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A Competency Model of Psychology Practice: Articulating Complex Skills and Practices

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As in all professions, the practice of psychologists is based on the acquisition and application of knowledge, skills, and behaviors that are often conceptualized as competencies. As students progress through their curricula, they might approach each individual unit as a discrete set of skills embedded in different coursework units. However, these discrete skills and competencies may not reflect the diverse, interrelated, and complex nature of the practice of psychology. This project sought to identify the key competencies required to practice psychology and to present these competencies in a model that demonstrates how melding these competencies together better reflects authentic, real-world practice. The methodology comprised two stages. Pre-existing data, including detailed postgraduate course content, graduate course evaluations, and destinations such as vocational outcomes, from two universities were distributed to eight Subject Matter Experts (SMEs) for consideration. During the first stage of the study, the eight SMEs engaged in a modified Delphi process designed to explore psychology competencies. The SME panel also answered several rounds of questions at first face-to-face, and later online. From these sessions, a draft psychology competency model was developed, including both competencies that are underpinned by the scientific-practitioner process, and meta- competencies. During the second stage of the study, practitioners and academics from various areas of psychology practice participated in a series of workshops and further refined the competency model. Future research is needed to validate the model. Elucidation of competencies in psychology is imperative and has ramifications for psychology regulation, training, and practice.

Keywords: psychology workforce, curriculum, competency, competency modeling, psychology practice, Delphi technique

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INTRODUCTION

Standards of competency represent the foundation for the credibility of any profession. However, despite the central importance of competencies, the discipline of psychology has struggled to identify, define, and operationalize the competencies required by registered psychologists (Nash and Larkin, 2012). To be able to do so would be valuable in educating post graduate psychology students and enable determining where remedial training may be required, thereby increasing quality of training and ultimately public safety.

Within the discipline of psychology, focus has shifted from demonstrating discrete learning to acquiring competencies through psychology training programs (Kaslow, 2004; Lichtenberg et al., 2007; Kenkel, 2009; Voudouris, 2009, 2010; Hatcher et al., 2013). In the applied setting, this shift has been realized *via* assessments of competencies that reflect real-world practices (e.g., *via* simulations) (Leigh et al., 2007; Lichtenberg et al., 2007). Notably, accurate simulations and real-world assessments hinge on the accurate identification of competencies.

Competencies have been defined as "a measurable pattern of knowledge, skill, abilities, behaviors, and other characteristics that an individual needs to perform work roles or occupational functions successfully" (Rodriguez et al., 2002, p. 310). Thus, competencies specify what individuals need to do and the behaviors they should undertake for certain activities, tasks or roles to perform their professional responsibilities effectively (Schippmann et al., 2000). Competencies are often combinations of the knowledge, skills, and abilities necessary to perform a given role (Campion et al., 2011). In practice, various competencies often overlap and cannot be acquired or attained easily in a linear fashion.

Prahlad and Hamel (1990) first introduced the concept of establishing core competencies. A multitude of authors have subsequently proposed various combinations of core competencies for psychology (e.g., Rodolfa et al., 2005; Fouad et al., 2009); however, until recently, no unified set of core competencies existed.

International Declaration of Core Competencies in Professional Psychology

In 2016, the International Association of Applied Psychology (IAAP) and International Union of Psychological Science (IUPsyS) (2016) identified and declared a set of internationally endorsed competencies for professional psychology. In doing so, the International Association of Applied Psychology (IAAP) and International Union of Psychological Science (IUPsyS) (2016) had several aims. Specifically, they sought to create a coherent global professional identity, provide an international recognition system for equivalence in professional preparation systems (i.e., *via* program accreditation and professional credentialing), and regulate professional competence and conduct. **Table 1** sets out the competencies identified by the International Association of Applied Psychology (IAAP) and International Union of Psychological Science (IUPsyS) (2016).

Garnering international agreement on psychology core competencies could strengthen the psychology profession, and facilitate a global understanding and roadmap for communication, assessment, and benchmarking in the profession. The IAAP list represents the first effort to capture the essential knowledge and skills required of practitioners. Its simplicity ensures it is easily communicated. However, although representing core competencies as lists can be useful, concern arises in relation to competency lists, as such lists may fail to sufficiently reflect the complexities of actual psychology practice. Additionally, competency lists could influence teaching, as traditional approaches for teaching competencies have focused on the minutiae. Consequently, competency lists may not necessarily reveal the intricacies of current psychology practice (Neubert et al., 2015; Sliter, 2015). In Australia, competencies have also been presented as lists (for example, see Psychology Board of Australia, 2011).

TABLE 1 | Core competencies in professional psychology [International Association of Applied Psychology (IAAP) and International Union of Psychological Science (IUPsyS), 2016].

Competencies	
Psychological knowledge and skills underpinning the core competencies	
KN:	possess the necessary knowledge
SK:	possesses the necessary skills
Professional behavior competencies	
PE:	practices ethically
AP:	acts professionally
ER:	relates appropriately to clients and others
WD:	works with diversity and demonstrates cultural competence
EP:	operates as an evidence-based practitioner
SR:	reflects on work
Professional activities competencies	
SG:	sets relevant goals
PA:	conducts psychological assessments and evaluations
PI:	conducts psychological interventions
CO:	communicates effectively and appropriately

Thus, a competency model, or a representation of psychology practice that articulates the combination and interrelatedness of competencies is needed. The value of theoretical models in informing psychology practice has been discussed in various articles [e.g., Fouad et al. (2009), Hunsley and Barker (2011), Barlow (2012), Barker and Hunsley (2013)] and progress in this area is discussed further below.

Competency Models

A competency model is a framework for defining the skills and knowledge requirements of an occupation. It represents a collection of the requisite skills, and the combination of these, that jointly define successful job performance (Baczyriska et al., 2016). A model extends the idea of a list of competencies and because it proposes how the individual competencies relate to each other. An organizational psychologist first introduced the term competency modeling in the mid-1970s (McClelland, 1973). Subsequently, organizations have been using competency-based methodologies and approaches for many years. Over the last 40 years, competency modeling and the use of competencies to describe the characteristics necessary for effective performance have become increasingly popular (Dai and Liang, 2012; Sliter, 2015).

Researchers and educators within psychology have proposed various competency models. Rodolfa et al. (2005) outlined six foundational (first dimension) and six functional (second dimension) competencies in their "competency model." A third dimension (i.e., stage of professional development) depicts foundational and functional competency development over the career of professional psychologists. However, while the cube model offers a structural representation of competency domains within psychology, it has been criticized for failing to reflect the fluidity or the various pathways of developing the competencies (Nash and Larkin, 2012). Indeed Rodolfa et al. (2014) later

identified a number of deficiencies in the much cited cube model, including the general complexity of the model. In Australia, a pragmatic and simplified version of the "competency cube" has been offered (Gonsalev and Calvert, 2014). Other models (e.g., the interlocking rings model and the Pyramid Model) have achieved this (see, Nash and Larkin, 2012), but have failed to focus on competencies.

If evident, higher order competencies (Baczyriska et al., 2016), or meta-competencies [e.g., Roth and Pilling (2008), National Prescribing Service (2012), and Gonsalev and Calvert (2014)] are sometimes incorporated in a competency model. The selection of an appropriate methodology is an important consideration in establishing a competency model. The incorporation of existing materials (Campion et al., 2011) and the consideration of other models and philosophical approaches to psychology training (e.g., a scientist–practitioner focus) (see, Munoz et al., 2015) appear to have been conspicuously omitted from many current competency models and lists.

Methodological concerns may have undermined the evidence-base for competency modeling leading to research in competency modeling lagging (Lievens et al., 2004). To address these concerns, Lievens et al. (2004) empirically examined the quality of competency inferences. They showed that the use of Subject Matter Experts (SMEs) provides high quality competency inferences compared to the use of less experienced raters. They also found that blending competency modeling with task-related information resulted in the highest inter-rater reliability. In general, a multi-method approach for competency identification and modeling has been supported in order to increase reliability of methods used (Rodriguez et al., 2002).

Some progress has been achieved *via* research on psychology competencies. However, a recent review (Zlatkin-Troitschanskaia et al., 2016) concluded that there has been a substantial lack of research on the assessment practices that should ideally be linked to competencies and real-world practice in higher education, especially in relation to domain specific and generic competencies. The review also showed that the measurement methods for competency assessment are inadequate (Zlatkin-Troitschanskaia et al., 2016).

Clearly, the more that is understood about competencies, the better the profession will become at identifying, assessing, and managing incompetence (Kaslow et al., 2007). Given the obvious link between competencies and assessments for both educators and regulators, it is important that a psychology competency model be established that reflects real-world practice.

Aim and Research Question

The IAAP core competencies and proposed models (i.e., cube model) are useful, but the utility of these approaches is limited. Furthermore, efforts to develop more comprehensive models have been undermined by methodological issues, such as inadequate expert review. Given this, we develop a comprehensive, novel model informed and validated by expert review. This project sought to use SMEs (both practitioner and academics) and graduate task-related information to identify the core generic competencies required for postgraduate psychology professional practice. A systematic, empirical and multi-method approach was adopted. The following research question was addressed: *can a competency model for psychologists be developed that reflects the complex and diverse nature of psychology practice?*

MATERIALS AND METHODS

Participants

There were two groups of participants. The first group comprised eight participants; two had previous expertise of over 20 years each, in establishing competency models and six were senior psychology academics (from three different universities). Five of the six academics were also registered psychologists. One of the academics was a placement supervisor. This group participated in the modified Delphi process. The second group of participants attended subsequent focus groups (i.e., four workshops were attended by a total of 98 participants) and comprised a mixture of psychology practitioners, academics, graduates, and psychology students aged between 25 and 64 years. These participants further refined the model. Ethics approval was granted by Deakin University Human Research Ethics Committee and written and informed consent was obtained from all research participants prior to the project commencing.

Materials and Procedure

Stage 1, Part 1: Inspection of Pre-Existing Materials

Pre-existing data were distributed to the first group of eight participants for their consideration before the Delphi process began. Materials comprised: pre-existing data on graduate (vocation) destinations, course, and units evaluations from two universities. Publically assessable course content that was taught by several other Australian universities was also inspected. Key publications with a focus on psychology competency models were also distributed. The themes were determined and discussed at the first meeting. At the time that the study was conducted, the international declaration of the core competencies of professional psychology [International Association of Applied Psychology (IAAP) and International Union of Psychological Science (IUPsyS), 2016] had not been published.

Stage 1, Part 2: Delphi Study

Delphi techniques are used when the opinions of a group of experts are being sought (Broomfield and Humphris, 2001). The eight SMEs participated in a modified Delphi methodological process designed to explore psychology competencies. The participants initially participated in a face-to-face session and thus were known to each other. Following the first session, the authors developed a competency model. The two subsequent sessions were conducted *via* email. The data from the earlier round and the first version of the competency model were supplied to the participants. Several questions were asked at each of the three rounds. Sample questions included: *"What competencies are required to practice as a psychologist?"* and *"At what stage/time/episode of practice do these competencies get utilized?"* The competency model was further refined after each round. As no new information emerged, the SME panel participated in three rounds that were conducted over a 5-week timeframe.

Stage 2: Focus Groups

Focus groups were established following the development of the first version of the competency model. Focus groups are used to obtain feedback when developing an instrument, process, and/or procedure (Colton and Covert, 2007). The first version of the psychology competency model was presented to four opportunistic and independently sourced focus groups. Each focus group comprised practitioners, academics, graduates, and students currently enrolled in a psychology course. These participants were asked to provide feedback and further refine the model. The focus groups were held in three different Australian states. With the consent of the participants, the data were recorded directly onto a laptop and de-identified.

Planned Analysis

The analyses were qualitative, and planned *a priori*. For part 1 of the first stage of the procedure, materials were collected, collated, and the data gleaned were inspected and categorized into themes (Braun and Clarke, 2006; Charmaz, 2009). The focus of this first part of the analysis was on course content, key features of competency models and gaps in the extant literature. The second part of stage 1 utilized a Delphi technique wherein opinions of a group of SMEs were sought about the veracity of the themes presented (Broomfield and Humphris, 2001). Rounds of questioning continued until the information being sought from the participants had converged, with a model being created and refined reiteratively.

The second stage of the analyses presented the new model to focus groups. The final input and feedback from focus groups provided the researchers with various perspectives of the model, and subsequently this information helped to crystalize the final form of the model.

RESULTS

Following a review of the pre-existing information in Stage 1, Part 1, three main factors were identified. First, the inclusion of an explicit scientist–practitioner process was found to be imperative to include in the model and was generally lacking in other competency lists/models. Second, the need for the competencies to accurately reflect practice was considered highly desirable (most of the extant literature provided lists, rather than frameworks, of competencies and thus had limited explanatory power). Third, given that the competencies may intersect, the phenomenon was embedded into a new model.

The result of the analysis from the Stage 1, Part 2 methodology (i.e., the Delphi process) contributed to the creation of an initial list of competencies (see **Table 2**).

At this stage of the study, consideration was given to how the above list of competencies (see **Table 2**) should be represented in an interrelated model. The first overarching principle of psychology practice was unanimously identified as the presence of the scientist–practitioner model and the exhibition of the consequent knowledge, skills, and behaviors. To capture the scientist–practitioner process, the four competencies (see **Figure 1**) were adopted as the vertical pillars of the model. The scientist–practitioner process was seen to be an important, but latent feature. Two meta-competencies were then identified: (i) "Practices ethically and professionally" (this meta-competency included legal and ethical components and continuous improvement); and (ii), "Communicates and collaborates effectively."

TABLE 2 | Postgraduate psychology core competencies.

Core competencies	
Competency 1: determines client needs	C1.1: assess clients' needs C1.2: gathers context to inform the action C1.3: contracts for services/Discusses expectations with the client
Competency 2: designs evidence-based interventions	C2.1: generates alternative options C2.2: evaluates options C2.3: selects and/or develops appropriate interventions (case formulation) C2.4: sets and agrees performance or success criteria
Competency 3: implements interventions	C3.1: implements interventions C3.2: interprets results, taking into account contexts and individual circumstances C3.3: communicates results in language relevant to the client C3.4: assists clients'/clinicians' decision-making and planning
Competency 4: evaluates outcomes	C4.1: evaluates individual and/or system outcomes C4.2: recommends modifications to the process
Meta-competencies	
1. Practices professionally	M1.1: practices within the applicable legislative and regulatory frameworks M1.2; Practices according to professional standards and codes of ethics M1.3: practices continuous improvement in professional domains *via* self-assessments and professional development
2. Communicates and collaborates effectively	M2.1: establishes and maintains constructive working relationships with clients M2.2: communicates effectively with a wide range of client groups and other professionals M2.3: communicates and functions effectively within and across cultures M2.4: communicates and functions effectively with clients at different life stages

A competency model for the practice of psychology was then developed (version 1) (see **Figure 1**). The model has a matrix structure; thus, it has both horizontal and vertical features (the horizontal bars represent the meta-competencies required for the practice of psychology). The scientist–practitioner process was also explicitly included and integrated in the model.

Stage 2: Focus Groups

The focus groups were presented with the first version of the model. These groups subsequently refined the aspects of the model (e.g., word choice) and made three further improvements to the model. The first improvement was to encase the model in a box labeled Health Practice Context to acknowledge that many types of psychologists work in different settings and practice in ways that are responsive to the needs of their various clients, who may be as diverse as individuals, families, organizations,

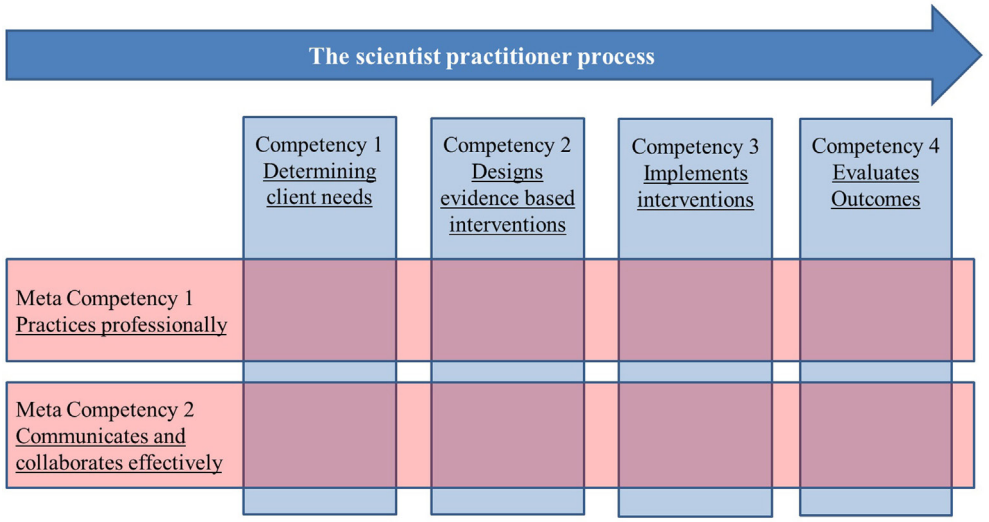

FIGURE 1 | First version competency model for the practice of psychology.

and the community. The second improvement was to use a broken line for the scientist–practitioner arrow to reflect the latent nature of the process. The final improvement to the model was the inclusion of arrows pointing left and right between the vertical pillars to denote the adaptability of the practitioner to review, revise a case formulation, and ultimately mirror the ongoing evaluation and refinement of practice. **Figure 2** shows this final iteration to the competency model.

Participants in the practitioner groups stated that they believed that the model represented psychology practice and was parsimonious. Some educators noted that the model also led to explicit conversations with students as to where corrective learning needs to occur. One focus group consisted of students and new graduates. A graduate participant of this focus group commented: *"This makes a lot of sense. I understand the content of the units I study, but now I understand why/and how they fit together—the coherence is great"* (student participant, focus group discussion, November 2012).

DISCUSSION

An inadequate competency model of the practice of psychology may lead to inadequate measurement methods for competency assessments (Zlatkin-Troitschanskaia et al., 2016). There have been national and international calls for a competency model that reflects the diverse and complex nature of the practice of psychology. Competency models represent important signposts and reflect the standards of practice expected by regulators, educators, and the profession generally. A clear model should also accurately indicate the areas in which corrective learning need to be undertaken.

The central research question of this study was: *can a competency model for psychologists be developed that reflects the complex and diverse nature of psychology practice?* The multi-method approach adopted by this study enabled this question to be answered and delivered a competency model that adequately reflects the practice of psychology.

In this study, the researchers first identified an international trend for the use of competencies and competency models within psychology. They then developed and established a competency model by focusing on the core competencies, underpinned by the scientist–practitioner process, required for the professional practice of psychology. Arrows between these competencies showed the pathway between these core competencies, thus recognizing the fluidity and relationship between these areas of competence. The addition of these alternate pathways is a unique feature of this model.

The competency model developed clearly outlines the meta-competencies (i.e., the competencies that function across all aspects of the practice of psychology). While meta-competencies have been displayed in previous models, this model uniquely adds "communicates and collaborates effectively" as a separate meta-competency. These meta-competencies should underpin any assessments of work placements and professional practice. The content of the vertical bars in the model (see **Figure 2**) are generally aligned with the international declaration of core competencies in professional psychology [International Association of Applied Psychology (IAAP) and International Union of Psychological Science (IUPsyS), 2016]. Overall, the new model is parsimonious which addresses the criticism of complexity in previous models.

This new model also has several advantages in the Australian context. First, its clear elucidation of the professional practice competencies should lead to clearer articulations, assessments, and measurements of professional practice. Additionally, subsequent improvements in education, registration, and university accreditation should increase students' readiness for work and their employability. Further, students, practitioners, and regulatory bodies can use this alternative, contemporary, but accessible competency model. Second, this model reflects the realization

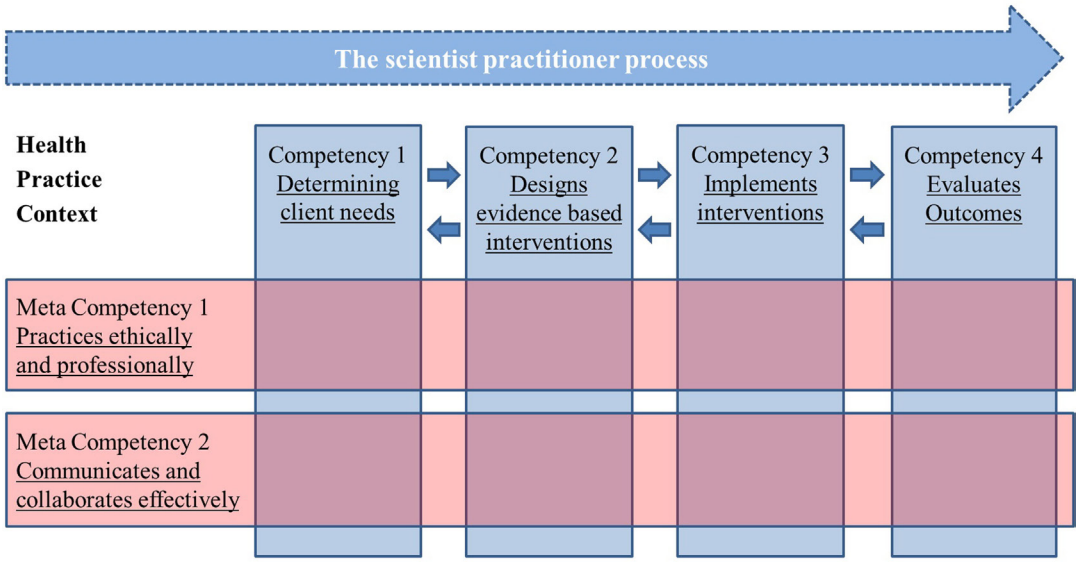

FIGURE 2 | Final competency model for the practice of psychology.

that while students work toward attaining competencies, they often do so by acquiring discrete skill sets embedded in separate coursework units and do not understand how the competencies coherently meld together at the course level. This study showed that students do not understand the overarching principles that drive these competencies within professional practice. Thus, the psychology competency model should also improve students' understandings of how professional competencies are embedded and assessed at the course level. Third, this model addressed the clear need to make these key competencies explicit to students, and to link them to authentic and real-world practice and assessments in a transparent manner.

Limitations and Future Research

This study sought to address this issue of the lack of a competency model by developing a competency model for the practice of psychology within an Australian context. The generalizability of this competency model of psychology practice is yet to be tested across other international psychology groups. Further validation of this model would need to be conducted to evaluate the effectiveness of this model.

A limitation may be that only a qualitative approach was taken. Quantitative approaches may further validate or inform the model's development. For example, in the future, a principal component analysis could be conducted on the responses from the national psychology exam and these results, along with the results of this qualitative process be triangulated.

On a practical level, once an agreed model is established, the learning objectives associated with each component (and concurrent components) of the model could lead to the development of assessments that better reflect real-world practice and that can be empirically tested.

The detail of the competencies that sit under each competency is yet to be completed and incorporated. Aligning the model to actual behaviors in psychology practice will make this model more psychology specific. It is also noted that this "global level" model may also be relevant to allied health practice. Indeed the identified meta-competencies align, in part, to some of the competencies described by theorists and educators in interprofessional practice.

CONCLUSION

This model proposed a new way of conceptualizing psychology practice. The identification of competencies (ideally derived *via* the adoption of a multi-method approach) and the way in which they fit together (under the competency model) provides an empirical foundation for the use of competencies in the education, regulation, and qualification or credentialing of psychology. The focus groups further refined, but also supported the competency model for the practice of psychology and may inform teaching, regulation, and the practice of psychology.

ETHICS STATEMENT

This low risk, human research ethics application and protocols were approved by the ethics committee from the Faculty of Health, Deakin University, HEAG-H. All subjects gave written informed consent in accordance with the Declaration of Helsinki.

AUTHOR CONTRIBUTIONS

KT initiated and led the research team. She has written all sections of the paper except for part of the introduction. NR conducted the analysis and developed the first version of the competency model, and wrote part of the introduction.

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