional competence also entails ethical competence, which underscores that competence is clearly of paramount importance to the practice of psychotherapy. In the Ethical Principles of Psychologists and Code of Conduct, the American Psychological Association (2010) notes that practicing within the realm of competence and developing and maintaining competencies are crucial to ethical practice (see Standards 2.01 and 2.03). Standard 2.01, for example, notes that while psychologists must practice only within their thresholds of competence, if psychologists are not competent in a certain area or skill set, they should make referrals to appropriate psychologists, if possible, or they should remediate, enhance, and build upon their competences through pertinent education, training, supervision, and/or consultations.

Principle A: Beneficence and Nonmaleficence speaks even more directly to the ethical imperative of professional competence. Psychologists are called to help clients and must take care not to do any harm. Ensuring that psychologists do no harm to others means that they must be competent in their work with clients, through proper skills, understanding, and abilities.
History of the Study of Professional Competence

To better understand the current conceptualization of professional competencies, and the ethical necessity of examining them, requires an historical understanding of the development of the competency movement within the field. Even though the discussion of professional competencies can be traced back to the 1970s and earlier (Blau, 1973; Dubin, 1972; Jones, 1975; Lewinsohn & Pearlman, 1972; McNamara, 1975; Ross, 1974; Ullmann, 1947; Webster, 1971), a watershed event occurred in the field in 1986. The National Council of Schools and Programs of Professional Psychology (NCSPP; 2008) identified six professional core competency areas, which include relationship, assessment, intervention, research and evaluation, consultation, and management or supervision competencies. NCSPP notes that each competency includes knowledge, skills, and attitudes required for professional practice, and each competency is an important, integral component of basic professional competence. This model for defining competencies was used as a model for the American Psychological Association’s Committee on Accreditation (1996) when they modified their Guidelines and Principles for Accreditation. The new revisions require graduate programs to identify the competencies expected of students through the student’s education and training experiences.

Later, during the 2002 Competencies Conference: Future Directions in Education and Credentialing, over 130 psychologists with diverse perspectives and occupations in the field expanded on the 1986 NCSPP core foundational and functional professional competencies. The competencies conference led to the development of a model for competencies that should be attained by the practicum, internship, and licensure phases (Kaslow et al., 2004; Rodolfa et al., 2005).
This led to the creation of the “Cube Model”, which outlines core competencies in the field of psychology and is acknowledged in many diverse training programs in psychology (see Rodolfa et al., 2005). The Cube Model for professional competencies is composed of 12 foundational and functional competencies within a developmental framework that emphasizes ongoing professional growth (see Figure 1-1). Foundational competencies are composed of knowledge, attitudes, skills, and values (i.e., competencies that serve as the basis, or foundation, for professional functioning) on the x-axis. One example of a foundational competency (scientific knowledge-methods) includes the behavioral benchmarks of “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” (Rodolfa et al., 2005, p. 351). Functional competencies are composed of capabilities to execute the roles or functions of a psychologist and are displayed on the y-axis. Thus, functional competencies build on the knowledge, skills, and attitudes of foundational competencies. One example of a functional competency, intervention, includes the following behavioral benchmark: “[An understanding of] interventions designed to alleviate suffering and to promote health and well-being of individuals, groups, and/or organizations. [And an] Understanding of empirically supported treatments” (Rodolfa et al., 2005, p. 351).

While foundational competencies are displayed on the x-axis and functional competencies are displayed on the y-axis, the developmental stage for competencies is displayed on the z-axis. This axis denotes the developmental phase of a psychologist (e.g., practicum, internship, licensure). It is important to note that each of these axes
intersect with each other. Thus, while graduate students or interns are gaining foundational competencies, they are also gaining functional competencies.

Many works rose out of the Cube model for competencies, including the Tempe Summit. In an effort to define and clarify professional competencies at each stage of clinical practice, the APA Board of Education Affairs and the Council of Chairs of Training Councils met at the Tempe Summit in 2007 and created a series of competency benchmarks, or behaviors necessary for each domain of competence (Rodolfa et al., 2005).

Another work that followed the Cube Model was the Council of Chairs of Training Councils’ (CCTC) Practicum Competencies Outline, which was designed to operationalize competencies for practicum students and provide behavioral anchors (which expand more specifically on behaviors associated with each competency). The Practicum Competencies Outline was created to gauge the development of necessary competencies at this developmental stage (CCTC, 2007).

In addition, the APA Board of Educational Affairs expanded on the Cube model by creating a report that noted the need for competency assessments, the challenges to measuring competencies, and paradigms of ways to gauge competencies (APA, 2006). There has been a call for greater competency assessments for readiness to practice (see APA, 2006; DeMers, 2009; Fouad et al., 2009; Kenkel, 2009; Schulte & Daly, 2009), as readiness to practice is currently based on unstructured self-assessment, assessment from supervisors, and successful completion of the licensure exam. However, few models exist to both aid and structure self- and other-assessment.
One step closer to structuring competency assessment, however, has been the Assessment of Competency Benchmarks Work Group (also known as “the Workgroup”) enacted after the Council of Chairs of Training Councils’ proposal to the APA Board of Educational Affairs. It was designed to pinpoint core competencies at different professional developmental stages (Fouad et al., 2009). Using the Cube model as a basis, the Workgroup operationalized each of the 12 competencies from Rodolfa and colleagues (2005) and added three more competencies (professionalism, teaching, and advocacy). The Workgroup defined benchmarks, or behavioral indicators, for each competency, included the essential components for each competency domain (i.e., the knowledge, skills, and attitudes that comprise specific domains of competence) and identified their behavioral anchors.

Benchmarks for each competency are separated into foundational or functional competencies and are defined for three developmental phases: readiness for practicum, internship, and practice (Fouad et al., 2009). It is noteworthy that the developmental phases extended only to the point of readiness for independent practice, and not beyond that point throughout the continuing career, which may extend to an additional 40 years of practice. Fouad and colleagues (2009) identified foundational competencies as professionalism, reflective practice, scientific knowledge and methods, relationships, individual and cultural diversity, ethical and legal standards and policy, and interdisciplinary systems. Functional competencies were stipulated in relation to assessment, intervention, consultation, research and evaluation, supervision, teaching, management and administration, and advocacy. Each competency is described briefly below.
Core Foundational Competencies

PROFESSIONALISM COMPETENCE. Professionalism is the first benchmark described by Fouad and colleagues (2009). It involves honesty and integrity, appropriate deportment, reliability and accountability for one’s actions, care for the wellbeing of others, and understanding and solidifying one’s professional identity.


SCIENTIFIC KNOWLEDGE AND METHODS COMPETENCE. Competence in scientific knowledge and methods involves scientific mindedness and ability to engage in critical thinking, knowledge and understanding of psychology as a science, and utilization of science and research for clinical practice.

RELATIONSHIP COMPETENCE. Relationship competence implies competence in interpersonal relationships, affective skills, affective skills, and communication skills, and competence in providing of effective feedback to others and receiving feedback constructively.

INDIVIDUAL AND CULTURAL DIVERSITY COMPETENCE. Competence in individual and cultural diversity includes understanding oneself, others, and interactions between oneself and others as influenced by individual and cultural diversity. Competence in this domain also includes the ability to apply an understanding of individual and cultural diversity to the professional setting. Aside from recognizing individual and cultural differences and being cognizant of this in professional work, this competence requires an awareness of one’s own biases, attitudes, and assumptions (Daniel, Roysircar, Abeles & Boyd, 2004).
Ethical and legal standards and policy competence involves an understanding of legal, ethical, and professional standards and guidelines, knowledge and application of sound decision making, and clear ethical conduct. This competency has garnered a lot of attention from the field of professional psychology, as training and education in professional ethics is a vital part of professional training, both before and after licensure (see also Neimeyer, Taylor & Wear, 2011). Indeed, psychologists have deemed ethics as one of the most important aspects of professional practice, second only to direct client interventions (Association of State and Provincial Psychology Boards, 1996). In addition, formal continuing education courses in ethics have been shown to be related to positive professional outcomes (Neimeyer, Taylor & Wear, 2009).

Interdisciplinary Systems Competence. Lastly, competence in interdisciplinary systems can be described as understanding of the shared and unique influences of other professions, ability to interact well in interdisciplinary and multidisciplinary settings, an appreciation for interdisciplinary consultations and collaborations, and considerate, constructive, and positive relationships with members of other professions.

Core Functional Competencies

Assessment Competence. Competence in assessment is defined as knowledge of how to choose appropriate measurements and psychometrics, awareness of the strengths and weaknesses of assessment measures and statistical analyses, selection of appropriate assessments to answer questions posed, ability to appropriately diagnose individuals, understanding of how developmental stages and diversity can impact the appropriate diagnosis, sound conceptualization of cases, and clear communication of findings from assessments and interactions with clients or patients.
INTERVENTION COMPETENCE. Intervention competence entails the appropriate use of interventions for the welfare of organizations, individuals, and groups, an awareness of useful interventions. Specifically, this competency involves an ability to plan appropriate interventions, the helping and/or clinical skills necessary to intervene, the appropriate execution of interventions, and an ability to evaluate the progress of an intervention and modify it as necessary.

CONSULTATION COMPETENCE. Competence in consultation is not a skill recognized at the readiness for practicum level, but in other developmental phases, this component of competence involves the skill of giving expert clinical guidance and support. Consultation competence means understanding the role of a consultant as a role different from the role of the therapist, supervisor, researcher, or teacher, appropriately addressing the question for referral, communicating the findings of assessments in an articulate and clear manner, and applying the appropriate consultation methods (assessments or interventions).

RESEARCH AND EVALUATION COMPETENCE. Research and evaluation competence involves the understanding, appreciation, and appropriate application of the scientific method for knowledge generation.

SUPERVISION COMPETENCE. Competence in supervision includes an understanding of the expectations and roles of a supervisor and supervisee and the complexity of this relationship, an awareness of the processes and procedures for supervision, development of skills (receptivity to feedback, understanding of supervision literature, and, in later development, self-reflection and self-awareness regarding the relationship between a supervisor and a supervisee, and a supervisee and a client), an
understanding of aspects of the supervisory and supervisee-client relationships and supervisory dynamics that could affect the overall quality of the supervisory and clinical relationships, actual participation in supervision, and an understanding of ethical and legal issues relevant to the profession and clinical work.

**Teaching Competence.** Teaching competence may be defined as the ability to provide instruction, understand and apply theories of learning and teaching methods, provide knowledge to others, and evaluate the effectiveness of teaching methods.

**Management and Administration Competence.** Competence in management and administration involves an understanding of the functions of management in organizations and, in later developmental stages, managing the direct delivery of clinical services, an understanding of the functions of policies and procedures, leadership regarding understanding one’s role in policy-making, team-building, and motivational skills, and finally, an ability to assess both management and leadership.

**Advocacy Competence.** Lastly, advocacy competence includes behaviors aimed to influence cultural, societal, economic, and political issues with the intention of creating change at the individual, institutional and/or systems level.

It is important to note that some foundational and functional competencies are interconnected (Kaslow, 2004). As one example, competence in ethics requires more than understanding state laws and regulations, because it also may include the skill of consultation, reflective practice (self-assessment of ethical conduct and therapist self-care), and professionalism, among many others (see Wise, 2008 and Taylor and colleagues, 2012c for more information on how self-care relates to ethical conduct and overall competencies). Thus, although there is some level of distinction between the 15
competencies proposed by the Workgroup, there is also considerable overlap that must be understood, as each competency contributes to the general measure of professional competence.

**Key Components of Professional Competencies**

While each of the 15 foundational and functional competencies has received descriptive attention, the literature has discussed a more limited range of processes and qualities that may contribute to the development of these competencies. This section will address selected aspects of these processes and introduce a third competency, Continuing Competency, as an extension of foundational and functional competencies throughout the process of lifelong professional development. By focusing attention on a delimited range of variables that highlight key aspects of professional competence, we hope to set the stage for the specific variables that we are going to include as indicators of convergent validity in our instrument, the Professional Competencies Scale. And by extending this discussion to include Continuing Competence, we hope to build into the scale attention to lifelong learning as competency that builds upon foundational and functional competencies throughout the professional lifespan.

**Foundational competencies**

Foundational competencies are generally composed of both intrapersonal and interpersonal competencies. Intrapersonal competencies include the psychologists’ mental health, along with their engagement in self-care. Interpersonal competencies include the psychologists’ awareness, understanding, and appreciation of diversity issues. These three components will be explored below, as each exemplifies important aspects of foundational competence.
**Mental health.** Wise (2008) argues that professional competence involves both intra- and inter-personal mechanisms, along with technical skills, which are acquired and assessed through professional training, education, supervision, and licensure exams. These components of competence encompass the foundational aspects of professional competence. One example of an intrapersonal component of professional competence is a psychologist’s wellbeing.

Psychologists face many stressors, which can include relationship difficulties, depression, fatigue and emotional exhaustion, anxiety, and substance abuse (Brodie & Robinson, 1991; Deutsch, 1985; Elliott & Guy, 1993; Mahoney, 1997; Rupert, Stevanovic & Hunley, 2009; Thoreson, Miller & Krauskopf, 1989). Mahoney (1997), for example, found that one out of eight mental health professionals reported concerns about their alcohol consumption. Additional stressors from early traumatic experiences may also affect a therapist’s professional functioning. Research has shown that many psychologists have endured childhood trauma and abuse (Elliott & Guy, 1993; Pope & Feldman-Summers, 1992; Pope & Tabachnick, 1994; Radeke & Mahoney, 2000). Researchers have also found that greater conflict between work and family is significantly related to greater emotional exhaustion, negative attitudes towards clients, and lower feelings of accomplishment (Rupert et al., 2009).

In addition to their own personal stressors, therapists often face what has been termed “compassion fatigue” (Figley, 1995; Showalter, 2010; Sprang, 2010). Compassion fatigue occurs as a result of the “caring cycle”, a cycle of empathy, attachment with clients, and subsequent termination of the therapeutic relationship
(Skovholt, Grier & Hanson, 2001). Compassion fatigue can result in stress and work burnout, which could affect the therapist’s professional functioning.

These stressors can have a very negative effect on therapeutic effectiveness. One study found that therapists who had the lowest degrees of emotional disturbance were those who were most successful with their clients, a finding that suggests that sound mental health may play an important role in client outcomes (Beutler et al., 1986). Furthermore, in a study of nearly 750 psychologists, approximately 75% reported feelings of “personal distress” over the past three years (Guy, Poelstra, & Stark, 1989). Among those psychologists, 36.7% stated that their personal distress reduced the patient care quality and 4.6% acknowledged that their distress resulted in inadequate treatment for patients. These statistics are chilling, and suggest that stressors in a psychologist’s personal life and mental health can affect the psychologist’s professional life, and client or patient outcomes, as well.

APA’s (2010) Standard 2.06 recognizes the impact that therapists’ personal lives can have on their professional work and reminds psychologists of the importance of attending to personal problems and ensuring that such problems do not impact clients. Standard 2.06 recommends

Psychologists refrain from initiating an activity when they know or should know that there is a substantial likelihood that their personal problems will prevent them from performing their work-related activities in a competent manner. (b) When psychologists become aware of personal problems that may interfere with their performing work-related duties adequately, they take appropriate measures, such as obtaining professional consultation or assistance, and determine whether they should limit, suspend, or terminate their work-related duties. (para. 11-12)

Self-care. One way for psychologists to support their wellbeing is through self-care, another important aspect of foundational professional competence (Wise, 2008).
For the purpose of this study, self-care is defined as “the degree to which an individual maintains his or her health through proper diet, exercise, personal hygiene, or various other health-promoting activities...[including] pleasure reading, hobbies, vacations, and recreations...personal therapy or meditation” (Brucato & Neimeyer, 2009, p. 271). “Self-care” should be distinguished from “coping”, because self-care is designed to prevent stress, whereas coping is designed to repair oneself from the negative effects of stress (Brucato & Neimeyer, 2009). Thus, self-care helps professionals both maintain and enhance their competence.

Skovholt and Starkey (2010) note the importance of self-care through their conceptualization of three central components to professional competence, which they term the “three legs of the practitioner's learning stool” (p. 125). These “legs” of learning stool are personal maturity, scholarly work, and continuous clinical experience. The researchers note that the therapists’ personal experiences, such as their experiences with grief and loss, impact their abilities to emphasize with pain. As Skovholt and Starkey (2010) note, “In order to be most effective with clients, therapists need to realize and accept their own humanness” (p. 129).

One aspect of a therapist recognizing his or her own “humanness” means recognizing his or her own needs for self-care. Self-care protects the client from inadequate professional competence due to stress. Wise and Gibson (2012) note that self-care can aid in maximizing professional competencies and is a requirement for ethical practice. Self-care also provides positive modeling for the client in relation to healthy living. Self-care also reduces stress and professional burnout through the use of healthy stress management techniques, rather than destructive stress management.
methods, such as alcohol and drugs (Brucato & Neimeyer, 2009; Muldary, 1983; Porter, 1995; Wityk, 2002).

Many constructive activities fall under the category of self-care. In his study of 155 mental health professionals, Mahoney (1997) found that the most common forms of self-care were reading for pleasure and hobbies, physical exercise, and vacations, and attendance of movies, artistic events, or museums (all of the above were reported by three out of four participants in the study), as well as engagement in peer supervision, prayer or meditation, and volunteering.

**Diversity.** In addition to intrapersonal variables (e.g., mental health and self-care), interpersonal variables affect foundational professional competence (see Wise, 2008). A recent study of 83 gay and bisexual male clients and male counselor dyads found that the counselors’ orientation to diversity (as assessed through the Miville-Guzman Universality-Diversity Scale) was positively and uniquely related to client evaluations of the session depth and smoothness and the therapeutic working alliance (Stracuzzi, Mohr, & Fuertes, 2011). This finding underscores the importance of intrapersonal factors in the enhancement and proficiency of professional competence.

An appreciation for diversity and universality is crucial to ethical practice. The APA’s (2010) Ethical Standard 2.01b notes that:

> Where scientific or professional knowledge in the discipline of psychology establishes that an understanding of factors associated with age, gender, gender identity, race, ethnicity, culture, national origin, religion, sexual orientation, disability, language, or socioeconomic status is essential for effective implementation of their services or research, psychologists have or obtain the training, experience, consultation, or supervision necessary to ensure the competence of their services, or they may appropriate referrals. (para. 2)
This standard urges therapists to be aware of multicultural differences and how such differences could impact their professional competence.

**Functional competence**

While intrapersonal and interpersonal foundational competencies are essential to professional competence, the functional competence of self-efficacy is also an important component of a therapist’s clinical effectiveness. Counselor self-efficacy is a key component of functional competence, because self-efficacy is the confidence a psychologist has in his or her abilities to perform the duties and activities of the professional role (e.g., accurate assessments, effective interventions, constructive consultations). Because self-efficacy is an important aspect of functional competence, it is explored in more detail below.

**Self-efficacy.** Bandura (1977, 1982, 1986, 1989, 1997) hypothesized that although a successful experience require appropriate knowledge and skills, self-efficacy is also required. Self-efficacy can be defined as the belief that an individual has the ability to excel and possesses the requirements to do so (i.e., efficacy expectations) and that the individual be successful when attempting to accomplish the task at hand (i.e., outcome expectations). Thus, counseling self-efficacy can be defined as “one’s beliefs or judgments about his or her capabilities to effectively counsel a client in the near future” (Larson & Daniels, 1998, p. 180).

Positive counseling self-efficacy has been shown to translate into therapeutic effectiveness. Research suggests that greater degrees of counselor self-efficacy are related to greater perseverance during difficult clinical work, greater openness to feedback, and lower levels of anxiety, all of which are therapist characteristics that may lead to greater overall professional competence (Larson & Daniels, 1998).
Furthermore, in their comprehensive review of psychotherapy outcome studies, Orlinsky and Howard (1986) found that clinical effectiveness was positively related to the therapist’s professional confidence in two thirds of the studies they reviewed, while therapist “unsureness” was never positively related to clinical effectiveness. Although it is certainly plausible that counselor self-efficacy impacts client outcomes, some questions still exist, however, in relation to the strength of the effect of counselor self-efficacy on client outcomes. Orlinsky and Howard counted the positive and negative relationships, but did not include effect sizes for the findings in their review.

Other researchers, however, question the relationship between self-efficacy and client outcomes. Heppner, Multon, Gysbers, Ellis and Zook (1998) found very limited support for the theory that career counselor self-efficacy is related to better client outcomes. Their research suggests that the relationship between counselor self-efficacy and client outcomes is complex, mixed, and weak. Johnson (1985) found that the relationship between self-efficacy and therapeutic outcomes was mixed and ranged from $r = .84$ to $r = -.39$ (as cited in Heppner et al., 1998).

However, many studies on self-efficacy and client outcomes (e.g., Heppner et al., 1998) did not examine the relationship between the two variables beyond the practicum phase of development. Some research suggests that differences exist between doctoral students in varying stages of their clinical experience (Heppner et al., 1998; Sipps, Sugden & Favier, 1988). Nonetheless, as Larson and Daniels (1998) note, “…the measures of counselor performance have focused almost exclusively on beginning level skills with more development needed in assessing more advanced skills.” (p. 185-187).
Thus, more research is needed to examine the effect of counselor self-efficacy post-licensure.

**Continuing competence**

While foundational competencies and functional competencies, such as self-efficacy, are important to attain professional competence, the continuing competence of lifelong learning and continuing professional development is important to maintain and enhance professional competence once it is achieved. Building on this idea, the American Psychological Association (2006) Task Force on the Assessment of Competence in Professional Psychology distinguishes “competence” from “capability” (see also Kerns et al., 2009). Capable psychologists are competent, but they are also able to adapt their skills, create new knowledge, and continually enhance their clinical work (APA, 2006; Fraser & Greenhalgh, 2001; Stephenson & Yorke, 1998). Thus, capability includes competence, but also extends the concept of competence to include lifelong learning (APA, 2006).

Several definitions have been proposed for the term “lifelong learning” (Hojat, Veloski, Nasca, Erdmann & Gonnella, 2006; Lichtenberg & Goodyear, 2012; Longworth, 2001; McCombs, 1991). A comprehensive alternative definition, which will be used in this study, is proposed by Lichtenberg and Goodyear (2012) and was adapted from the Commission for a Nation of Lifelong Learners’ (1997) definition. These researchers define lifelong learning as “…a continuously supportive process which stimulates and empowers individuals to acquire the knowledge, values, skills and understanding they require throughout their professional lifetimes and to apply them with confidence, creativity, and enjoyment in their various professional roles, circumstances, and environments” (p. 3). Thus, lifelong learning is viewed as an active, continually evolving,
empowering, intellectually stimulating process that allows individuals to gain relevant knowledge, values, skills, and understanding that will help them be more secure, resourceful, and satisfied in their work settings and roles.

In an effort to operationalize definitions such as this, through a systematic review of the term and several discussion panels, Hojat and colleagues (2006) defined lifelong learning as “a concept that involves a set of self-initiated activities (behavioral aspect) and information seeking skills (capabilities) that are activated in individuals with a sustained motivation to learn and the ability to recognize their own learning needs (cognition)” (p. 931).

Lifelong learning is an important component of competence in the health professions. In a study of 300 physicians, over 75% reported that it is very important for medical schools to place a clear emphasis on lifelong learning and consider it a critical form of competence in the field (Finoochio, Bailiff, Grant & O’Neil, 1995). In fact, the House of Delegates of the American Medical Association notes, in their Principles of Medical Ethics, “A physician shall continue to study, apply, and advance scientific knowledge, [and] maintain a commitment to medical education…” (AMA, 2001, para. 6). Likewise, participants and presenters at the 2010 American Psychological Association Education Leadership Conference note that lifelong learning is an ethical responsibility for all psychologists (Vasquez, 2011).

One reason why lifelong learning is so important for psychologists is because of the autodidactic nature of learning post-graduate school. The first five to eight years of a psychologist’s training and practice are closely monitored and supervised through graduate school training, practicum experiences and supervision, and internship
experiences, and culminates in successful completion of the Examination for Professional Practice in Psychology (EPPP) and licensure. However, after passing the EPPP, psychologists have a great deal more freedom, and therefore much less accountability, for continuing professional development and professional competency (see Kerns et al., 2009). And, while most psychologists are required to engage in continuing education, there are very few requirements on what type of continuing education psychologists must complete. Thus, the field relies on psychologists to self-assess their areas of need and engage in their own lifelong learning, which may or may not relate to their specialty or clinical work. At this stage, psychologists often transition from regular assessments and feedback from others to relying on assessments and feedback primarily by themselves (see also Taylor et al. 2012d). This transition from “other-” to “self-” assessment requires an orientation towards lifelong learning and growth, as well as competence recognize personal strengths and weaknesses and how to remediate such weaknesses. Thus, the process that allows an individual to remain professionally competent is an orientation towards lifelong learning (Taylor et al., 2012d).

**Continuing professional development.** The clearest translation of professional psychology’s commitment to lifelong learning is the extent to which it is dedicated to a model of continuing professional development (CPD). CPD represents a range of professional activities that provide an opportunity for ongoing professional learning, activities that are frequently mandated for license renewal as professional psychologists. There are several forms of professional development that are involved in the ongoing, typically autodidactic maintenance of professional competencies. Included
in professional development activities are formal continuing education (CE), informal continuing education, and incidental learning (Lichtenberg & Goodyear, 2012).

As Neimeyer, Taylor, and Cox (2012a) note, formal continuing education “...provides a structured learning context with predetermined objectives, against which the nature and extent of learning can be measured...[and places the individual] in the express role of ‘student’ with the declared objective of learning some circumscribed material, skill, or application” (p. 6). Formal CE is designed to help psychologists keep up with the trends, research, and skill sets that inevitably advance with shifting times, and research supports CE effectiveness. Studies suggest that most therapists are satisfied with their CE experiences, the translation of their CE knowledge to clinical work, and the impact of CE towards their ethical behavior (Neimeyer, Taylor, & Philip, 2010a; Neimeyer et al., 2009; Neimeyer et al., 2011; Sharkin & Plageman, 2003). However, some psychologists express concerns about the value of formal CE, pointing to the cost and inconvenience of obtaining CE credits, quality and availability of CE programs, and the lack of clear, objective evidence that knowledge gained from CE programs successfully translates to a therapist’s practice and ultimately, to client outcomes (Ellsworth, 1968; Neimeyer, Taylor, & Wear, 2010b; VandeCreek, Knapp, & Brace, 1990).

Currently, 46 out of 51 jurisdictions in the United States (50 states plus the District of Columbia) require a stipulated number of formal CE credits on a yearly or bi-yearly basis (Neimeyer & Taylor, 2010). Surrounding areas, such as Canadian provinces, are also beginning to enforce legislation to ensure lifelong learning. Ontario, for instance, utilizes a “mandatory quality assurance program” to ensure professional
competency (Melyn et al., 2001). And, as it currently stands, the “mandatory
requirement of continuing education is the sole licensing action addressing continued
competencies by licensees” (Rubin et al., 2007, p. 456).

Formal CE learning is assessed through the learner’s feedback regarding the
program’s effectiveness and may also be measured through knowledge or skills tests
over the material. The American Psychological Association defines formal continuing
education as

an ongoing process consisting of formal learning activities that (1) are relevant to
psychological practice, education, and science, (2) enable psychologists to keep
pace with emerging issues and technologies, and (3) allow psychologists to
maintain, develop, and increase competencies in order to improve services to the
public and enhance contributions to the profession.” (American Psychological
Association Council of Representatives, 2000)

While the purposes of formal CE are to help psychologists stay current and
deepen and broaden their competencies, the psychologist’s orientation towards lifelong
learning is the vehicle that drives motivation towards completing formal CE. Lifelong
learning prevents obsolescence, which occurs when knowledge or skills atrophy.
Burack and Pati (1970) describe obsolescence as incongruence between professional
skills and career needs due to advancements in research and applications or when
current proficiencies and eruditions are not adequate to do one’s job well. This naturally
occurring knowledge atrophy appears throughout many disciplines (Cohen & Dubin,
1970) and emphasizes the importance of ongoing skill building and continual learning.

Dubin (1972) also highlights the importance of lifelong learning and continuing
professional development for psychologists. He compares professional obsolescence to
the half-life of nuclear physics and defines the half-life of knowledge as “…the time after
completion of professional training when, because of new developments, practicing
professionals have become roughly half as competent as they were upon graduation to meet the demands of their profession” (p. 487). He estimates the half life of a psychologist to be about 10 to 12 years, with a span of five to 20 years, implicating the necessity that CE must be maintained to ensure appropriate competency. A recent Delphi study found that the estimated current half-life of knowledge in the field of psychology is 8.8 years, with the half-life projected to decrease to only 7.1 years by 2021 (Neimeyer, Taylor, & Rozensky, 2012b; see also Neimeyer, Taylor, Wear, & Linder-Crow, 2012c and Neimeyer & Taylor, 2011). Some specialty areas are estimated to have an even shorter half-life; psychopharmacology, for example, is estimated to have a present half-life of only 4.9 years, with an estimated half-life of only 3.6 years with in the next 10 years (Neimeyer et al., 2012b).

However, formal CE can extend this short half-life of professional knowledge and is offered through many mediums. For the purposes of maintaining licensure, CE credits are often obtained through formal workshops, some conferences, lectures, teleconferences. Some states even grant CE credits through more informal means, such as through journal subscriptions and other self-learning resources. The Association of State and Provincial Psychology Boards (ASPPB) recommends, however, that learning which occurs organically through a normal workday, known as “incidental learning” (discussed in further detail below), should not be considered for CE credit. Furthermore, they suggest that informal consultations with other therapists, training for building a practice, personal therapy, and attendance to undergraduate courses should not count for CE credit (Melnyk et al., 2001). Thus, formal CE tends to

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be a structured form of learning that requires the learner to engage in learning that goes beyond his or her typical professional activities.

Informal continuing education, or self-directed learning, however, typically encompasses a broader range of learning vehicles, and the learner’s knowledge or skills generated is not closely monitored, as is the case with formal CE. Informal CE includes activities such as readings that relate to the profession, watching professional videos or listening to audiotapes, or other unsponsored or informal forms of professional learning (see also Allen, Nelson, & Sheckley, 1987; Goodyear & Lichtenberg, 2008; Neimeyer et al., 2012a; Neimeyer et al., 2009; Skovholt & Starkey, 2008).

Incidental learning occurs when learning takes place even though the primary reason behind the activity is not to gain knowledge or a specific skill (Lichtenberg & Goodyear, 2012). Incidental learning occurs as a by-product of the activity at hand. Examples of incidental learning include teaching a course or acting as a reviewer for a journal. While the express purpose of the activity is not necessarily to engage in learning, the individual indirectly engages in learning as a result of the activity. In contrast with formal continuing education, incidental learning is not supervised and does not require an evaluative reflection of learning upon completion of the activity.

**Need for Competency Assessments**

In reviewing the literatures on foundational, functional, and continuing competencies, the absence of available measurement tools becomes clear. Although theoretical underpinnings for various forms of professional competence have been explored through this chapter (see Fouad et al., 2009), few assessments actually exist to measure professional competencies, and no models exist to test whether or not there are three distinct constructs for professional competence that map onto the prevailing,
contemporary conceptualizations (i.e., foundational, functional, and continuing competencies). Several researchers note that there is a very little empirical research on competencies for psychologists after completion of their formal training, despite a longstanding need (Heinsman et al., 2007; Lewinsohn & Pearlman, 1972). Indeed, the current method of assessing doctoral student competencies (through successful completion of coursework and clinical hours) is “likely a poor proxy for actual evaluation of competence” (Fouad et al., 2009, p. S7).

The American Psychological Association Task Force (2006) underscores the importance of assessing competencies. In Principle Seven of their Final Report on the Assessment of Competence in Professional Psychology, the task force urges that “generic and specialty foundational and functional competencies must be evaluated in a comprehensive assessment of competence...at all stages of training and career functioning” (p. 105-106).

**Theoretical Assessment Models for Measuring Competencies**

Although recent efforts have been made to identify potential mechanisms for evaluating competence, they suffer from at least two significant shortcomings. First, the methods for evaluating competence have not derived from the conceptualization of competencies, per se, and therefore they do not articulate with any underlying conceptualization. And second, many of them are omnibus assessments lacking both in targeted specifics and, often, in psychometric indications of their reliability and validity. For example, Kaslow and colleagues (2009) generated an extensive catalog of available tools for assessing competence. This Competency Assessment Toolkit for psychologists was designed to provide needed methods for assessing competency at three developmental phases (readiness for practicum, internship, and practice), while
addressing both the strengths and limitations of each assessment method. Kaslow and colleagues (2009) proposed 15 methods for assessing psychologists’ competency. These include 360-degree evaluations, annual or rotation performance reviews, case presentation reviews, competency evaluation rating forms, client or patient process and outcome data, consumer surveys, live or recorded performance ratings, objective structured clinical examinations, portfolios, recorded reviews, simulations or role plays, self-assessment, standardized client or patient interviews, structured oral examinations, and written examinations. In addition to a description of each measurement of competence, Kaslow and colleagues (2009) include an evaluation of the usefulness of each tool for assessing each of the 15 specific competencies. While the Competency Assessment Toolkit for Professional Psychology does not include specific assessments that can be used for each type of assessment method, it does describe general methods that could be used to measure professional competencies. However, the field now needs an accessible, psychometrically sound measure of competence that clearly articulates with the contemporary conceptualization of competence in the current literature.

**Purpose of the Present Study**

Self-assessment of professional competence is an integral aspect of ensuring, enhancing, and maintaining competencies (see Kaslow et al., 2007). Competency assessment promotes learning, provides valuable feedback regarding a psychologist’s strengths and weaknesses and training program effectiveness, creates opportunities for remediation, and protects the public (see Black & William, 1998; Kaslow, 2004). Kaslow (2004) notes that psychologists are fairly good at assessing their knowledge, but there is a need for methodologies that assess skills and attitudes. Using the behavioral
anchors proposed by Fouad and colleagues (2009), the Competency Benchmarks evolved into a competency self-assessment tool for the present study. This study will measure the knowledge, skills, and attitudes that comprise foundational, functional, and continuing professional competencies.

Figure 1-1. Cube model for professional competencies. Adapted from “A Cube Model for Competency Development: Implications for Psychology Educators and Regulators,” by E. Rodolfa et al., 2005, *Professional Psychology: Research and Practice*, 36, 350.

*Note.* Foundational competencies are displayed on the top of the cube, functional competencies are displayed on the bottom left area of the cube, and the developmental stages are displayed on the right part of the cube. Each competency domain is
interconnected with the others (functional competencies are related to foundational competencies and the developmental competency level).
Participants and Procedures

Participants were recruited through the listservs of the State, Provincial, and Territorial Psychological Associations (SPTAs), the American Psychological Association Practice Organization (APAPO), the Council of Counseling Psychology Training Programs (CCPTP), and the American Board of Professional Psychologists (ABPP). Members of these psychological associations received an e-mail inviting them to participate in an online study exploring professional competencies, lifelong learning, and continuing professional development. In the e-mail, participants received a secured, anonymous link to sign the online IRB agreement and participate in the survey. The survey consisted of 108 items and took, on average, approximately 15-20 minutes to complete. A total of 428 psychologists completed the study. Participants included 224 males (52.3%) and 204 females (47.7%). In the study, 86.5% reported their race/ethnicity as Caucasian American or White, 7.0% as Hispanic or Latina/o, 1.1% as American Indian, Native American, or Alaskan Native, 0.9% as African American or Black, 0.9% as Biracial or Multiracial American, 0.4% as East Indian or Indian American, 0.2% as Asian American or Pacific Islander, 0.2% as Arabic American or Middle Eastern, 1.3% as “Other”, and 1.7% declined to report their race/ethnicity. Psychologists from every state, province, and territory in North America participated in the present study.

The mean years in practice for this sample was 25.77 (SD = 11.9), suggesting that many participants were seasoned psychologists. Most of the participants (98.5%) reported that they are licensed psychologists, and most (65.2%) reported their
specialization as clinical psychology, 24.1% as counseling psychology, 4.3% as school psychology, 0.4% as counselor education, 0.2% as industrial/organizational psychology, 5.8% as “other”. The majority of participants responded that their highest professional degree was a Ph.D. (80.0%), followed by 13.7% reporting a Psy.D., 3.4% Ed.D., 0.6% M.S. or M.A., 0.4% M.S.W., 0.2% M.Ed., and 1.7% reporting “Other”. A large proportion of participants (72.8%) reported that they were trained in the Scientist-Practitioner model, while 19.7% reported training in the Practitioner-Scholar model, 4.8% in the Clinical Science model, and 2.6% reported training in other models. Most participants (82.8%) reported that their state had general CE mandates for re-licensure, and many (73.2%) also reported that their state had specific mandates on CE in ethics for re-licensure, most (61.2%) were members of a state, province, or territorial Psychological Association and most (56.8%) were board certified through ABPP. Participants worked in various work settings; 37.7% reported that their primary work setting was independent practice, 20.6% worked in a hospital or medical setting, 14.7% in a university academic department, 5.7% in a group practice, 4.4% in a community agency, 4.4% in a university counseling center or mental health center, and 12.5% reported working elsewhere.

In order to examine the relationship between foundational, functional, and continuing competencies and their contribution to overall professional competence, a number of instruments were used (see appendices for measures).

**Instruments**

**Professional Competencies Scale**

In an effort to fully assess broad professional competencies in the field of psychology, the Professional Competencies Scale (PCS) was developed. The PCS
contains 16 subscales (seven Foundational Competency subscales, eight Functional Competency subscales, and one Continuing Competency subscale), modeled after, and extended from, Fouad and colleagues’ (2009) conceptualization of professional competence in the field of psychology. The Foundational Competency subscales include 1) professionalism, 2) reflective practice/self-assessment/self-care, 3) scientific knowledge and methods, 4) relationships, 5) individual and cultural diversity-awareness, 6) ethical legal standards and policy, 7) interdisciplinary systems. Functional competencies include 1) assessment, 2) intervention, 3) consultation, 4) research and evaluation, 5) supervision, 6) teaching, 7) management/administration, and 8) advocacy. Continuing competencies measures the participant’s orientation towards lifelong learning. The Foundational and Functional subscales each contain two items, while the Continuing Competencies subscale contains three items. All items are measured on a five-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). See Appendix A for a copy of the items. Thus, lower scores represent lower self-assessed competencies. The reliability for this scale in the current study was $r = .92$.

Measures for Convergent Validity with the Foundational Professional Competencies Subscale

Three measures were used to assess convergent validity with the Foundational Professional Competencies subscale: the Short Form Version of the Mental Health Inventory (Stewart, Hays, & Ware, 1988), the Miville-Guzman Universality-Diversity Scale – Short Form (Fuertes, Miville, Mohor, Sedlack, & Gretchen, 2000), and the Therapist Self-Care Scale (Mahoney, 1997).
The Short Form Version of the Mental Health Inventory (Foundational Competency)

The Short Form Version of the Mental Health Inventory (MHI-5) was used as a measure for convergent validity with the Foundational Competencies subscale. It is a five-item measure of well-being and psychological distress (Stewart et al., 1988) measured along a series of 6-point scales (1 = all of the time, 6 = none of the time). This short form version of the MHI-5 was adapted from the Veit and Ware (1983) Mental Health Inventory, created for the Rand Health Insurance Experiment. The MHI-5 was modeled after the General Well-Being Schedule (GWB) (Dupuy, 1973; Veit & Ware, 1983). The five items were chosen from the full-scale 38 item measure, because they were the items that correlated most highly with the full scale. Because item responses are bi-directional, two of the item responses must be reverse-coded (items one and two), so higher summed scores indicate the absence of psychological distress and greater psychological well-being during the previous month.

The Cronbach’s alpha has been reported at $r = .82$ (National Multiple Sclerosis Society, n.d.), $r = .88$ (Stewart, Hays, & Ware, 1988), and in a small study of 42 psychologists, the Cronbach’s alpha was found to be $r = .62$ (Taylor et al., 2010). The reliability for this scale in the current study was $r = .81$.

Other researchers have found that the MHI-5 performed as well as a longer version of the Mental Health Inventory (MHI-18), and a 30-item version of the General Health Questionnaire (GHQ-30) when detecting the most significant Diagnostic Interview Schedule disorders (e.g., anxiety disorders, depressive disorders, general affective disorders) (Berwick, Murphy, Goldman, Ware, Barsky, & Weinstein, 1991). Through the use of the receiver operating curve (ROC) analysis to assess for the
sensitivity and specificity of the MHI-5, the researchers found that the areas under the curve ranged from 0.89 (for major depression) and 0.74 (for anxiety disorders). Berwick and colleagues (1991) also note that each of the five items performed well on their own.

Regarding convergent validity, the MHI-5 was related to a single-item measure of social functioning at \( r = .45, p < .001 \) and was related to a health perceptions scale at \( r = .45, p < .001 \) (Stewart et al., 1988). The MHI-5 was related to the Zung Self-Rating Depression Scale (ZSDS) at \( r = -.63 \) (Yamazaki, Fukuhara, & Green, 2005). When field tested, the Mental Health Inventory has proven to have good convergent and discriminant validity (see National Multiple Sclerosis Society, n.d.).

**Therapist Self-Care Scale (Foundational Competency)**

The Therapist Self-Care Scale (Mahoney, 1997) was also used as a measure of convergent validity for the Foundational Professional Competencies subscale. The Therapist Self-Care Scale is a 12-item subscale that measures the degree to which therapists are involved in self-care, such as hobbies, vacations, movies, peer supervision, and personal therapy. Items are measured on a 4-point scale (1 = very rarely/never, 2 = often/very often). One sample item is, “Over the previous year, how often have you engaged in physical exercise”. (See Appendix B for a copy of the scale). The Cronbach alpha for this subscale has been reported at \( r = .65 \) in a study of 49 professional psychologists (Taylor et al., 2010). The reliability for this scale in the current study was \( r = .57 \).

Research suggests that The Therapist Self-Care Scale (Mahoney, 1997) correlates with the Self-Care subcale of the Occupational Stress Inventory-Revised (Osipow, 1998) at \( r = .37 \) (Brucato & Neimeyer, 2010). Osipow’s self-care subscale assesses the degree to which an individual engages in activities for health benefits.
Miville-Guzman Universality-Diversity Scale – Short Form (Foundational Competency)

As a final measure to assess convergent validity with the Foundational Professional Competencies subscale, the Miville-Guzman Universality-Diversity Scale – Short Form (Fuertes et al., 2000) was used. This scale measures an individual's appreciation for the differences and commonality among himself or herself and others. Miville and colleagues (1999) describe the construct of Universality-Diversity Orientation as:

an attitude toward all other persons that is inclusive yet differentiating in that similarities and differences are both recognized and accepted; the shared experience of being human results in a sense of connectedness with people and is associated with a plurality or diversity of interactions with others. (p. 252)

The Miville-Guzman Universality-Diversity Scale – Short Form (M-GUDS-S) was created from the Miville-Guzman Universality-Diversity Scale (M-GUDS) (Fuertes et al., 2000). The five largest structure coefficients from each of the three factors [Diversity of Contact (DOC), Relativistic Appreciation (RA), and Comfort with Differences (CD)] were chosen for inclusion in the short-form of the scale. The correlation between the full scale M-GUDS and the short form was $r = .77$, $p < .001$ (Fuertes et al., 2000). The internal consistency for the Diversity of Contact subscale was $r = .82$, Relativistic Appreciation subscale was $r = .59$, and the Comfort with Differences subscale was $r = .92$ (Fuertes et al., 2000); Kottke (2011) reported internal consistency of $r = .85$, .88, and .85, respectively. Test-retest reliability for the full-scale M-GUS has been reported as .94 (Miville et al., 1999). The reliability for this scale in the current study was $r = .80$.

Kottke (2011) found that each of the three factor loadings were statistically significant and had a median standardized loading of .75. Each factor was related to
each other, but there was not significant overlap between the factors, suggesting that each factor uniquely contributes to overall construct.

Each of the M-GUDS-S factors significantly correlated with the Big Five Openness to Experience (OE) factor, providing some limited convergent validity (DC and OE $r = .18$, RA and OE $r = -.23$, CD and OE $r = -.17$, $p < .01$) (Kottke, 2011). Additionally, in a study by Fuertes and colleagues (2000), the overall measure M-GUDS-S was significantly related to several census items that were associated with diversity. Correlations ranged from $r = .45$ for the census item "I have a close friend who is not my race" to $r = .25$ for the census item "I discuss topics related to cultural awareness with friends", $p < .004$. Some convergent validity is found through the correlation between the full scale M-GUDS and the White Racial Identity Attitude Scale subscales ($r = .42$ for the pseudo-independence subscale to $r = -.60$ for the reintegration subscale, $p < .001$) (Miville et al., 1999). Lastly, the full scale M-GUDS and a social desirability measure were not significantly correlated ($r = .17$), suggesting that the M-GUDS has discriminant validity (Milville et al., 1999).

**Measure for Convergent Validity with the Functional Professional Competencies Subscale: Counselor Self-Efficacy Scale (Functional Competency)**

The Counselor Self-Efficacy Scale (Melchert, Hays, Wiljanen, & Kolocek, 1996) was used for convergent validity with the Functional Professional Competencies subscale. This scale measures psychologist self-efficacy.

The Counselor Self-Efficacy Scale consists of 20 items measured on a five point Likert-type scale (1 = disagree strongly, 5 = agree strongly). This scale measures confidence of knowledge and skill competencies that are associated with individual and group therapy. To prevent response bias, half of the items are worded negatively and...
will need to be recoded when analyzing the data, so higher scores equal higher self-efficacy.

Content validity for this scale is evidence by agreement among three licensed psychologists, from different theoretical orientations, who were supervising trainees at a counseling center during the time of the scale development. The psychologists served as expert judges. To assess the goodness of items, agreement on the items was required by two out of the three judges. All 20 items met the criteria for inclusion, and 19 out of the 20 items were unanimously agreed upon by the judges (Melchert et al., 1996).

Convergent validity for the Counselor Self-Efficacy Scale was assessed through examining the relationship between scores from the Counselor Self-Efficacy Scale and the Self-Efficacy Inventory (Friedlander & Snyder, 1983) among 60 graduate student therapists. The correlation was strong \( r = .83 \) (Melchert et al., 1996).

Reliability has been measured in two ways. Internal consistency was measured through the Cronbach’s alpha and has been reported at \( r = .91 \) (Melchert et al., 1996) and \( r = .80 \) (Taylor et al., 2012c). Test-retest reliability was measured through administration of the test on two occasions, with one week separating the testing periods. The temporal stability was found to be \( r = .85 \) (Melchert et al., 1996). The reliability for this scale in the current study was \( r = .88 \).

**Measures for Convergent Validity with the Continuing Professional Competencies Subscale**

Two measures were used to assess the convergent validity of the Continuing Professional Competencies subscale: the Jefferson Scale of Psychotherapist Lifelong Learning (Taylor et al., 2012b), two questions that assessed each participant’s involvement with formal and informal continuing education over the past year, asking
them to indicate the number of hours they spent in formal and informal professional development activities, and five questions that assessed each participant’s involvement in various professional activities.

**The Jefferson Scale of Psychotherapist Lifelong Learning (Continuing Competency)**

The Jefferson Scale of Psychotherapist Lifelong Learning (JSPLL; Taylor et al., 2012b) was used to measure the psychologist’s orientation towards lifelong learning in three areas: learning beliefs and motivation, skills in information seeking, and attention to learning opportunities. The JSPLL was expected to provide convergent validity between the full scale JSPLL and the three-item Continuing Competence subscale.

The Jefferson Scale of Psychotherapist Lifelong Learning demonstrates some convergent validity through its relationship with a five-item measure of professional and academic involvement ($r = .57$) (Taylor et al., 2012b).

The Jefferson Scale of Psychotherapist Lifelong Learning and the Continuing Capability subscale also have good inter-item reliability, $r = .85$ (see Taylor et al., 2012b). The three-item Continuing Competence subscale has an inter-item reliability of $r = .31$, but the three-item measure has been shown to correlate with the full scale 19-item measure at $r = .78$, $p < .001$, suggesting that Continuing Competence subscale measures nearly the same construct as the Jefferson Scale of Psychotherapist Lifelong Learning, and the three items measure distinct aspects of lifelong learning: learning beliefs and motivation, attention to learning opportunities, and technical skills in information seeking (Taylor et al., 2012b). The reliability for this scale in the current study was $r = .84$. 

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Scholarly and Professional Productivity (Continuing Competency)

A five-item measure of participation in scholarly and professional activities was also included to provide convergent validity for the three-item lifelong learning measure included in the Professional Competencies Scale. It was developed for this study. The reliability for this scale in the current study was $r = .85$.

Data Analyses

Second Order Confirmatory Factor Analysis

Because there is a theoretical model for the components of professional competence (see Fouad et al., 2009), a second order confirmatory factor analysis (CFA) was used to verify the factor structure of the general professional competence construct and the three underlying constructs (Foundational, Functional, and Continuing Competencies). Using CFA, the relationships between the three variables (Foundational Professional Competence, Functional Professional Competence, and Continuing Professional Competence) and their 20 underlying latent constructs were examined (see Figure 2-1).

Amos 20 (Arbuckle, 2011) was used to conduct the CFA. To determine the adequateness of fit for the model, several fit statistics were examined. The chi-square statistics was used to determine goodness of fit between the proposed theoretically-driven model and the empirical data. Significant decreases in the chi-square statistics are indicative of better fit of the data with the proposed model. The chi-square test, however, is sensitive to sample size and non-normality in the variables. Because trivial differences can cause the chi-square statistic to be significant due only to large sample sizes, the ratio of chi-square to the degrees of freedom for the model can indicate goodness of fit (Joreskog & Sorbom, 1993), as can other fit criterion (detailed below).
The Root Mean Square Residual (RMSEA) was also used to estimate fit, where smaller values indicated better fit. Hu and Bentler (1999) suggest that RMSEA should be less than 0.08 (values less than 0.05 suggest good fit, while values between 0.08 and 0.10 suggest mediocre fit) and non-significant, which would indicate that the model fits closely with the degrees of freedom. However, this guideline requires some subjective judgment (see Arbuckle, 2007), so additional fit criteria were also used to examine model fit and parsimony.

The Comparison Fit Index (CFI) was also examined (see Benter, 1990; Garver & Mentzer, 1999; Keith, 1997). This fit statistic should be greater than 0.90, which would indicate good to excellent fit.

After examining model fit, parameter estimates were explored, including the standardized regression weights and the squared multiple correlations for each indicator and for first-order factor in the second-order confirmatory factor analysis.

The Maximum Likelihood estimates were used for model estimation, because the measures were mainly multivariate normal. One loading per factor was fixed to “one”. In order to achieve good model-fit, items were eliminated if indicator reliabilities are low (less than 0.40). If the CFA model fit is unacceptable, an exploratory factor analysis will be performed to determine whether or not constructs should be grouped differently.

Important Considerations for Confirmatory Factor Analysis

Sample size and missing data

While there is little agreement on the suggested sample size for factor analysis (Comrey & Lee, 1992; Gorsuch, 1983; Sivo et al., 2006), it is important to have sufficient statistical power for this analytical technique. Garver and Mentzer (1999) and Hoelter (1983) recommend a sample size of 200 participants or more. Because certain statistics
(e.g., modification indices) are not available with missing data present, only participants with complete data were included in the CFAs. Thus, listwise deletion was used for participants with missing data. The sample size for the CFA analyses was 342 participants.

**Multivariate normality and outliers**

The CFA estimation techniques assume multivariate normality. To assess for normality, the measured variables were screened for outliers, and the skewness and kurtosis of the measured variables were analyzed, as suggested by Tabachnick and Fidell (2007). No significant skewness or kurtosis was present.
Figure 2-1. Second-order confirmatory factor analysis model for professional competence.
CHAPTER 3
RESULTS AND DISCUSSION

Preliminary Data Analysis

Before conducting any analyses and interpreting results, the relationship between the two social desirability items and the full Professional Competencies Scale (PCS), Foundational Competencies subscale, Functional Competencies subscale, and Continuing Competencies subscale were examined. Social Desirability item “A” was significantly, but only minimally, related to the full PCS ($r = .14, p < .01, N = 368$), foundational competencies ($r = .11, p < .05, N = 406$), functional competencies ($r = .14, p < .01, N = 381$), and continuing competencies ($r = .13, p < .01, N = 413$); Social Desirability item “B” was also significantly, but only minimally related to the full PCS ($r = .14, p < .01, N = 370$), foundational competencies ($r = .13, p < .05, N = 407$), and functional competencies ($r = .12, p < .05, N = 383$). Social Desirability item “B” was not significantly related to continuing competencies ($r = .09, p = .06, N = 414$).

Psychometrics of the Professional Competencies Scale

The results of the psychometrics of the Professional Competencies Scale (PCS) will be discussed first, followed by the results of the Confirmatory Factor Analysis.

Item Statistics and Item-Total Score Correlations of the PCS

The mean item scores for the 33-item PCS ranged from a high of 4.48 (SD = .55) for “I demonstrate the ability to gather information necessary to answer referral questions” to a low of 3.69 (SD = .84) for “I demonstrate the capacity to develop a system for evaluating supervisees/staff/employees.” Item-total score correlations were each statistically significant and positive ($p < .001$) and ranged from a low of $r = .35$ for “I promote client self-advocacy” to a high of $r = .61$ for “I recognize when new or
improved competencies are required for effective practice." The item-total score correlations’ median was \( r = .49 \).

**Inter-Item Reliability of the PCS**

Reliability was found to be strong in all measures except one (Therapist Self Care Scale, \( r = .57 \)). The Cronbach’s alpha for the Jefferson Scale of Psychotherapist Lifelong Learning was .84. The Cronbach’s alpha for the Counselor Self-Efficacy Scale was .88, \( r = .80 \) for the Miville-Guzman Universality-Diversity Scale-Short Form, and \( r = .81 \) for the Mental Health Inventory.

The full version of the Professional Competencies Scale had a Cronbach’s alpha of .92 (\( N = 33 \) items). The Cronbach’s alpha for the Foundational Competencies subscale was .84 (\( N = 14 \) items), the Functional Competencies subscale’s Cronbach’s alpha was .86 (\( N = 16 \) items), and the Continuing Competencies subscale’s Cronbach’s alpha was .65 (three-item shortened version of the JSPLL). Thus, inter-item reliability for the full PCS and the individual subscales was excellent (Cronbach & Shavelson, 2004; Shoukri & Edge, 1996).

Reliability for each of the 16 two-item subscales that make up the Foundational, Functional, and Continuing Competencies subscales was in the good or acceptable range (Cronbach & Shavelson, 2004; Shoukri & Edge, 1996). The Cronbach’s alpha for the Professionalism subscale was \( r = .60 \), \( r = .61 \) for the Reflective Practice/Self-Assessment/Self-Care subscale, \( r = .48 \) for the Scientific Knowledge and Methods subscale, \( r = .53 \) for the Relationships subscale, \( r = .71 \) for the Individual and Cultural Diversity-Awareness subscale, \( r = .52 \) for the Ethical Legal Standards and Policy subscale, \( r = .68 \) for the Interdisciplinary Systems subscale, \( r = .72 \) for the Assessment subscale, \( r = .57 \) for the Intervention subscale, \( r = .67 \) for the Consultation subscale, \( r = ...
.56 for the Research/Consultation subscale, \( r = .63 \) for the Supervision subscale, \( r = .74 \) for the Teaching subscale, \( r = .57 \) for the Management/Administration subscale, \( r = .51 \) for the Advocacy subscale, and \( r = .65 \) for the Continuing Competencies subscale. No analyses were conducted at the sub-scale level, however; all analyses occurred only in relation to the collective foundational competencies, functional competencies and continuing competencies, as well as the total score for the complete Professional Competence Scale.

**Convergent Validity**

**Foundational Professional Competencies Subscale of the PCS**

Three measures were used to assess convergent validity with the Foundational Professional Competencies subscale: the Short Form Version of the Mental Health Inventory (Stewart, Hays, & Ware, 1988) \( (r = .06, p = .26, N = 404) \), the Miville-Guzman Universality-Diversity Scale – Short Form (Fuertes, Miville, Mohor, Sedlack, & Gretchen, 2000) \( (r = .46, p < .001, N = 390) \), and the Therapist Self-Care Scale (Mahoney, 1997) \( (r = .19, p < .001, N = 392) \).

**Functional Professional Competencies Subscale of the PCS**

The Counselor Self-Efficacy Scale (Melchert, Hays, Wiljanen, & Kolocek, 1996) was used to examine convergent validity with the Foundational Competencies subscale of the Professional Competencies Scale \( (r = .58, p < .001, N = 346) \).

**Continuing Professional Competencies Subscale of the PCS**

The Jefferson Scale of Psychotherapist Lifelong Learning (Taylor et al., 2012b) was used to examine convergent validity with the Continuing Competencies subscale of the Professional Competencies Scale. In addition, two demographic questions, which assessed each participant’s involvement with informal and formal continuing education
over the past year, were used to explore convergent validity with the Continuing Competencies subscale. As predicted, both informal and formal CE were significantly related to the Continuing Competencies subscale of the PCS \( (r_{\text{informal CE}} = .23, p < .001, N = 407; r_{\text{formal CE}} = .21, p < .001, N = 398) \).

Furthermore, the relationship between participants orientations towards lifelong learning and their continuing professional competencies was \( r = .73, p < .73, N = 398 \), suggesting that the three-item short form of the Jefferson Scale for Psychologist Lifelong Learning (Taylor et al., 2012b) may be a reasonable proxy for the full version JSPLL. In addition, continuing competency was related to greater involvement in professional activities (e.g., publications, presentations, serving on boards) \( (r = .24, p < .001, N = 402) \), a finding that suggests some convergent validity for the Continuing Competencies subscale.

In addition, the Continuing Competencies subscale of the Professional Competencies Scale was related to, but yet somewhat distinct from, the Foundational and Functional Professional Competencies subscales. The Continuing Competencies subscale was significantly related to the Foundational Competencies subscale \( (r = .55, p < .001, N = 387) \) and Functional Competencies subscale \( (r = .51, p < .001, N = 381) \), yet the correlations between these subscales were not as strong as the correlation between the Foundational Competencies subscale and the Functional Competencies subscale of the PCS.

In addition to these indicators of convergent validity, the Foundational, Functional, and Continuing Competencies subscales each showed significant
relationships with a range of other scales, as well. See Table 3-1 for the complete matrix of correlations.

**Full Version of the Professional Competencies Scale**

All measures of convergent validity were related to overall professional competence, except for the Mental Health Inventory \((r = .05, p = .31, N = 366)\). The PCS was related to the Therapist Self Care Scale \((r = .17, p < .01, N = 356)\), the Miville-Guzman Universality-Diversity Scale-Short Form \((r = .42, p < .001, N = 353)\), the Counselor Self Efficacy Scale \((r = .57, p < .001, N = 332)\), the Jefferson Scale of Psychotherapist Lifelong Learning \((r = .62, p < .001, N = 357)\), and participation in formal CE \((r = .21, p < .001, N = 356)\) and informal CE \((r = .20, p < .001, N = 363)\). Thus, convergent validity for the Professional Competencies Scale was detected between every measure studied with the exception of one.

Additionally, the Foundational Competencies and Functional Competencies subscales were very strongly correlated with the full version of the PCS \((r = .92, p < .001, N = 372; r = .95, p < .001, N = 372\), respectively). This finding suggests that a briefer version of the PCS may be just as effective as the full 33-item measure. However, the third PCS subscale, the Continuing Competencies subscale, was significantly, but not as strongly, correlated with the full version of the PCS \((r = .63, p < .001, N = 372)\). This finding may indicate that the Continuing Competencies subscale measures an aspect of professional competence that builds upon and adds to the overall construct of professional competence.

**Confirmatory Factor Analysis**

In this phase of the analysis, several models were fitted using Confirmatory Factor Analyses (CFA) to the data from the subsample of 342 participants. The
observed variables for the following models were the set of 33 items from the Professional Competencies Scale and two items regarding participation in formal and informal CE. There were no Heywood cases, suggesting no major outliers, misspecification, or empirical under-identification.

Construct Validation

To examine the construct validation of the proposed model, model and parameter fits were examined. The results are explained below.

Second-Order Confirmatory Factor Analysis

Model fit

Because no single fit index can provide definitive proof of goodness of model fit, several fit indices were used, including the chi-square ($\chi^2$) index, the root mean square of error approximation (RMSEA), and the comparative fit index (CFI). It should be noted that the chi-square statistic is often used to assess model fit. However, because the present sample is large, this test has excessive Type I error rates (see Bollen, 1989). The fit statistics suggest that the model does not fit the data even marginally, with $\chi^2(167) = 658.14, p < .001$; RMSEA = .093 with 90% confidence interval (CI) (.085, .100); CFI = .79.

Parameter fit

Parameter fit was also examined for convergent validity. The squared multiple correlations of two of the three first-order factors’ indicators (foundational and functional professional competencies) were near, but did not exceed 1, suggesting convergent validity for both factors ($r^2 = .92$ and $r^2 = .98$, respectively). The squared multiple correlation for the continuing competency factor was lower, $r^2 = .51$, suggesting more limited convergent validity for the Continuing Competency subscale in relation to the
higher order professional competence factor. Stated differently, 91.9% of the variance in foundational competencies, 97.8% of the variance in functional competencies, and 50.5% of the variance in continuing competencies were explained by the professional competence second order factor. See Table 3-2.

Within the foundational competencies factor, 47.1% of the variance in scientific knowledge and methods, 45.4% of the variance in reflective practice/self-assessment/self-care, 39.2% of the variance in relationships, 34.4% of the variance in interdisciplinary systems, 33.5% of the variance in ethical legal standards and policy, 33.0% of the variance in professionalism, and 26.0% of the variance in individual and cultural diversity-awareness were explained by the foundational competencies factor.

Within the functional competencies factor, 48.9% of the variance in supervision, 48.4% of the variance in research/consultation, 43.9% of the variance in teaching, 38.8% of the variance in intervention, 37.5% of the variance in consultation, 34.1% of the variance in management/administration, 32.5% of the variance in assessment, 24.6% of the variance in advocacy were explained by the functional competencies factor.

Lastly, within the continuing competencies factor, 40.5% of the variance in attention to learning opportunities, 34.4% of the variance in technical skills in information seeking, 34.2% of the variance in learning beliefs and motivation, 7.6% of the variance in participation in informal CE, and 6.5% of the variance in participation in formal CE were explained by the continuing competencies factor. Because the squared multiple correlations were very low for formal and informal CE, they were deleted from subsequent models.
Regarding the standardized regression weights, results from the second-order CFA demonstrated that all three first-order factors loaded strongly into the second-order professional competencies factor (.96 for foundational competencies, .99 for functional competencies, and .71 for continuing competencies (see Figure 3-3). This finding suggests that the higher-order factor is essentially identical to the lower-order factors, and, in particular, the foundational and functional competencies. Thus, another model was run, simplifying the model to a single-order CFA.

**Single-Order Confirmatory Factor Analysis**

**Model fit**

The fit statistics again suggest that the model does not fit the data even marginally, with $\chi^2(132) = 590.4, \ p < .001$; RMSEA = .10 with 90% CI (.093, .109); CFI = .80.

**Parameter fit**

The standardized factor loadings were somewhat strong and ranged from .33 to .47 for the foundational competencies, .26 to .49 for functional competencies, and .30 to .35 for continuing competencies (see Figure 3-4). Likewise, the squared multiple correlations were also strong for foundational competencies ($r^2$ ranged from .51 to .69), functional competencies ($r^2$ ranged from .50 to .70), and fairly strong for continuing competencies ($r^2$ ranged from .60 to .63). See Table 3-3.

**CFA Based on EFA Findings, Using Promax Rotation**

Given the poor fit of the confirmatory factor analysis, an exploratory factor analysis (EFA) was conducted to determine the actual structure of the factors. In order to do this, subscales were retained that were consistent with the theoretical and conceptual literature on the factor structure of professional competence (i.e.,
foundational, functional, and continuing competencies). SPSS was run to predict the number of factors in the Professional Competencies Scale, with the criterion of eigenvalues greater than one. Results suggested that there were five factors in the scale (see Table 3-4).

The factor correlation matrix was examined through an oblique rotation, and the correlations were greater than .32. This meant that there is more than 10% overlap in variance among the factors, which was enough variance to warrant an oblique rotation. Using a promax rotation, which assumes that factors are correlated, and using the criteria that loadings must be greater than .30 (Tabachnick & Fidell, 2007), patterns were discovered in the factor groupings.

The three hypothesized factors (foundational, functional, and continuing competencies) held up fairly well in the EFA model. Within the foundational, functional, and continuing competencies factors, all of those that were conceptually coherent and those that exceeded factor loadings of .30 were retained. This resulted retaining the following foundational competencies scales: 1) professional identity, 2) reflective practice/self-assessment/self-care, 3) scientific knowledge and methods, 4) interpersonal relationships, and 5) interdisciplinary systems (the ethical conduct and diversity awareness subscales were omitted); the following functional competencies: 6) assessment, 7) intervention, and 8) consultation (the management, advocacy, research/consultation, teaching, and supervision subscales were deleted); and the following continuing competencies subscales: 9) learning beliefs and motivation, 10) attention to learning opportunities, and 11) technical skills in information (see Table 3-
A CFA model was created, based on the aforementioned three factors and 19 items. See Figure 3-5.

Model fit

The fit statistics again suggest that the model fit the data very well, with \( \chi^2(41) = 87.89, p < .001; \) RMSEA = .058 with 95% CI (.041, .075); CFI = .958. (See Table 3-6 for a comparison of the fit statistics in the sequence of CFA models.)

Parameter fit

The standardized factor loadings and square multiple correlations were strong for foundational competencies (\( r^2 \) ranged from .57 to .72), functional competencies (\( r^2 \) ranged from .67 to .87), and continuing competencies (\( r^2 \) ranged from .58 to .62). See Table 3-5.

Psychometrics of the Professional Competencies Scale-Revised

Inter-Item Reliabilities

Because the model fit was strong in this revised measure of the Professional Competencies Scale (PCS-R), the reliability and validity of the PCS-R was also examined and compared with the full version PCS reliability and validity.

The inter-item reliability remained strong for the PCS-R. The PCS-R had a Cronbach’s alpha of .84 (\( N = 19 \) items; 9 subscales). The Cronbach’s alpha for the Foundational Competencies subscale of the PCS-R was .76 (\( N = 10 \) items), the Cronbach’s alpha for the Functional Competencies subscale was .82 (\( N = 6 \) items), and the Cronbach’s alpha for the Continuing Competencies subscale was .65 (\( N = 3 \) items).
Convergent Validity

**Foundational Professional Competencies subscale of the PCS-R**

The PCS-R’s Foundational Competencies subscale was not related to the Short Form Version of the Mental Health Inventory ($r = .06, p = .23, N = 410$), but was related to the Therapist Self-Care Scale ($r = .16, p = .001, N = 397$) and the Miville-Guzman Universality-Diversity Scale – Short Form ($r = .41, p < .001, N = 395$).

**Functional Professional Competencies subscale of the PCS-R**

In addition, the Counselor Self-Efficacy Scale related to the Foundational Competencies subscale of the PCS-R ($r = .55, p < .001, N = 368$).

**Continuing Professional Competencies subscale of PCS-R**

The Jefferson Scale of Psychotherapist Lifelong Learning was related to the PCS-R’s Continuing Competencies subscale ($r = .73, p < .001, N = 398$). Additionally, both informal and formal CE were significantly related to the Continuing Competencies subscale of the PCS ($r_{\text{informal CE}} = .21, p < .001, N = 403; r_{\text{formal CE}} = .21, p < .001, N = 398$). Continuing competency was also related to greater involvement in professional activities (e.g., publications, presentations, serving on boards) ($r = .24, p < .001, N = 402$).

In addition to these indicators of convergent validity, the Foundational, Functional, and Continuing Competencies subscale each showed significant relationships with a range of other scales, as well. See Table 3-7 for the complete matrix of correlations and Table 3-8 to compare the convergent validity in the original PCS and the revised PCS.
Overall Professional Competencies Scale-Revised

All measures of convergent validity were related to overall professional competence, except for the Mental Health Inventory ($r = .04, p = .41, N = 389$). The PCS-R was related to the Therapist Self Care Scale ($r = .14, p < .01, N = 377$), the Miville-Guzman Universality-Diversity Scale-Short Form ($r = .39, p < .001, N = 373$), the Counselor Self Efficacy Scale ($r = .54, p < .001, N = 353$), the Jefferson Scale of Psychotherapist Lifelong Learning ($r = .64, p < .001, N = 377$), and participation in formal CE ($r = .20, p < .001, N = 377$) and informal CE ($r = .20, p < .001, N = 382$). Thus, convergent validity for the Professional Competencies Scale was detected between every measure studied with the exception of one.

Additionally, the Foundational, Functional, and Continuing Competencies subscales were correlated with the overall PCS-R ($r = .90, p < .001, N = 395$; $r = .77, p < .001, N = 395$; $r = .68, p < .001, N = 395$, respectively).

Means and Standard Deviations for the Professional Competencies Scale-Revised Items

The distribution of scores was positively skewed, but the distribution demonstrated variation in responses. In addition, every item followed the normal curve. To give a clear picture of the participants’ responses, the means and standard deviations are as follows: first professional identity item ($M = 4.14; SD = .78$), second professional identity item ($M = 4.28; SD = .73$), the first reflective practice item ($M = 4.17; SD = .61$), the second reflective practice item ($M = 4.15; SD = .58$), the first scientific mindedness item ($M = 4.18; SD = .67$), the second scientific mindedness item ($M = 3.95; SD = .85$), the first interpersonal relationships item ($M = 3.82; SD = .74$), the second interpersonal relationships item ($M = 4.18; SD = .52$), the first interdisciplinary
systems item ($M = 4.14; SD = .78$), and the second disciplinary ($M = 4.36; SD = .62$), the first assessment item ($M = 4.39; SD = .64$), the second assessment item ($M = 4.31; SD = .66$), the first intervention item ($M = 4.34; SD = .60$), the second intervention item ($M = 4.34; SD = .60$), the first consultation item ($M = 4.48; SD = .55$), the second consultation item ($M = 4.22; SD = .77$), the learning beliefs and motivation item ($M = 4.16; SD = .85$), attention to learning opportunities ($M = 4.10; SD = .92$), and technical skills in information seeking item ($M = 3.92; SD = 1.04$).
Table 3-1. Correlations among variables in the Professional Competencies Scale

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<th>Diversity Awareness</th>
<th>Self-Efficacy</th>
<th>LLL</th>
<th>Pro. Participation</th>
<th>Formal CE/Year</th>
<th>Informal CE/Year</th>
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*Note.* Total N = 428. * indicates significance at p < .05, ** indicates significance at p < .001. PCS = Professional Competencies Scale; Found. PCS = Foundational Professional Competencies subscale; Funct. PCS = Functional Professional Competencies subscale; Cont. PCS = Continuing Professional Competences subscale; LLL = Jefferson Scale of Psychotherapist Lifelong Learning; Pro Participation = participation in professional activities (e.g., board membership, publications, presentations.)
Figure 3-1. Factor loadings for the second-order confirmatory factor analysis.
Table 3-2. Standardized and unstandardized coefficients for second-order CFA

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<th>Observed Variable</th>
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<th>β</th>
<th>B</th>
<th>SE</th>
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*Note.* CFA = second order confirmatory factor analysis.
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*Note.* CFA = confirmatory factor analysis.
Figure 3-2. First-order confirmatory factor analysis with three factors.
Table 3-4. Exploratory factor analysis structure matrix with oblique rotation

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Note. Numbers in bold denote the highest factor loading for the indicator. The first seven subscales were hypothesized in the literature to be foundational competencies, the next eight subscales were hypothesized to be functional competencies, and the last five items were hypothesized to be continuing competencies.
Figure 3-3. Confirmatory factor analysis, based on EFA findings from a promax rotation.
Table 3-5. Standardized and unstandardized coefficients for CFA based on EFA findings

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<th>$B$</th>
<th>$SE$</th>
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*Note. CFA = confirmatory factor analysis; EFA = exploratory factor analysis.*

Table 3-6. Goodness-of-fit statistics for the Professional Competencies models

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<th>$\chi^2$/df</th>
<th>RMSEA</th>
<th>CFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Second-order CFA</td>
<td>658.214</td>
<td>167</td>
<td>3.941</td>
<td>0.093</td>
<td>0.790</td>
</tr>
<tr>
<td></td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) First-order CFA with 3 factors</td>
<td>590.400</td>
<td>132</td>
<td>4.473</td>
<td>0.101</td>
<td>0.798</td>
</tr>
<tr>
<td></td>
<td>*</td>
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<tr>
<td>c) CFA based on EFA findings</td>
<td>68.79*</td>
<td>32</td>
<td>2.150</td>
<td>0.058</td>
<td>0.964</td>
</tr>
</tbody>
</table>

*Note. * = significant at $p < .001.$
Table 3-7. Correlations among variables in the Professional Competencies Scale-Revised

<table>
<thead>
<tr>
<th></th>
<th>PCS-R</th>
<th>Found. PCS-R</th>
<th>Funct. PCS-R</th>
<th>Cont. PCS-R</th>
<th>Mental Health</th>
<th>Self-Care</th>
<th>Diversity Awareness</th>
<th>Self-Efficacy</th>
<th>LLL</th>
<th>Pro. Participation</th>
<th>Formal CE/Year</th>
<th>Informal CE/Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCS-R</td>
<td>1</td>
<td>.90**</td>
<td>.77**</td>
<td>.68**</td>
<td>.04</td>
<td>.14*</td>
<td>.39**</td>
<td>.54**</td>
<td>.64**</td>
<td>.25**</td>
<td>.20**</td>
<td>.20**</td>
</tr>
<tr>
<td>Found. PCS-R</td>
<td>1</td>
<td>.52**</td>
<td>.48**</td>
<td>.06</td>
<td>.16**</td>
<td>.41**</td>
<td>.51**</td>
<td>.54**</td>
<td>.32**</td>
<td>.18**</td>
<td>.19**</td>
<td>.19**</td>
</tr>
<tr>
<td>Funct. PCS-R</td>
<td>1</td>
<td>.32**</td>
<td>.11*</td>
<td>.08</td>
<td>.21**</td>
<td>.55**</td>
<td>.36**</td>
<td>.03</td>
<td>.09</td>
<td>.09</td>
<td>.09</td>
<td>.09</td>
</tr>
<tr>
<td>Cont. PCS-R</td>
<td>1</td>
<td>-.04</td>
<td>.10*</td>
<td>.28**</td>
<td>.12**</td>
<td>.73**</td>
<td>.24**</td>
<td>.21**</td>
<td>.21**</td>
<td>.21**</td>
<td>.21**</td>
<td>.21**</td>
</tr>
<tr>
<td>Mental Health</td>
<td>1</td>
<td>.11*</td>
<td>.01</td>
<td>.22**</td>
<td>.02</td>
<td>-.05</td>
<td>.05</td>
<td>-.08</td>
<td>.06</td>
<td>.06</td>
<td>.04</td>
<td>.04</td>
</tr>
<tr>
<td>Self-Care</td>
<td>1</td>
<td>.39**</td>
<td>.19**</td>
<td>.19**</td>
<td>-.06</td>
<td>.06</td>
<td>.04</td>
<td></td>
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<td></td>
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<tr>
<td>Diversity</td>
<td>1</td>
<td>.28**</td>
<td>.39**</td>
<td>.12*</td>
<td>.18**</td>
<td>.19**</td>
<td>.19**</td>
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<tr>
<td>Awareness</td>
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<tr>
<td>Self-Efficacy</td>
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<tr>
<td>LLL</td>
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<tr>
<td>Pro. Participation</td>
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<td></td>
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<td></td>
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<tr>
<td>Formal CE/year</td>
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<td></td>
<td></td>
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<td></td>
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<tr>
<td>Informal CE/year</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

Note. Total N = 428. * indicates significance at p < .05, ** indicates significance at p < .001. PCS-R = Professional Competencies Scale-Revised; Found. PCS-R = Foundational Professional Competencies Subscale-Revised; Funct. PCS-R = Functional Professional Competencies Subscale-Revised; Cont. PCS-R = Continuing Professional Competences Subscale-Revised; LLL = Jefferson Scale of Psychotherapist Lifelong Learning; and Pro. Participation = participation in professional activities (e.g., board membership, publications, presentations).
Table 3-8. Convergent validity in the first and last iteration of the Professional Competencies Scale

<table>
<thead>
<tr>
<th>Subscale</th>
<th>PCS</th>
<th>PCS-R</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Foundational Competencies</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mental Health</td>
<td>.06</td>
<td>.06</td>
</tr>
<tr>
<td>Self-care</td>
<td>.19</td>
<td>.16</td>
</tr>
<tr>
<td>Diversity</td>
<td>.46</td>
<td>.41</td>
</tr>
<tr>
<td><strong>Functional Competencies</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Counselor Self-Efficacy</td>
<td>.58</td>
<td>.55</td>
</tr>
<tr>
<td><strong>Continuing Competencies</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifelong Learning</td>
<td>.73</td>
<td>.73</td>
</tr>
<tr>
<td>Commitment to Professional Activities</td>
<td>.24</td>
<td>.24</td>
</tr>
<tr>
<td>Formal CE</td>
<td>.21</td>
<td>.21</td>
</tr>
<tr>
<td>Informal CE</td>
<td>.23</td>
<td>.21</td>
</tr>
</tbody>
</table>

*Note.* PCS = Professional Competencies Scale; PCS-R = Professional Competencies Scale-Revised.
Summary

In this chapter, a summary of the study’s main findings, based on the psychometrics, reliability, and validity of the PCS-R, will appear first, followed by a discussion of the implications of the study’s findings and the PCS-R instrument itself, limitations of the study, and suggestions for future research. The chapter will end with concluding remarks.

Confirmatory Factor Analysis

Results from confirmatory factor analysis based on the EFA findings suggested that the foundational competencies subscale was composed of knowledge, skills, attitudes, and values critical to the field, including 1) professionalism, 2) reflective practice/self-assessment/self-care, 3) scientific knowledge and methods, 4) relationship skills, and 5) interdisciplinary systems skills. The functional competencies subscale was composed of 1) assessment, 2) intervention, and 3) consultation skills. Lastly, the continuing competencies subscale was composed of 1) learning beliefs and motivation to learn, 2) attention to learning opportunities, and 3) technical skills in information seeking. The factor structure of the CFA provides provisional support for the field’s current conceptualization of the three constructs and their importance in relation to professional competence (Fouad et al., 2009; Kaslow et al., 2004; Rodolfa et al., 2005).

It should be noted, however, that although there were distinctions between foundational and functional competencies in the revised version of the PCS ($r = .52$), the original version of the PCS did not draw a clear distinction between foundational and functional competencies ($r = .79$). Future work may benefit from exploring the potential
distinctions between the two factors of professional competence in greater detail. See “Future Research” section of this paper for further discussion of this issue.

Aside from the strong loadings of the PCS-R subscales onto the three distinct factors of professional competence, the CFA model suggested some limited divergent validity, as the relationship between the continuing competencies subscale and the foundational competencies or functional competencies subscale is not as strong ($r = .48$ and .33, respectively) (See Table 3-7). Thus, results of this study suggest that the three professional competence factors are distinguishable constructs from each other, adding some unique contributions to the overall measure of professional competence.

**Formal and Informal Continuing Education and Continuing Competencies**

While most indicators had strong loadings in their assigned CFA factors, the initial analysis that included formal and informal CE, proved to have low loadings onto the continuing competencies dimension of the CFA. Perhaps continuing competencies encompass a broader skill set than simply attending CE courses. Continuing competencies require engaging in, synthesizing, and translating the knowledge from courses into clinical practice. This skill, therefore, goes beyond participating in CE to include an attitude towards, and appreciation for, lifelong learning.

**Psychometrics of the Professional Competencies Scale-Revised**

Schulte and Daly (2009) and Kaslow and colleagues (2009) note that psychometrically sound (reliable and valid) competency assessments are needed in the field of psychology. The present study adds quantitative, empirical data to the theoretical literature on professional competencies in psychology. Findings from this study provide some preliminary evidence that the Professional Competencies Scale-Revised may be used as a brief self-assessment tool for practicing psychologists to
monitor and assess their competencies in a broad range of professional activities, knowledge areas, and skill sets.

The nature of the reliabilities indicate that foundational, functional, and continuing competencies each fall within moderate to high levels of reliability \( (r = .65 \text{ to } .84) \). This finding suggests that the indicators have good levels of internal consistency. Additionally, with the exception of the mental health measure, the significant correlations between the PCS-R and the measures designed to assess convergent validity \( (r = .16 \text{ to } .73, p < .001) \) suggest that the subscales are related to the constructs that have been hypothesized in the literature to be related to the main components of professional competence: foundational functional, and continuing competencies.

The only measure of convergent validity that did not have an explicitly and conceptually equivalent PCS subscale in the revised PCS measure was the Miville-Guzman Universality-Diversity Scale – Short Form (Fuertes, Miville, Mohor, Sedlack, & Gretchen, 2000). Interestingly, even when the diversity subscale of the PCS was eliminated from the PCS-R version of the scale due to low fit quality with the model, the Miville-Guzman Universality-Diversity – Short Form was still significantly and moderately correlated with foundational competencies \( (r_{PCS} = .46; r_{PCS-R} = .41, p < .001; \) see Table 3-8). It may be true that even though diversity is not explicitly measured in the PCS-R, it is conceptually related to other measures in the foundational competencies subscale. It might be plausible, for example, that “openness” is a construct that is already assessed through the PCS-R’s relationship and interdisciplinary systems subscales. The PCS-R’s relationship subscale, for example, included the item, “I effectively negotiate conflictual, difficult and complex relationships including those with
individuals and groups that differ significantly from myself”, and the interdisciplinary systems subscale included the items, “I demonstrate skill in interdisciplinary settings in order to incorporate psychological information into overall team planning and implementation” and “I appreciate and integrate perspective from multiple professions”. These constructs of “openness” and “appreciation of others” may be theoretically related enough to the construct of diversity awareness and appreciation that the PCS-R is able to capitalize on that relationship while also managing to keep the instrument brief.

Implications

Given the nature of the reliability and convergent validity of the PCS-R, the implications of these findings now merit attention.

How to Foster Continuing Competencies

Because results from this study propose that continuing competencies and lifelong learning are important elements of professional practice and general competence in the field, thought should be given as to how best to foster these continuing competencies and how the PCS-R might be helpful in this regard.

Increasing motivation to participate in lifelong learning may be the key to fostering continuing competencies. Indeed, research suggests that successful CE programs include the following aspects: having participants who are motivated to learn, clearly identifying and targeting a key audience, clearly articulating learning objectives, having participants who are cognizant of where their holes are in both information and skills, actively eliciting participation from participants, and including supervised application of the knowledge and skills learned in the course after the course concludes (VandeCreek et al., 1990).
Thus, CE programs can use this information and the PCS-R to their advantage. Interactivity, rather than didactic learning, in continuing education can increase the translation of knowledge to clinical settings (Bloom, 1995; Davis et al., 1999; Griscti & Jacono, 2006; IOM Report, 2010; Swankin, LeBuhn, & Morrison, 2006; VandeCreek et al., 1990). Currently, most CE programs only require ratings of satisfaction, but a more specific assessment that asked participants to reflect on the targeted goals of the program may be helpful. The PCS-R could be used to measure the effectiveness of continuing education programs by asking participants to reflect on specific areas of competence targeted in each CE program. If participants believe that the CE program increased their competence in areas identified by the PCS-R, there may be some quantitative evidence of the program’s effectiveness in specific competency areas.

In addition, CE programs could create courses that are specifically designed to enhance certain competencies, based on the professional competencies model outlined by Rodolfa and colleagues (2005) and Fouad and colleagues (2009). The PCS-R could streamline the process of self-assessment, allowing psychologists to reflect on their growth areas and enabling CE programs to develop courses that are specifically tailored to self-assessed competency needs.

**Additional Potential of the Professional Competencies Scale-Revised**

Aside from the possible usefulness of the PCS-R in relation to enhancing CE, the Professional Competencies Scale-Revised offers several potential advances to the field of professional psychology. Based on the internal consistency and convergent validity of the PCS-R, this study preliminarily suggests that the scale may be used as a quick and broad self-assessment measure for psychologists to assess their strengths and weaknesses and may act as an early gauge for areas of needed remediation.
Potential Usefulness of the Professional Competencies Scale-Revised during Internship Training

In this paper, the PCS-R has been discussed primarily in relation to its usefulness with practicing psychologists, because the current sample consisted nearly entirely of licensed psychologists. However, this instrument may be useful for graduate training programs, as well.

Many current graduate school and internship training models rely on cumulated hours of supervised clinical training and successful coursework completion as quantitative indicators of graduate student success, but, as Fouad and colleagues (2009) point out, these are “likely a poor proxy for actual evaluation of competence” (p. S7). The PCS-R may offer one step in the right direction towards providing a quantitative measure for both graduate students and interns to evaluate their competencies in a broad variety of professional domains.

Training programs have been encouraged to “develop policies and procedures to ensure that trainees in difficulty receive the additional training needed to achieve levels of competence” (Fouad et al., 2009, p. S25). Thus, feedback between training programs and students is essential, and Kaslow and colleagues (2007) concur, suggesting that there should be an ongoing dialogue between supervisors and supervisees regarding their competencies. Although these can be challenging conversations for supervisors to have with their supervisees (Hoffman, Hill, Holmes, & Freitas, 2005), standardized assessments, such as the PCS-R, may prove beneficial in this process.

The PCS-R might facilitate communication between graduate students and their supervisors and might provide students with greater clarity regarding whether or not they are ready to proceed to the next level of their training experience or if they need to
continue developing necessary knowledge, skills, attitudes, values, and capabilities. The PCS-R could therefore provide cleaner feedback to supervisees and clearer consistency between different supervisors. This assessment measure would also allow students to have greater clarity regarding what competencies are expected of them at stages of their career. Additionally, this type of communication could foster lifelong learning, imprinting from early in the students’ graduate career the importance and ethical imperative of self-assessment and continual learning (see also Kaslow et al., 2009).

Nonetheless, these implications hinge on the assumption that the PCS-R, or an adapted version of it, would be applicable to graduate students. Questions about the current measure’s applicability to different populations will be addressed below, in both the “Limitations and Delimitations” and “Future Research” sections.

Limitations and Delimitations

The findings and implications from this study must be interpreted in relation to the study’s limitations and delimitations. As a self-report survey, it may have been subject to participant response bias. It is also possible that participants may not have been able to accurately assess their professional competencies in the self-report measure. Indeed, the skill of self-assessment is one of the foundational professional competencies for the field of psychology that some may not possess. In addition, demand characteristics or memory reconstruction could have affected the interpretability of the results (Haeffel & Howard, 2010).

Furthermore, as an exploratory instrument, the value of the Professional Competencies Scale-Revised can only be determined by its subsequent future
research. Its value therefore is only promissory at this point, and only future efforts will be able to determine its potential use.

Additionally, there may be alternative professional competencies for psychologists that were not addressed by the present version of the professional competencies measure. Because brevity in assessments was required to ensure participation, the measures may not fully encompass the constructs at large. Because each subscale in the professional competencies measured only included two items, some important aspects of each subscale may have been left untapped.

Delimitations must also be discussed. In an effort to focus the study, the present study only included participants who were licensed psychologists, and, on average, the psychologists had been in practice for approximately 25 years and most held Ph.D. degrees. Because of this, the findings and assessments themselves may not be applicable to graduate practicum or internship students. Relatedly, the large majority of participants were Caucasian/White psychologists, so it was not appropriate to analyze potential ethnic differences, given the small proportion of ethnic/racial minority participants. Thus, the question of the applicability of the PCS-R for different ethnic groups is still unanswered. Furthermore, only participants with no missing data were included in the CFA models. Thus, a self-selection bias may have occurred and may not be representative of a larger population of psychologists.

It is also quite possible that many variables play an important role in the development, maintenance and enhancement of competencies, and there may be other important variables that affect professional competence and were not assessed or retained in the PCS-R. The variables assessed in the present study were limited and
carefully chosen based on the empirical and theoretical literature in the field, which suggested that they may impact competence and therapeutic outcomes.

Lastly, because it has been hypothesized in the literature that the foundational and functional competencies are broad competencies that every professional psychologist should have, the Professional Competencies Scale-Revised did not include a “not applicable” option. However, some psychologists who participate in mostly assessments may participate in very little outreach or supervision, and may not feel confident in their competencies in those areas simply because they no longer practice in those areas. Future versions of this scale may benefit from the inclusion of a “not applicable” option.

However, this brings to mind the question of whether or not each competency proposed by Fouad and colleagues (2009) should be expected of all professional psychologists. It highlights the ever-present dilemma of professional psychologists, who navigate through a professional world that pulls them to be both generalists and specialists (see Neimeyer et al., 2012b). The current version of the PCS-R assumes that psychologists should be competent in each of the foundational, functional, and continuing competency domains, but feedback from participants suggested that they did not feel competent in certain functional areas, because they no longer practiced in those areas (e.g., assessment, consultation, teaching, research, supervision).

**Future Research**

While the main findings, implications, and limitations and delimitations have been discussed, future research should also be explored. Future work might further address teasing apart potential distinctions between the foundational, functional, and continuing competencies constructs. There may be developmental differences in functional
competencies that could be observed with a less-experienced cohort, such as psychology majors, graduate students, graduate interns, or even postdoctoral psychologists (see Fouad et al., 2009). Thus, results may indicate a conceptually coherent sequencing of competencies, with foundational competencies showing developmental gains first, followed by growing functional competencies.

**Longitudinal Internship Study**

Several studies may help to tease out potential distinctions between the foundational and functional competencies. For example, a longitudinal, year-long study that assessed professional competencies at the beginning and the end of the graduate student internship year could provide better clarity as to the ways in which foundational and functional competencies may be independent constructs.

It would be expected that foundational competencies, which include professional knowledge, skills, attitudes, and values (e.g., scientific knowledge and self-care), would remain somewhat unchanged, while functional competencies, which include the abilities to carry out the professional roles (e.g., assessment and intervention competence), may increase, or at least increase at a faster rate than foundational competencies, given that so much of the internship year is grounded in clinical practice (see APA, 1947, p. 540). Indeed, the pre-doctoral internship has been defined as an “experience occurring after completion of didactic coursework [i.e., foundational competencies] and appropriate practica and before the granting of the doctorate degree” (emphasis mine) (Holloway & Roehlke, 1987, p. 210).

To eliminate the current study’s potential confounding variable of self-assessment, *supervisors* could evaluate their interns’ professional competencies at the
start and the end of their internship year using the 19-item Professional Competencies Scale developed in this study.

In addition, using the APPIC and ACCTA listservs, interns could be invited to participate in a study that invited them to self-assess their competencies at the beginning and end of their internship year and inquired about their participation in a number of activities related to functional professional competencies. If a student interns at a site that emphasizes assessment, for example, or supervision experience, it would be expected that the student would experience an increase in their functional competencies over the year, as two components of functional competencies are assessment and supervisory skills.

**Longitudinal Development of Competencies Study**

Alternatively, a longitudinal study could be performed to assess developmental changes in foundational and functional competencies at an even earlier stage of development. Undergraduate students who plan to attend graduate school in clinical or counseling psychology could be given the Professional Competencies Scale-Revised and asked to complete it before beginning graduate school. The assessment could be administered to them again at a later point in graduate school. While undergraduate psychology majors may have some foundational competencies (e.g., relationship skills), the functional competencies (e.g., assessment abilities, intervention skills) would likely increase across the course of their graduate training.

**Cross-Sectional Study of Undergraduates, Graduate Students, and Licensed Psychologists**

One last developmental follow-up to the present study might be a cross-sectional study that would compare undergraduate psychology majors to graduate student interns
and licensed psychologists. Indeed, Fouad and colleagues (2009) suggest that there may be different competency “benchmarks” for professionals in differing stages of their development.

In addition to the studies suggested above, this cross-sectional study could potentially tease out distinctions between foundational and functional competencies. If foundational and functional competencies are not interconnected, psychology majors should score lower in foundational and functional competencies than the graduate students or licensed psychologists, but, given that they are learning about foundational competencies (e.g., diversity awareness, scientific mindedness) in their courses, psychology majors may have higher foundational competencies than functional competencies at this point in their development. At the internship level, it might be expected that interns would score higher on foundational and functional competencies than psychology majors, but lower on both than practicing psychologists. However, because interns, on average, have had less clinical experience than licensed psychologists, they may have stronger foundational (knowledge) competencies than functional (capability) competencies, a finding that may provide some discriminant validity between the two constructs. Licensed psychologists, on the other hand, might be expected, as was discovered in the present study, to have both high foundational and high functional competencies.

In fact, Melchert and colleagues (1996) discovered statistically significant differences in counselor self-efficacy based on the participant’s level of training (e.g., first year master’s student, second year master’s student, third through sixth year doctoral students, and psychologists) and the participant’s amount of clinical experience.
(none to 15+ years). Psychologists were found to have significantly greater counselor self-efficacy than graduate students, and there were even statistically significant differences between the counselor self-efficacy of students in different phases of the graduate students’ training programs. These scores demonstrate a developmental sequencing of professional self-efficacy, and the same findings might be true in a study of professional competence. In the present study, counselor self-efficacy was significantly correlated with functional professional competencies ($r = .55$), a finding that suggests that developmental differences may also be observed when examining specific professional competencies.

Nonetheless, as the current study suggests, foundational and functional competencies may be so interconnected that it is difficult, and perhaps even unnecessary, to draw distinctions between the two constructs. Perhaps foundational and functional competencies should be seen as necessary for each other; that is, to have functional competencies (the ability to carry out the tasks of professional psychologists) a psychologist must also have foundational competencies (the knowledge, skills, attitudes, and values important in the field). And, vice versa, certain functional competencies, such as intervention experience, may aid in foundational competencies, such as relationship skills. Thus, although the existing literature suggests that foundational and functional competencies have distinct qualities to them (Fouad et al., 2009; Rodolfa et al., 2005), the potential isomorphism between the two competency sets seems to suggest that the two types of professional competencies should be seen as mutually compatible; each is necessary for the other.
Building on this, the finding that foundational and functional competencies may need to be seen as working in conjunction with each other suggests that graduate training programs and continuing education programs should cultivate the connection between the two competency domains. Graduate programs should focus on developing the knowledge, skills, attitudes, and values and the capability to carry out professional activities in conjunction with each other. To do so, graduate programs are encouraged to create coursework that entails not only knowledge-based didactic, lecture learning, but also role plays and discussions, for example, to practice clinical skills and capabilities.

**Understanding the Development of Professional Competencies and Its Applicability to Training**

Picking up on the challenge of understanding the developmental trajectory of the three competency domains, Fouad and colleagues (2009) and Rodolfa and colleagues (2005) question whether competency domains are hierarchical and linear in structure. This question could be explored through a longitudinal assessment of developmental changes in professional competency domains during a sample of students’ graduate school years. If certain competency domains build on each other, this knowledge could be used to improve graduate training programs by providing a logical, empirically valid sequence of competency topics in training.

**Test-Retest Reliability of the Professional Competencies Scale-Revised**

The current study suggests that professional competencies are composed of general skills that are transferrable from one situation to another, but as Schulte and Daly (2009) point out, psychologists can differ in their clinical effectiveness depending on a number of client factors, a psychologist’s caseload. Schulte and Daly’s article
highlights the need for test-retest reliability assessments to ensure that the PCS-R is applicable in various settings, in various points of a psychologist’s career, and with various clients.

**Predictive Validity of the Professional Competencies Scale-Revised**

Additionally, Fouad and colleagues (2009) note that the Competency Assessment Toolkit, which is what the Professional Competencies Scale and its revised version were built upon, “has been received positively and appears to have face validity, [but] future directions will need to include assessment of its utility in application and predictive validity” (p. S25). Following Fouad and colleagues’ call for predictive validity, the PCS-R should be examined to determine how well it predicts a psychologist’s actual competencies. This could be accomplished by comparing a professional psychologist’s scores on the PCS-R to clinical outcomes or a supervisor’s rating of the psychologist’s competencies.

**Challenges of Self-Assessing Competencies and What Can Be Done About It**

Aside from studies of test-retest reliability and predictive validity, to study the effects of potential self-assessment biases in the PCS-R, 360 degree evaluations could be utilized, along with other assessment methods, such as the ones proposed by Kaslow and colleagues (2009). Scores on the PCS-R should be similar to scores on other competency measures by others. The implementation of sound competency assessments should likely involve several methods of competency assessment, which could include the PCS-R (see Schulte & Daly, 2009; Sharpless & Barber, 2009).

**Conclusions**

These and other potential extensions of this line of research may contribute to a growing attention to the empirical study of professional competence. Because the study
of professional competence must await the development of assessment tools that are adequate to the task, future research should first concentrate on the replication and extension of the current findings, examining the psychometric properties of the PCS-R and determining whether it provides sufficient predictive validity to be useful to the field. Future research, including some of the ideas discussed in this chapter, are reliant on future iterations of this instrument. If work continues to support the reliability and validity of this instrument, then the PCS-R could be used as a succinct measure of self-assessment for professional psychologists, for graduate training programs, or even for continuing education course development. Assessing, remediating, and building upon professional competencies are critical to ethical practice and clinical outcomes. The Professional Competencies Scale-Revised may allow psychologists to accomplish this in a brief and broad measure. Rodolfa, Schaffer, and Webb (2010) note that the cultivation of competence is predicated on the assessment of competence. The purpose of this study was to advance the latter in support of the former. As the field of professional psychology continues to embrace a culture of competence, it also enhances ethical practice, professionalism, and client welfare. The development of the Professional Competency Scale-Revised constitutes one incremental step in support of this movement towards competency in the field of professional psychology.
APPENDIX A
PROFESSIONAL COMPETENCIES SCALE

To what extent do you agree with each of the following in relation to your practice…

Response Options
1: Strongly disagree
2: Disagree
3: Neither agree nor disagree
4: Agree
5: Strongly agree

FOUNDATIONAL COMPETENCIES SUBSCALES

Professionalism Scale
1. I contribute to the development and advancement of the profession and colleagues.
2. I demonstrate integration of science in my professional practice.

Reflective Practice/Self-Assessment/Self-Care Scale
1. I accurately access my own strengths and weaknesses and seek to prevent or ameliorate the impact of any weaknesses on my professional functioning.
2. I recognize when new or improved competencies are required for effective practice.

Scientific Knowledge and Methods Scale
1. I routinely utilize scientific knowledge and skills in the solution of problems.
2. I readily present my own work for the scrutiny of others.

Relationships Scale
1. I effectively negotiate conflictual, difficult and complex relationships including those with individuals and groups that differ significantly from myself.
2. I accept, evaluate, and implement feedback from others.

Individual and Cultural Diversity-Awareness Scale
1. I routinely articulate, understand, and monitor my own cultural identity in relation to work with others.
2. I regularly adapt my professional behavior in a culturally sensitive manner, as appropriate to the needs of the client, in order to improve client outcomes and avoid harm.

**Ethical Legal Standards and Policy Scale**

1. I integrate an understanding of ethical-legal standards and policies when performing my professional responsibilities.

2. I take responsibility for my continuing professional development.

**Interdisciplinary Systems Scale**

1. I demonstrate skill in interdisciplinary settings in order to incorporate psychological information into overall team planning and implementation.

2. I appreciate and integrate perspectives from multiple professions.

**FUNCTIONAL COMPETENCIES SUBSCALES**

**Assessment Scale**

1. My interviews and reports lead to the formulation of appropriate diagnoses and treatment plans.

2. I interpret assessment results accurately, taking into account the limitations of the evaluation method.

**Intervention Scale**

1. I accurately assess presenting issues, taking into account the larger life context, including diversity issues.

2. I select and implement interventions appropriate for the presenting issue(s).

**Consultation Scale**

1. I demonstrate the ability to gather information necessary to answer referral questions.

2. I prepare clear, useful consultation reports and recommendations to all appropriate parties.
Research/Consultation Scale

1. I engage in systematic efforts to increase my knowledge base of psychology through implementing and reviewing research.

2. I evaluate the progress of my own activities and use this information to improve my own effectiveness.

Supervision Scale

1. I demonstrate adaptation of my own professional behavior in a culturally sensitive manner as appropriate to the needs of the supervision context and all parties in it.

2. I spontaneously and reliably identify complex ethical and legal issues in supervision, and analyze and proactively address them.

Teaching Scale

1. I demonstrate efforts to evaluate the teaching effectiveness of my targeted skill sets.

2. I articulate concepts to be taught and discuss related research/empirical support.

Management/Administration Scale

1. I respond promptly to organizational demands.

2. I demonstrate a capacity to develop a system for evaluating supervisees/staff/employees.

Advocacy Scale

1. I promote client self-advocacy.

2. I develop alliances with relevant individuals and groups to promote change.

CONTINUING COMPETENCIES SUBSCALE

Psychologist Lifelong Learning Scale (Measures 3 Factors: Learning Beliefs and Motivation, Attention to Learning Opportunities, and Technical Skills in Information Seeking)

1. Rapid changes in science require constant updating of knowledge and development of new professional skills.
2. I routinely attend continuing education programs to improve client/patient care.

3. I routinely search computer databases to find out about new developments in my specialty.
APPENDIX B
MENTAL HEALTH INVENTORY

Response Options
1: All of the time
2: Most of the time
3: A good bit of the time
4: Some of the time
5: A little of the time
6: None of the time

1. During the past month, how much of the time were you a happy person?

2. How much of the time, during the past month, have you felt calm and peaceful?

3. How much of the time, during the past month, have you been a very nervous person?

4. How much of the time, during the past month, have you felt downhearted and blue?

5. How much of the time, during the past month, did you feel so down in the dumps that nothing could cheer you up?
APPENDIX C
THERAPIST SELF-CARE SCALE

Over the previous year, how often have you...

Response Options
1: Very Rarely / Never
2: Rarely
3: Sometimes
4: Often / Very Often

1. Engaged in a hobby or reading for pleasure.
2. Taken pleasure trips or vacations.
3. Attended movies, artistic events, or museums.
4. Engaged in physical exercise.
5. Participated in peer supervision.
6. Played recreational games.
7. Practiced meditation or prayer.
8. Engaged in volunteer work for a worthy cause.
9. Been a client in personal therapy.
10. Received massage or chiropractic services.
11. Attended church services.
12. Kept a personal diary.
APPENDIX D
MILIVILLE-GUZMAN UNIVERSALITY-DIVERSITY SCALE-SHORT FORM

The following items are statements using several terms that are defined below for you. Please refer to these definitions throughout the rest of the questionnaire.

Culture refers to the beliefs, values, traditions, ways of behaving, and language of any social group. A social group may be racial, ethnic, religious, etc.

Race or racial background refers to a sub-group of people possessing common physical or genetic characteristics. Examples include White, Black, American Indian, etc.

Ethnicity or ethnic group refers to a specific social group sharing a unique cultural heritage (e.g., customs, beliefs, language, etc.). Two people can be of the same race (i.e., White), but from different ethnic groups (e.g., Irish-American, Italian-American, etc.).

Country refers to groups that have been politically defined; people from these groups belong to the same government (e.g., France, Ethiopia, United States). People of different races (White, Black, Asian) or ethnicities (Italian, Japanese) can be from the same country (United States).

Instructions: Please indicate how descriptive each statement is of you by circling the number corresponding to your response. This is not a test, so there are neither right nor wrong, good nor bad answers. All responses are anonymous and confidential.

Response Options
1: Strongly disagree
2: Disagree
3: Disagree a little bit
4: Agree a little bit
5: Agree
6: Strongly agree

1. I would like to join an organization that emphasizes getting to know people from different countries.
2. Persons with disabilities can teach me things that I could not learn elsewhere.
3. Getting to know someone of another race is generally an uncomfortable experience for me.
4. I would like to go to dances that feature music from other countries.
5. I can best understand someone after I get to know how he/she is both similar to and different from me.
6. I am only at ease with people of my race.

7. I often listen to music of other cultures.

8. Knowing how a person differs from me greatly enhances our friendship.

9. It’s really hard for me to feel close to a person from another race.

10. I am interested in learning about the many cultures that have existed in this world.

11. In getting to know someone, I like knowing both how both he/she differs from me and is similar to me.

12. It is very important that a friend agrees with me on most issues.

13. I attend events where I might get to know people from different racial backgrounds.

14. Knowing about the different experiences of other people helps me understand my own problems better.

15. I often feel irritated by persons of a different race.
APPENDIX E
COUNSELOR SELF-EFFICACY SCALE

Rate your counselor self-efficacy or “ability to do the following counseling skills.”

Response Options
1: Disagree Strongly
2: Disagree
3: Neutral / Uncertain
4: Agree
5: Agree Strongly

1. My knowledge of personality development is adequate for counseling effectively.
2. My knowledge of ethical issues related to counseling is adequate for me to perform professionally.
3. My knowledge of behavior change principles is not adequate.
4. I am not able to perform psychological assessment to professional standards.
5. I am able to recognize the major psychiatric conditions.
6. My knowledge regarding crisis intervention is not adequate.
7. I am able to effectively develop therapeutic relationships with clients.
8. I can effectively facilitate client self-exploration.
9. I am not able to accurately identify client affect.
10. I cannot discriminate between meaningful and irrelevant client data.
11. I am not able to accurately identify my own emotional reactions to clients.
12. I am not able to conceptualize client cases to form clinical hypotheses.
13. I can effectively facilitate appropriate goal development with clients.
14. I am not able to apply behavior change skills adequately.
15. I am able to keep my personal issues from negatively affecting my counseling.
16. I am familiar with the advantages and disadvantages of group counseling as a form of intervention.

17. My knowledge of the principles of group dynamics is not adequate.

18. I am able to recognize the facilitative and debilitative behaviors of group members.

19. I am not familiar with the ethical and professional issues specific to group work.

20. I can function effectively as a group leader/facilitator.
APPENDIX F
JEFFERSON SCALE OF PSYCHOTHERAPIST LIFELONG LEARNING

Response Options
1: Strongly disagree
2: Disagree
3: Agree
4: Strongly agree

1. Rapid changes in science require constant updating of knowledge and development of new professional skills.

2. One of the important goals of school is to develop students' lifelong learning skills.

3. I recognize my need to constantly acquire new professional knowledge.

4. I have never been bored.

5. I believe I would fall behind if I stopped learning about new developments in my profession.

6. Lifelong learning is a professional responsibility of all psychologists.

7. I enjoy reading articles in which issues of my professional interests are discussed.

8. I take every opportunity to gain new knowledge/skills that are important to my profession.


10. I routinely attend annual meetings of professional organizations.

11. Searching for an answer to a question is, in and by itself, rewarding.

12. I routinely search computer databases to find out about new developments in my specialty.

13. I never have any trouble understanding anything that I read that first time I read it.

14. I read professional journals at least once every week.

15. I always make time for self-directed learning, even when I have a busy practice schedule and other professional and family obligations.
16. My preferred approach in finding an answer to a question is to search the appropriate computer databases.

*Note.* Items 1-3 and 5-7 comprise Factor 1 (Learning Beliefs and Motivation), items 8-11 comprise Factor 2 (Attention to Learning Opportunities), and items 12-16 comprise Factor 3 (Technical Skills in Information Seeking). Items 1, 9, and 12 are included in the Professional Competencies Scale (Continuing Competencies Subscale). Items 4 and 13 are Social Desirability items.
APPENDIX G
DEMOGRAPHICS

1. What is your gender?
   a. Female
   b. Male
   c. TransM2F
   d. TransF2M
   e. Other, please specify

2. Please choose the option that best represents your racial/ethnic identity:
   a. African American / Black
   b. American Indian / Alaska Native / Native American
   c. Asian American / Pacific Islander
   d. Arabic American / Middle Eastern
   e. Hispanic or Latina/o
   f. East Indian or Indian American
   g. Caucasian American or White
   h. Biracial or Multiracial American
   i. Other, please specify
   j. Decline to say

3. What year did you receive your degree? (ex: 1985)

4. What is your degree in?
   a. Clinical Psychology
   b. Counseling Psychology
   c. Counselor Education
   d. Industrial / Organizational Psychology
   e. School Psychology
   f. Other, please specify

5. What is your highest professional degree?
   a. Ed.D.
   b. M.Ed.
   c. M.S. or M.A.
   d. M.S.W.
   e. Ph.D.
   f. Other, please specify

6. Which of the following models were you trained in?
   a. Clinical Science
   b. Practitioner-Scholar
   c. Scientist-Practitioner
   d. Other, please specify
7. Are you currently licensed?
   a. Yes
   b. No

8. If “yes,” what is your primary state / province of licensure?

9. Does your state mandate continuing education?
   a. Yes
   b. No

10. Does your state mandate continuing education in ethics?
    a. Yes
    b. No

11. Are you a member of your state Psychological Association?
    a. Yes
    b. No

12. Are you board certified through ABPP (American Board of Professional Psychology)?
    a. Yes
    b. No

13. How many FORMAL continuing education credits do you usually complete, on average, each year?

14. How many hours of INFORMAL professional development do you complete, on average, each year, APART from formal CE courses, per se (e.g., reading professional books or journals, doing online searches, consulting with colleagues, etc.)?

15. My primary work setting is…
    a. Community agency
    b. Hospital or medical setting
    c. Group practice
    d. Independent practice
    e. University academic department
    f. University counseling center or mental health center
    g. Other

16. Have you ever…
    a. Published a paper in a peer-reviewed journal?
       i. Very often
       ii. Often
       iii. Sometimes
iv. Rarely / never

b. Presented a paper before a national professional group?
   i. Very often
   ii. Often
   iii. Sometimes
   iv. Rarely / never

c. Received a professional award or honor?
   i. Very often
   ii. Often
   iii. Sometimes
   iv. Rarely / never

d. Served on a professional committee?
   i. Very often
   ii. Often
   iii. Sometimes
   iv. Rarely / never

e. Served as a reviewer for a professional journal?
   i. Very often
   ii. Often
   iii. Sometimes
   iv. Rarely / never

17. The “half-life” of professional knowledge has been described as the time after completion of professional training when, because of new developments, practicing professionals have become roughly half as competent as they were upon graduate to meet the demands of their profession. Considering your current workplace and professional activities, what do you regard the current half-life of professional knowledge to be in your practice? (e.g., # years)

18. Considering your current workplace and professional activities, what do you regard the half-life of professional knowledge to be in your practice in ten years?
APPENDIX H
PROFESSIONAL COMPETENCIES SCALE-REVISED

To what extent do you agree with each of the following in relation to your practice…

Response Options
1: Strongly disagree
2: Disagree
3: Neither agree nor disagree
4: Agree
5: Strongly agree

FOUNDATIONAL COMPETENCIES SUBSCALES

Professionalism Scale

1. I contribute to the development and advancement of the profession and colleagues.
2. I demonstrate integration of science in my professional practice.

Reflective Practice/Self-Assessment/Self-Care Scale

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**CONTINUING COMPETENCIES SUBSCALE**

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1. Rapid changes in science require constant updating of knowledge and development of new professional skills.

2. I routinely attend continuing education programs to improve client/patient care.

3. I routinely search computer databases to find out about new developments in my specialty.
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BIOGRAPHICAL SKETCH

Jennifer M. Taylor was born in Bloomington, Indiana. Jennifer graduated as valedictorian of her class from Bloomington High School North in 2003. She graduated summa cum laude with her B.S. in psychology with a minor in business administration at the University of Florida in 2006.

She received her M.S. and Ph.D. in counseling psychology from the University of Florida. Her research focuses on professional development and competencies, lifelong learning, continuing education, and mentoring.

Jennifer is the 2012 recipient of the Outstanding Counseling Psychology Graduate Student Award from the University of Florida, the 2011 recipient of the university-wide Graduate Student Teaching Award for the University of Florida, and the 2011 recipient of the Pearson Education Outstanding Graduate Student Teaching Award. Aside from her research and teaching experience, Jennifer has enjoyed professional memberships as a charter member of the University of Florida’s Counseling and Wellness Center Advisory Board, the 2009-2012 APAGS Division 17 Campus Representative, and a representative of the student-run Diversity Affirmation and Awareness Committee.

Jennifer completed her pre-doctoral internship at the Ohio State University’s Counseling and Consultation Services. Jennifer looks forward to continuing her passion for research, teaching, counseling, and social justice.