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Competencies and Frameworks in Interprofessional Education: A Comparative Analysis

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Abstract

Health professionals need preparation and support to work in collaborative practice teams, a requirement brought about by an aging population and increases in chronic and complex diseases. Therefore, health professions education has seen the introduction of interprofessional education (IPE) competency frameworks to provide a common lens through which disciplines can understand, describe, and implement team-based practices. Whilst an admirable aim, often this has resulted in more confusion with the introduction of varying definitions about similar constructs, particularly in relation to what IPE actually means.

The authors explore the nature of the terms *competency* and *framework*, while critically appraising the concept of competency frameworks and competency-based education. They distinguish between competencies for health professions that are profession specific, those that are generic, and those that may be achieved only through IPE. Four IPE frameworks are compared to consider their similarities and differences, which ultimately influence how IPE is implemented. They are the Interprofessional Capability Framework (United Kingdom), the National Interprofessional Competency Framework (Canada), the Core Competencies for Interprofessional Collaborative Practice (United States), and the Curtin University Interprofessional Capability Framework (Australia).

The authors highlight the need for further discussion about establishing a common language, strengthening ways in which academic environments work with practice environments, and improving the assessment of interprofessional competencies and teamwork, including the development of assessment tools for collaborative practice. They also argue that for IPE frameworks to be genuinely useful, they need to augment existing curricula by emphasizing outcomes that might be attained only through interprofessional activity.

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In 2011 two reports[1,2] were published that aimed to facilitate the transformation of health professions education, and consequently health care delivery, in the United States. They focused on a number of action strategies to enhance interprofessional collaborative practice through defining the core competencies to be acquired through interprofessional education (IPE). One important outcome was the foundation of the National Coordinating Center for Interprofessional Education under the auspices of the University of Minnesota.

IPE predates those welcome developments by many decades, dating back over 40 years,[3] with additional impetus in 1988 provided by two World Health Organization (WHO) reports: *Continuing Education for Physicians*[4] and *Learning Together to Work Together for Health*.[5] WHO confirmed its commitment to IPE with the 2010 publication of the *Framework for Action on Interprofessional Education and Collaborative Practice*.[6] In the same year, the Lancet Commission for Health Professionals for the 21st century, a globally constituted group of 20 professional and academic leaders, published its vision and strategy for health professions education reform.[7] The commission reinforced the idea that graduates must be capable of providing team-based care to meet the health needs of an aging population and the rising incidence of long-term chronic and complex conditions. It highlighted "a slow-burning crisis" arising from the "mismatch of professional competencies to patient and population priorities because of fragmentary, outdated and static curricula producing ill-equipped graduates."[7]

The use of the term *competencies* by both the Interprofessional Education Collaborative (IPEC)[1] and the Lancet Commission[7] reflects the trend of defining what graduates should be able to do in practice[8] rather than simply what they should know or be able to demonstrate during training. In response to the move toward competency-based education (CBE) and the increasing focus on IPE, health professions education has seen the introduction of IPE competency frameworks that aim to provide a common lens through which disciplines can understand, describe, and implement team-based practices. Whilst an admirable aim, often this has resulted in more confusion, with the introduction of varying definitions about similar constructs (such as *competency* and its relation to terms such as *learning objective*, *learning outcome*, and *capability*), particularly in relation to what IPE actually means.

With these issues in mind, in this article, we explore the nature of the terms *competency* and *framework*, while critically appraising the concepts of competency frameworks and CBE. We compare existing IPE frameworks to consider the similarities and differences that they highlight about the nature and delivery of IPE at the current time. This exploration is part of a project being undertaken in Australia, entitled Curriculum

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Renewal for Interprofessional Education and Health, by the Interprofessional Curriculum Renewal Consortium, funded by the Australian government's Office of Learning and Teaching. The project's aim is to produce and disseminate resources to guide and support curriculum change for IPE and interprofessional practice.[9]

Defining IPE

The first challenge in setting outcomes or competencies is to agree on the operational definitions in the IPE, because "a lack of clarity of key terms can hinder shared meanings and implementation efforts."[10] The United Kingdom's Centre for the Advancement of Interprofessional Education provides one of the most widely recognized definitions of IPE: IPE occurs "when two or more professions learn with, from and about each other to improve collaboration and the quality of care."[11] Other definitions, such as the IPEC's[1] (taken from the WHO framework) vary slightly: IPE occurs "when students from two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes." Both definitions reflect the need for IPE to be an interactive learning process with the goal of improving health care delivery, outcomes, and quality. Although this aim is uncontroversial, it has been difficult to demonstrate the effectiveness of IPE when educating students in the health care professions because of the lack of long-term evaluations of the impact of IPE in relation to qualified health professionals working collaboratively.[12]

Competency-Based IPE

The movement from learning objectives to competencies is linked to the campaign in the 1960s and 1970s to define behavioral and, therefore, observable objectives.[7,13] To be deemed "competent," learners have to demonstrate that they have mastered a set of competencies, but agreement is still lacking about what competence is. Fernandez et al[14] reviewed the health sciences education literature to identify similarities and differences between definitions of competence. They grouped the results into three themes: the components of competence (usually knowledge and skills), what competence enables a competent person to do (adequately or successfully), and the purpose of the competence (e.g., to be able to improve quality of care interprofessionally).[14]

Regarding IPE, Bainbridge et al[15] report that IPE statements about competence "identify specific knowledge, skills, attitudes, values and judgments that are dynamic, developmental and evolutionary." This last statement makes clear that there is an imperative to update curricula about competencies to meet the changing needs of populations over time. *Capability* has been used in preference to *competence* in one IPE framework, as it is considered by some educators to reflect more optimally the necessity that learners and professionals respond and adapt to health care and systems changes.[16]

A national audit of IPE in Australia found great diversity in the way that learning outcomes for IPE activities were specified.[17] This is most likely due to the lack of consensus about the meanings of *competency* and *capability*. This finding mirrored results from a 2010 review and synthesis of the global IPE literature,[18] which collated the key learning outcomes for IPE as defined in descriptions of interprofessional learning activities. The authors suggested, in line with previous recommendations,[19] that educators should distinguish between profession-specific versus generic outcomes (the latter necessary for all health professions), and further classify generic outcomes into those that can be achieved uni-professionally and those that can only be achieved through IPE. This latter group Barr[20] termed to be one that requires "collaborative competencies." Thematically, the outcomes stated in the 2010 review[18] were grouped under six headings: teamwork, roles and responsibilities, communication, learning/reflection, the patient (client), and ethics and attitudes.

The Relevance of Interprofessional Competency Frameworks

When competencies are grouped together for a particular profession, they may be referred to as professional accreditation standards (if stipulated by professional licensing bodies) or, in some cases, as competency frameworks. Competency frameworks are found in multiple disciplines and constitute a blueprint for optimal performance in a given area of practice. The blueprint metaphor is used, for example, by the Pharmaceutical Society of Ireland in its framework for pharmacy practice.[21] Harden,[22] in a seminal paper advocating the reframing of objectives into learning outcomes for health professions education, suggests that "statements relating to the product of learning … offer a flexible framework where individual institutional and national differences can be accommodated" while engaging learner and teacher in partial ownership of the process. Reeves et al[23] have pointed out the similarities in competency statements across health professions, particularly in the areas of "communication, assessment, planning, monitoring and advocacy," and therefore questioned the aim of developing profession-specific frameworks to define unique areas of practice.[23] Indeed, the Australian governmental agency Health Workforce Australia has recently produced a report, *National Common Health Competency Resource for the Australian Health Workforce*,[24] which specifies competencies believed to be common between health professions "as a tool for employers to inform and support flexible approaches to workforce design and redesign."

The United Kingdom–based Chartered Institute of Personnel and Development[25] defines a competency framework as "a structure that sets out and defines each individual competency (such as problem-solving or people management) required by individuals working in an organization or part of an organization." If we consider the health service as the organization in which health professionals work, then interprofessional competency frameworks are relevant to all professionals. Such frameworks are useful for educators who are considering introducing IPE into their programs; the frameworks can serve as a guide to inform curricula in combination with appropriately aligned learning activities and assessments.

Critically Appraising the Concept of Competency Frameworks

Competency frameworks should promote the alignment of competencies with appropriate activities and subsequent assessment to verify that learners have attained the competencies. Such alignment, with its student-centered approach, resonates with constructivist learning theory and promotes the

creation of meaning from the learning experience.[26] We must then consider how the learner, the educator, and the wider community can know that a particular competency has been achieved. Is competence an all-or-nothing phenomenon? Is a person competent, not competent, or indeed incompetent in relation to a given skill area? Are there grades of competence?

The University of British Columbia (UBC)[27] has provided a "theoretical framework to guide course and program development: the UBC model of IPE." Drawing on educational literature, this model conceptualizes IPE in three stages of learning that overlap as students move through their professional training: exposure, immersion, and mastery. These stages highlight the developmental nature of interprofessional competencies, facilitating the planning of appropriate learning activities for students' developmental levels. However, assessment of interprofessional competencies still involves a judgment as to whether a learner has attained competence in a particular area. Even so, if a learner is judged to be competent, it does not necessarily follow that she or he is a master or expert in the particular area. Expertise is a stage beyond competence and is achieved by deliberate practice and feedback over time.[28] The interprofessional expert is able to integrate all competencies within a framework and demonstrate overall competence by skillfully performing the competencies in a range of different contexts and situations through such deliberate practice[29] and from moving successfully from exposure through immersion to mastery.[27]

Miller's[30] pyramid is widely used to delineate the difference between *competence* (the student "knows how" to carry out a professional function) and *performance* (the student "shows how" he or she carries out a professional function, often through an objective structured clinical examination), while the top level of clinical competence is *action* (what a graduate does when functioning independently in a clinical environment). Medical and other health professions students are assessed primarily as individuals in order to graduate and be licensed. Yet interprofessional competencies require assessments that look not only at individuals and their ability to work in teams and collaboratively but also at team performance as whole. As Lingard[31] points out, "our way of seeing competence reflects the individualist orientation of the education system." She continues by stating that we cannot guarantee that, by bringing together individuals assessed as competent, a competent, functioning team will result.

CBE is not without its critics. Talbot[32] argues that competency is not synonymous with competence. In his opinion, competency models that use criterion-referenced approaches do not encourage the "deep and reflective" engagement required during professional practice-based learning. He believes that attainment of competencies does not guarantee satisfactory performance, which requires technical ability aligned with reflective practice. Such criticism is partially met by the inclusion of reflection as a domain or statement (e.g., as stated by the IPEC[1]: "Reflect on individual and team performance for individual, as well as team, performance improvement") within many competency frameworks, though there remains controversy about whether and how reflection can be assessed. Summative assessment of reflection may prompt students to censor their reflections in order to pass, because they are habituated to demonstrating what they know rather than identifying the areas about which they may be uncertain.[33]

Comparing Interprofessional Competency Frameworks

Prior to the IPEC, in 2003 the Institute of Medicine[34] defined a set of core competencies that "all health clinicians should possess regardless of their discipline." Rather than being interprofessional competencies, these are generic, summarized in the statement "all health professionals should be educated to deliver patient-centered care as members of an interdisciplinary team, emphasizing evidence-based practice, quality improvement approaches and informatics."[34] Globally, uni-professional competency frameworks and accreditation standards include interprofessional competencies. Table 1 presents examples of such uni-professional competency frameworks relating to the practice of medicine; they are from the United States,[35] Canada,[36] the United Kingdom,[37] and Australia.[38] In addition, the bottom row of the table presents information about a recent amalgamation of lists of physician competencies from many sources.[39]

However, there are only a few specific interprofessional competency frameworks. These have been developed in the United Kingdom,[40] Canada,[41] the United States,[1] and Australia[42] (see Table 2 and the next section). As Carraccio and Englander[43] have stressed in their reflection on 10 years of CBE in the United States, it is necessary to standardize the language used to define competencies in order to be able to "develop a shared vision of the path ahead." While they are referring to medical education, agreement on a shared language for interprofessional competencies across all health professions for both education and accreditation standards would facilitate the further development and delivery of IPE, as all students would be working toward common outcomes.

Below, we briefly describe four published IPE frameworks to make clear their similarities and differences, and how each framework's characteristics ultimately determines how IPE will be implemented. See Table 2 for an overview of these IPE frameworks.

The Interprofessional Capability Framework

The Interprofessional Capability Framework[40] is the oldest of the four frameworks. It was published in 2010 by the Combined Universities Interprofessional Learning Unit in a joint initiative of the University of Sheffield and Sheffield Hallam University in the United Kingdom. The initiative was government funded. Its capability statements are categorized into four domains, and it has been comprehensively evaluated.[44]

National Interprofessional Competency Framework

The National Interprofessional Competency Framework[41] was developed by the Canadian Interprofessional Health Collaborative (CIHC) Competencies Working Group with funding provided by Health Canada. The group's mandate was to review and evaluate relevant literature and existing frameworks and to further refine the resulting framework

Table 1

Examples of Published Uniprofessional Competency Frameworks and Professional Standards[a]

Framework/standards	Origin, year published	Terminology used	Roles	Example of statements
Association of American Medical Colleges: Learning Objectives for Medical Student Education. Guidelines for Medical Schools[35]	United States, 1998	Learning objectives	N/A	An understanding of, and respect for, the roles of other health care professionals, and of the need to collaborate with others in caring for individual patients and in promoting the health of defined populations.
CanMEDs Physician Competency Framework[36]	Canada, 2005	Competencies	Medical expert, communicator, collaborator, health advocate, manager, professional, scholar	Participate effectively and appropriately in an interprofessional health care team; effectively work with other health professionals to prevent, negotiate, and resolve interprofessional conflict.
General Medical Council: Tomorrow's Doctors[37]	United Kingdom, 2009	Outcomes	Scholar and scientist, practitioner, professional	Learn and work effectively within a multiprofessional team.
Australian Medical Council. Standards for Assessment and Accreditation of Primary Medical Programs by the Australian Medical Council, 2012[38]	Australia, 2012	Outcomes	Scientist and scholar, practitioner, health advocate, professional, leader	Describe and respect the roles and expertise of other health care professionals, and demonstrate ability to learn and work effectively as a member of an interprofessional team or other professional group.
Reference List of General Physician Competencies[39b]	United States, 2013	Competencies	8 domains rather than roles, one of which is Interprofessional Collaboration[c]	Work with other health professionals to establish and maintain a climate of mutual respect, dignity, diversity, ethical integrity, and trust.

[a]The uniprofessional (i.e., profession-specific) competency frameworks and accreditation standards shown in the table include interprofessional competencies. There are only a few specifically interprofessional competency frameworks, which are listed in Table 2.
[b]This reference list presents a recent amalgamation of lists of physician competencies from many sources worldwide. It consists of 58 competencies in 8 domains.
[c]The eight domains are Patient Care, Knowledge for Practice, Practice-Based Learning and Improvement, Interpersonal and Communication Skills, Professionalism, Systems-Based Practice, Interprofessional Collaboration, and Personal and Professional Development.

through stakeholder consultations. It has six competency domains and is applicable to students and practitioners, regardless of skill level, practice setting, or context. The framework acknowledges that interprofessional collaborations will differ in terms of their complexity, context, and the need for quality improvement. The CIHC document provides examples of how the framework can be applied to several contexts. Its intended audience is educators, learners, regulators, practitioners, employers, and accreditors. There are, however, no suggestions as to how the competencies may be assessed or how learners or practitioners might provide evidence to confirm they have achieved them.

Core Competencies for Interprofessional Collaborative Practice

The Core Competencies for Interprofessional Collaborative Practice[1] were developed in the United States by an expert panel with members representing health professions, higher education institutions, and professional associations. The process was informed by the CIHC competency framework[41] and the WHO framework for action.[6] The competency approach adopted is linked to the Institute of Medicine's core competencies for all health professions.[34] This framework has four core competency domains. Its competency statements identify what should be achieved by the end point of prequalification (prelicensure) training, but are relevant beyond the student level. While the framework document includes the nature of potential learning activities, stages in education, and use of resources, there is no implementation guide and no discussion of assessment strategies. The document recognizes, however, the need for suitable instruments to assess interprofessional competencies. IPEC uses the exposure and immersion language of the CIHC but replaces *mastery* with *competence*, which is assumed to be achieved at the entry to practice level.

Curtin University's Interprofessional Capability Framework

The Interprofessional Capability Framework[42] was developed by Curtin University (in Perth, Western Australia) in response to the WHO mandate[6] that IPE should be a core component of health science curricula. This framework was adapted from the Sheffield Hallam University's Interprofessional Capability Framework[40] and the CIHC's framework.[41] The developers report wide consultation with staff, students, industry representatives, international experts in the field of IPE, and health consumer representatives. It comes with an interprofessional capability assessment tool,[45] which is undergoing validation.

Discussion

Unsurprisingly, given the similarities in demographics and health service pressures in the four countries whose IPE frameworks are considered in this article, the terminologies describing expected interprofessional outcomes in both medical and IPE frameworks are also similar. However, it is not clear as yet that these frameworks actually do meet the goal of a uniform terminology for outcomes or that learners find them more useful than the broader outcomes

Table 2
Four Published Interprofessional Competency Frameworks

Framework (source)	Origin, year published	Stimulus and background	Terminology used	Domains	Evaluated?
Interprofessional Capability Framework (Combined Universities Interprofessional Learning Unit)[40]	United Kingdom, 2004	To provide a more coherent, integrated, and patient-centered approach to modernizing the educational input for future health professionals; to promote teamwork, partnership, and collaboration between professionals and agencies, and with patients.	Capabilities	• Knowledge in practice • Ethical practice • Interprofessional working • Reflection (learning)	Yes[44]
National Interprofessional Competency Framework (Canadian Interprofessional Health Collaborative Working Group)[41]	Canada, 2010	To develop interprofessional collaboration for a national competency framework.	Competencies	• Interprofessional communication • Patient-/client-centered care • Role clarification • Team functioning • Collaborative leadership • Interprofessional conflict resolution	As far as could be determined, the framework has not yet been evaluated.
Core Competencies for Interprofessional Collaborative Practice (Interprofessional Education Collaborative Expert Panel)[1]	United States, 2011	To transform health professions education and address the need to build safer health care systems that are more patient centered and community oriented.	Competencies	• Values and ethics • Roles and responsibilities • Interprofessional communication • Teamwork and team-based care	As far as could be determined, the framework has not yet been evaluated.
Interprofessional Capability Framework (Curtin University)[42]	Australia, 2011	To foster the capabilities needed to be a collaborative, practice-ready health professional, who can work effectively and efficiently in an interprofessional team and provide safe, high-quality service and care to clients, families, and communities.	Capabilities	• Communication • Team function • Role clarification • Conflict resolution • Reflection	As far as could be determined, the framework has not yet been evaluated.

of their profession-specific curricula.[46] If interprofessional frameworks, particularly those of national scope, are to be useful to students, educators, and health professionals, they need to add value to existing curricula outcomes, rather than duplicate them, and to emphasize those outcomes that may be attained only through interprofessional activities.

Students' exposure to and immersion in teamwork experiences in clinical environments are highly variable, both in terms of the type and the amount of teamwork observed and undertaken. Clinical placements are examples of work-integrated learning activity, aimed at facilitating the integration of theory and practice.[47] Observation of teams in action is not sufficient; students need to become active members of teams, an outcome that appears more likely for medical students on longitudinal placements than on standard six- to eight-week discipline-specific rotations.[48]

However, not all students have the opportunity to work with or even observe teams engaged in collaborative interprofessional practice. Such opportunities are very dependent on the nature and variety of clinical placements available, as the adoption of interprofessional practice is quite variable. As a recent Macy Foundation report recommends,[49] IPE reforms must be aligned with changes in health care delivery and practice reform; education and practice developments cannot be tackled independently of each other. Those students who are exposed to IPE and are expected to meet interprofessional and teamwork competencies and yet do not see health professionals working together in practice are unlikely to consider that collaborative interprofessional practice is important in real-life clinical environments.

Assessment of competencies is not well defined in any of the frameworks. Lurie[50] has criticized examples of the very broad competencies defined by medical boards and accreditation bodies, noting that many are abstract and socially constructed concepts that are difficult to translate into observable and therefore assessable behaviors. Although teamwork is not mentioned specifically, Lurie's argument—that the situations in which these constructs are relevant need to be specified—has implications for the development of work-based assessments (WBAs) in this area. Moreover, any WBA instrument should have an educational impact through promoting, and not just measuring, the competencies required, so that the assessment itself helps develop productive student learning.[51]

The Value of Interprofessional Competency Frameworks

Despite their limitations, interprofessional competency frameworks have much to offer educators in planning how they can best support their students to develop the attributes required for them to be effective members of health care teams in their future practices. If well chosen and contextualized, interprofessional competencies can usefully complement the broader attribute descriptions typical of uni-professional standards

and can direct students to the specific areas of learning required. Further work is needed, however, to develop robust assessment tools that will complement the frameworks and enable reliable verification of students' readiness for collaborative practice.

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