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Defining Foundational Competence for Prelicensure and Graduate Nursing Students: A Concept Analysis and Conceptual Model

Katie L. McDermott

Marquette University, Medical College of Wisconsin

Kristina Thomas Dreifuerst

Marquette University

# Abstract

## Aim

To define the concept of foundational competence as it pertains to prelicensure and graduate nursing students during their educational program, thereby informing pedagogical and assessment practices.

## Background

Competence has many definitions and uses, however a lack of consensus of a clear and useful definition in nursing persists. Without shared language, competence remains open for interpretation across and among groups and impedes the ability to teach and assess it in a competency-based education framework.

## Method

Using the Walker & Avant method of concept analysis, literature was reviewed and synthesized to define and explain the concept of foundational competence in nursing using evidence and practice from various disciplines.

## Findings

Antecedents, attributes, empirical referents and consequences of foundational competence were identified.

## Discussion

The components and uses of the concept of foundational competence are presented to guide pedagogical and assessment practices necessary for competency-based education in nursing.

# Keywords

Competence, Competency-based education, Prelicensure nursing education, Graduate nursing education, Nursing education, Concept analysis

# 1. Introduction

The words competence, competency and the plural competencies have become ubiquitous among health care educators, academic and practice environments and accrediting and certifying bodies with the trend toward competency-based education (CBE) in the nursing education landscape (https://www.aacnnursing.org/AACN-Essentials, Canadian Association of Schools of Nursing (CASN), 2016, Nursing and Midwifery Board of Australia (NMBA), 2016, Nursing and Midwifery Council (NMC), 2018). Competence, a word used across multiple settings and disciplines, at first appears intrinsically understood given its expansive use. However, despite numerous articulated definitions, argued discourses, and descriptive constructions, a mutually accepted, standardized, and useful definition does not currently exist.

Competence, competency and the plural competencies are found in the extant literature interchangeably with a variety of meanings (AACN, 2021; ACGME et al., 2020; DiLeonardi et al., 2020; Dunbar et al., 2019; Englander et al., 2017; Giddens, 2020; Hawkins et al., 2015; Hodge et al., 2020; Hodges et al., 2019; Kavanagh and Sharpnack, 2021; Khan and Ramachandran, 2012; Mills et al., 2020; Moghabghab et al., 2018). Without consensus, clarity and shared language specifically describing the definition of competence, the term and associated terminology remain open for interpretation across and among different groups. This impedes the ability to teach and assess it in a rigorous and meaningful way (Englander et al., 2017, Frank et al., 2010a, Frank et al., 2010b, Khan and Ramachandran, 2012, Lewallen and Van Horn, 2019, Mills et al., 2020). In fact, in 2007, Klass argued that professional disciplines are obligated to articulate the meaning of competence within their respective fields to ensure at least “acceptable” performance. This remains critical today.

## 1.1. Background

Repeated calls for safer and higher quality health care, increased accountability to the public and the need for improved patient outcomes have situated competent health care professionals at the center of the proposed solutions (American Association of Colleges of Nursing (AACN), 2015, American Association of Colleges of Nursing (AACN), 2019; Anon, 2015; Institute of Medicine Committee on Quality of Health Care in America, 2000, Institute of Medicine Committee on Quality of Health Care in America, 2001, Institute of Medicine, 2003, Institute of Medicine Committee of the Work Environment for Nurses and Patient Safety, 2004, Institute of Medicine Committee on the Robert Wood Johnson Foundation Initiative on the Future of Nursing, at the Institute of Medicine, 2011; McGaghie et al., 1978). Efforts toward answering calls for accountability have coalesced around CBE, wherein ideal outcomes or competencies of individual learners and educational programs are defined, articulated, taught, assessed and then allegedly guaranteed of graduates (Boyd et al., 2018, Carraccio et al., 2002, Frank et al., 2010a, Frank et al., 2010b, Rich et al., 2020). Medical education has implemented CBE broadly at multiple levels of training, with other health care professions following suit (ACGME et al., 2020; Hsiao et al., 2020; Sistermans, 2020).

In the United States of America (US), the AACN recently endorsed CBE frameworks as the solution to the numerous complex challenges facing the education of the nursing workforce. This transition entails a critical shift in focus from what a learner should “know” to what a learner must be “able to do,” yet this is not new as nursing education leaders have been arguing for and against CBE for decades (American Association of Colleges of Nursing (AACN), 2019, https://www.aacnnursing.org/AACN-Essentials; Ironside, 2007). CBE is generally described as an approach to prepare learners for practice, is organized around defined measurable outcomes and with a deemphasis on time-based training (Boyd et al., 2018, Frank et al., 2010a, Frank et al., 2010b, Giddens, 2020, Kavanagh and Sharpnack, 2021, Snell et al., 2014). While this approach is underscored in AACN’s *The Essentials* document (2021), confusion persists regarding what this pragmatically means for nursing students and educators.

This description of foundational competence primarily focuses on nursing education in the US, although maintain it has relevance and applicability internationally. CBE began taking off as early as the 1970’s and has since been rooted as an educational method across disciplines worldwide (Bates, 1995, Bokonjić et al., 2019, Foth and Holmes, 2016, Gruppen et al., 2012, Imanipour et al., 2022; McGaghie et al., 1978; NMC, 2018; Park et al., 2015). The most recent international discussions regarding CBE have centered around global health needs and outcomes, implications for resource-poor settings, consideration of an interprofessional approach, and enduring changes to the health care system as a result of the COVID-19 pandemic (Foth and Holmes, 2016, Hossler and James, 2021, Imanipour et al., 2022).

## 1.2. Purpose

The purpose of this paper is to clarify and describe the concept of competence of prelicensure and graduate nursing students and to inform pedagogical and assessment practices in nursing education. There is a need for two definitions of competence – the first is foundational competence which underpins the purposes of education, training and regulation necessary to prepare new-to-practice nurses. The second is functional competence which represents the development of credentialed clinicians and practitioners across the continuum of novice to expert practice (Benner, 1984). This concept analysis focuses on foundational competence of an individual student, not competency or competencies as a synonym for defined standard(s), an educational process, or program assessment. Moreover, the individual student refers specifically to a prelicensure or graduate nursing student in general, however the specific competencies (or standards) themselves will differ by specialty as defined by accrediting and certifying organizations (AACN, 2021; National Council of State Boards of Nursing (NCSBN), 2022, National Organization of Nurse Practitioner Faculties (NONPF), 2017).

# 2. Methods

Walker and Avant’s (2019) traditional method of concept analysis was used because the process is appropriate when the concept is ambiguous, inadequately explained and overused, as is the case with competence. This concept analysis process, although iterative, follows the steps of 1) selection of a concept, 2) determination of the aim(s) of the analysis, 3) identification of all possible uses of the concept, 4) determination of the antecedents, defining attributes, empirical referents and consequences and 5) development of model and contrasting cases of the concept (Walker & Avant, 2019, p. 170). Therefore, literature was reviewed and synthesized to include works which defined, measured, or helped to explain the antecedents, attributes, or empirical referents and from various disciplines, inclusive of nursing, medicine, law, education and business.

# 3. Findings

## 3.1. Concept Uses

Competence has expansive meanings, uses, and applications, as well as a plethora of synonyms often used interchangeably, including the terms credibility, capacity, proficiency, qualified, sufficient, ability, capability, skill, performance, and of course, competency. Commonly, the term competence is defined in the dictionary as: “the ability to do something successfully” (Oxford Reference, n.d.) or “the quality or state of having sufficient knowledge, judgment, skill, or strength (as for a particular duty or in a particular respect)” (Merriam-Webster, n.d.). In law, however, competence means rational, qualified, admission (as in evidence), and mentally fit (to give testimony in a court of justice) (Black’s Law Dictionary, Cornell Law School). In the business, organizational, and management purview, the goal of competence is to create adaptable, productive employees who can respond to dynamic workplace environments and add value to an organization, rather than contain isolated knowledge and skills (Baartman et al., 2006, Garavan and McGuire, 2001, Prahalad and Hamel, 1990). Education emphasizes competence is related to practicality, relevance to the future occupation, and the “basic, no-frills learning related to life roles” (Norris, 1991).

The AACN currently uses the definition of competence originating from the discipline of medicine, where it is dynamic, contextual, and measurable (AACN, 2012; Frank et al., 2010a; Snell et al., 2014). The distinction between competence and competency is the key feature of a competency being observable and measurable (Frank et al., 2010a). According to Khan and Ramachandran (2012), the term competency should be used for the skill itself, whereas competence is the ability to perform the skill contextually and is an attribute of the individual. Competency is a component of knowledge, skill, and judgment demonstrated in practice, while competence is an individual’s capability to consistently integrate knowledge, skill, and judgment in practice (Moghabghab et al., 2018). One synthesis of the myriad of definitions concluded that competency was a complex set of behaviors built on the components of knowledge, skills, and attitudes, whereas competence was personal ability (Carraccio et al., 2002).

The push for competence as an educational outcome has not gone without substantial critique through the decades (Bevis, 1988, Diekelmann et al., 2005; Ironside et al., 2007). Many have offered warnings against a steadfast focus on a minimum level view of competence, as it risks deterrence from the pursuit of excellence or expertise and creates technicians rather than professionals (Brown, 1994, Hawkins et al., 2015, Malone and Supri, 2012, Norris, 19911994, Pijl-Zieber et al., 2013). Similarly, critics argue the act of reducing competence to behaviorism narrows it to the acquisition of atomized, easily measurable practical skills, in lieu of overall professional expertise (Fernandez et al., 2012, Hawkins et al., 2015, Huddle and Heudebert, 2007, Malone and Supri, 2012). Eraut (1998) described competence as tolerably good, and similarly Watson summarized competence as “often no more than a lack of incompetence” and purported it as anti-educational and a threat to professional development (​Watson, 2002, p. 477).

Hodkinson (1992) questioned the effect on learning with increased emphasis on competence in the workplace and theorized that some learning was best done in absence of workplace pressures and constraints. Lingard, 2009, Lingard, 2013, Lingard, 2016 warned against a strictly individualistic view of competence because competent individuals together can create an incompetent team and suggested complementary consideration of collective competence. Hodges (2006) described four discourses of competence: as knowledge, as performance, as a reliable test score, and as reflection. He further argued that exclusively defining competence as one discourse at the exclusion of all others, results in differing degrees of incompetence such as poor interpersonal skills, inability to synthesize contextual information, lack of integration of relevant knowledge with performance, prolongation of novice level behaviors, and reliance on superficial self-assessments; therefore, no single perspective of competence should stand alone. Within these overlapping and contrasting definitions and interpretations of competence lies the reality that educators are tasked with teaching and assessing multiple nuanced components of the concept academically, clinically, and professionally. Much of the dialogue surrounding competence arises from pedagogical and philosophical differences underpinning the understanding, interpretation, teaching, and assessment of competence, such as behaviorism, cognitivism, constructivism. (Tavares et al., 2020).

Several theoretical frameworks involving competence exist in the health care professions domain, including Benner’s Novice to Expert framework (Benner, 1984), Miller’s Pyramid of Assessment (Miller, 1990), The Cambridge Model (Rethans et al., 2002) and Messick’s (1984) framework. Benner’s Novice to Expert framework has been widely used for decades in nursing education and professional clinical ladder development, with competence defined as the midpoint between novice and expert. Benner defined the competent nurse as having some degree of mastery and ability to recognize patterns, however, lacks the speed and flexibility of a more proficient nurse (Benner, 1984).

Miller’s Pyramid of Assessment described four stages of development: “knows, knows how, shows how, and does” as the cognitive and behavioral steps an individual progresses through from knowledge acquisition to task performance, with competence defined as “knows how” (Miller, 1990). Miller’s model assumes that competence predicts performance and ignores contextual and individual factors that may influence performance. Rethans and colleagues (2002) modified Miller’s Pyramid and developed The Cambridge Model to include those additional factors, such as systems-related and individual-related influences. Moreover, they distinguish ‘competence’ as what is demonstrated in a test situation and ‘performance’ as what is demonstrated in real clinical practice. Similarly, Messick (1984) contrasted competence and performance whereby 'competence' is an individual’s knowledge and abilities in ideal circumstances and 'performance' is what is done in existing circumstances using knowledge and abilities in the setting of various contextual influences.

Based on synthesis of the literature, the following uses of the concept of foundational competence were identified, 1) to guide programmatic curriculum, 2) to inform pedagogical practice, including teaching and learning; and 3) to discern assessments and assessment criteria. Significant gaps remain in the definition of competence for the nursing discipline which limit moving forward with CBE. These discrepancies in the antecedents, attributes, and defining characteristics of foundational competence result in a struggle for nurse educators to implement curricular adjustments and identify necessary changes to pedagogical practices and student assessments integral to CBE. Therefore, this concept analysis addresses those gaps.

### 3.1.1. Concept antecedents

Antecedents are events or incidents that are present prior to the occurrence of the concept (Walker and Avant, 2019). The antecedents of foundational competence are the: 1) nursing education program, 2) learner, 3) clearly defined ideal outcomes and professional standards (i.e., *The Essentials* (AACN, 2021)), 4) opportunity for a clinical encounter, and 5) prior experience (Fig. 1).

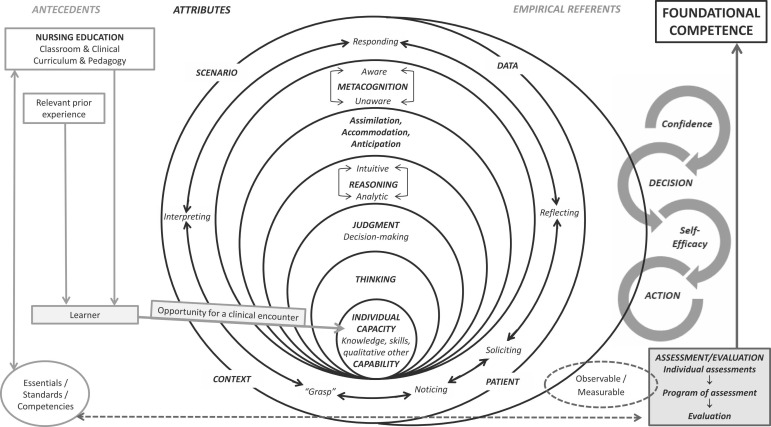


Fig. 1. Foundational Competence Conceptual Model.

## 3.2. Nursing education program

Quality prelicensure and graduate nursing education programs include intentional curriculum, trained educators, and learners who progress through defined courses and, if successful, graduate with a degree and pass a certifying exam. The education program includes the integrated processes of teaching, learning, and assessment using a variety of classroom-, laboratory- and clinical-based practices and experiences to facilitate the development of learners with competence by the time of graduation.

## 3.3. The learner

The learner in this case, is the prelicensure or graduate nursing student who has prior knowledge, skills, attitudes, behaviors, and life experiences they bring with them to the educational setting. Within this constructivist understanding, learners use their prior knowledge and experience, coupled with new knowledge and experience, to develop competence and meet the expectations of a nursing student (Merriam and Bierema, 2014). Therefore, despite a standard curriculum and program, embedded into a CBE framework are personalized pedagogical practices wherein teaching, learning, and progression through a program is individualized to ensure each learner meets expected competencies and ultimately develops competence.

## 3.4. Defined ideal outcomes and professional standards

*The Essentials* (AACN, 2021) are the defined ideal outcomes and professional standards of competence for nursing at all levels. They are a guide for programs and educators to inform curriculum, instruction, and assessment. *The Essentials* are published and disseminated to enable student, employer, and public awareness and serve as documentation to which educational efforts must adhere (Hodge et al., 2020).

## 3.5. Opportunity for a clinical encounter

Like the legal definition, competence in nursing education is beholden to clear and defined professional standards which include descriptions of behaviors that are demonstrable of actionable decision-making (Albanese et al., 2008, Ashworth and Saxton, 1990, Boahin et al., 2014, Frank et al., 2010a, Frank et al., 2010b). Thus, competence requires a context or an encounter inclusive of a problem, a task, or a goal to instigate a response from the learner in the form of an action, decision, or behavior, that then can be assessed based on the ideal standard (Albanese et al., 2008, Albanese et al., 2010, Ashworth and Saxton, 1990, Benner, 1984, Fernandez et al., 2012). The opportunity for a clinical encounter is necessary for foundational competence to occur, however the encounter itself is a defining attribute.

## 3.6. Relevant prior experience

Experience, along with associated knowledge and skills, is an antecedent of competence and necessary for successful development and performance (Ashworth and Saxton, 1990, Benner, 1984, Dunbar et al., 2019, Flinkman et al., 2016). Experience is also a direct antecedent to knowledge, since knowledge informs experience; yet it is with experience that holistic knowledge arises and forms the cognitive foundation on which clinical judgment and reasoning are based (Johnson, 2020, Kolb, 2015, Willers et al., 2021, Young et al., 2014).

### 3.6.1. Concept attributes

Defining attributes function to define and differentiate the concept (Walker and Avant, 2019). The defining attributes of foundational competence encompass who the student is, what and how they think, how they feel, what they do, and how and why they do it. For this to occur, the defining attributes must include 1) the clinical encounter, 2) individual capacity and capability, 3) thinking, 4) judgment, 5) reasoning, 6) assimilation, accommodation and anticipation, 7) metacognition and 8) confidence and self-efficacy (Fig. 1).

## 3.7. Clinical encounter

The clinical encounter includes the patient, data, scenario, and context. Clinical teaching and pedagogical practices for CBE include situational experiences of actual practice which allow the learner to interact with patients and other health professionals, participate in decision-making and treatment, and apply knowledge and skills contextually with unique patients who have biological, physiological and psychosocial differences (Young et al., 2014, Willers et al., 2021). Therefore, competence requires the learner to be responsive to and centered on the needs of the patient and the situation (Kavanagh and Szweda, 2017).

Context is integral to competence because it is where the learner actualizes their capacity and capability. Competence is defined by which specific actions are ideal and necessary and how those actions are situated and responded to with reasoning, decision-making, and judgment in the given context. Competence cannot exist without specific contexts where it is deployed, including environmental factors, such as resources, task complexity, time pressure, consequences and risks; and individual factors, such as knowledge, experience, characteristics, and mood (Charette et al., 2019, Fernandez et al., 2012, Nabizadeh-Gharghozar et al., 2021, Numminen et al., 2015). Newer models of nursing student assessment, for example the National Council of State Boards of Nursing Clinical Judgment Model, intentionally incorporate the significant role of context into their framework (Dickison et al., 2016, Dickison et al., 2019). Additionally, the clinical encounter allows for role modeling, professionalization and socialization into the clinical culture, which develops situational awareness and fosters agility in practice (Claeys et al., 2015, Willers et al., 2021).

## 3.8. Individual capacity and capability

Framing competence as an outcome of an individual’s capacity and capability aligns with CBE’s emphasis on transitioning from what a learner should “know” to what a learner must be “able to do” with that discipline-specific knowledge (AACN, 2019). Capacity refers to individual features, such as knowledge, skills, and attributes whereas capability refers to what an individual does or is able to do (Hartviksen et al., 2019, Melacarne and Nicolaides, 2019, Nagarajan and Prabhu, 2015). There is strong consensus that competence incorporates an individual’s ability, beyond just knowledge and skills—referred to as *qualitative other* in this paper. Features of qualitative other vary widely, including attitudes, behaviors, values, motives, intelligence, morality, empathy, and empowerment (Carraccio et al., 2002, Epstein and Hundert, 2002, Fernandez et al., 2012, Frank et al., 2010a, Frank et al., 2010b, Nabizadeh-Gharghozar et al., 2021, McClelland, 1973, Van Der Vleuten et al., 2010).

The idea that competence and competent performance are more than having prerequisite knowledge and skills originated with McClelland (1973) who found that traditional tests of knowledge and academic aptitude did not predict future job success, rather superior performance was related to underlying traits and enduring personal characteristics. This led to The Iceberg Model wherein the tip of the iceberg portrays the visible, thus observable and measurable, knowledge and skills. Everything else, or the *qualitative other*, is hidden below the water’s surface, not readily apparent nor easily observable and yet directly influence an individual’s ability to use their knowledge and skills to perform effectively (McClelland, 1998).

### 3.8.1. Higher order cognition and competence

Synthesis of the literature suggests transitioning from lower order to higher order cognitive processing involves thinking, judgment, assimilation, accommodation, anticipation, reasoning, and metacognition, respectively (Brown Tyo and McCurry, 2019, Clemett and Raleigh, 2021, Hussein et al., 2021, Klenke-Borgmann et al., 2020, Rhodes, 2019, Wong and Kowitlawakul, 2020). As teaching and assessment practices are being organized around a CBE framework, educators will need design and implement intentional curricular learning activities specific to teaching and assessing these cognitive processes, such as unfolding cases, problem-based learning, and simulation-based education. The interlocking concentric circle helix in the conceptual model (Fig. 1) represents how the learner navigates through these related, yet conceptually distinct, iterative, dynamic processes.

## 3.9. Thinking

Thinking is the lowest order cognitive process and serves as the foundation for judgment, reasoning, and metacognition. Critical thinking has long been espoused as essential for all nurses, however multiple ways of thinking are necessary for competence, such as creative, systems, and complexity thinking (Benner et al., 2010, Brown Tyo and McCurry, 2019, Wong and Kowitlawakul, 2020). Critical thinking is the skill of using logic and reasoning to aid in what to believe and what to do; and in the context of healthcare to identify solutions or approaches to clinical or practice problems. Also, it is the ability to deduct and induct information inputs (Ennis, 2011, Manetti, 2019, Sanders and Moulenbelt, 2011, Willers et al., 2021, Wong and Kowitlawakul, 2020). Creative thinking is the basis of science, is required to overcome complex problems, and is a complement to and fosters critical thinking (Chan, 2013, Klausen, 2013, Pavill, 2011, White et al., 2016).

There is increasing need for systems and complexity thinking in today’s healthcare environment due to a system that is highly dynamic with periods of stability and chaos yielding varying degrees of uncertainty (Begun et al., 2003, Khan et al., 2018, McDaniel et al., 2009). *The Essentials* specifically highlights systems thinking as a core competency, defined as seeing all elements as interrelated in a given environment and identifying patterns of change and underlying structures of complex situations (AACN, 2021; Plack et al., 2018). Complexity thinking involves acknowledging the chaos and fostering innovative adaptation, thus enabling transformation (Khan et al., 2018). It aids in making sense of natural phenomena, such as the human response to problem solving and adaptation to change using professional self-regulation (Ellis, 2016).

## 3.10. Judgment

Clinical judgment and clinical reasoning are often used as interchangeable terms, as judgment informs reasoning and reasoning informs judgment, however, they are distinct processes and concepts (Alfaro-LeFevre, 2019, Hussein et al., 2021, Klenke-Borgmann et al., 2020, Lasater, 2011, Manetti, 2019, Mariani et al., 2013, Tanner, 2006, Victor-Chmil, 2013). Clinical judgment is an observable outcome of critical thinking and clinical reasoning. It is the process by which a clinician makes decisions based on knowledge, evidence, intuition, critical thinking, and clinical reasoning and is directly related to care outcomes (Betts et al., 2019, Clemett and Raleigh, 2021, Hussein et al., 2021, Klenke-Borgmann et al., 2020, Manetti, 2019, Victor-Chmil, 2013). Tanner’s (2006) sentinel clinical judgment model in nursing describes the cyclical phases of the judgment process, including soliciting, noticing, interpreting, responding, and reflecting. Clinical judgment is influenced by critical thinking, is a surrogate of decision making and a precursor to clinical reasoning and action (Klenke-Borgmann et al., 2020; Manetti, 2019; Mariani et al., 2013; Tanner, 2006).

## 3.11. Reasoning

Clinical reasoning is the application of critical thinking to a specific clinical situation in the presence of reflection and metacognition. It involves analyzing, synthesizing, hypothesizing, anticipating, reflecting, evaluating, and revising. It uses judgment to solve problems embedded in practice and to effect outcomes (Brown Tyo and McCurry, 2019, Pesut and Herman, 1999, Simmons, 2010, Victor-Chmil, 2013, Wong and Kowitlawakul, 2020, Young et al., 2014). Reasoning incorporates cognitive and metacognitive processes and is the process by which one comes to an understanding through a bidirectional interaction of analytic and non-analytic processes, or dual-process theories (Evans and Stanovich, 2013, Handley and Trippas, 2015, Kahneman, 2011, Pennycook et al., 2015, Sloman, 2014, Thompson et al., 2011, Victor-Chmil, 2013, Young et al., 2014). Analytic processing is rational, slow, conscious, deliberate, and uses deductive reasoning, whereas non-analytic processing is intuitive, rapid, subconscious, and based on pattern recognition (Eva, 2005). Diagnostic reasoning is a type of clinical reasoning used by advanced practice nurses and medical providers to ascertain a differential diagnosis and ultimately either a diagnostic label or a diagnostic error. In general, all nurses use diagnostic reasoning including strategies such as pattern recognition, heuristics, ruling out the worse-case scenario, or the key feature approach (Durning et al., 2020, Lambe et al., 2016, Pesut and Herman, 1992).

## 3.12. Assimilation, accommodation, and anticipation

Assimilation and accommodation are the desired pattern recognition goals of a practice-based professional and are distinguishing factors of competence and expertise (Johnson, 2020). Returning to the concept of “grasp” as part of the judgment process, a grasped experience is transformed into new knowledge through reflection-in-action, reflection-on-action, and active experimentation of applying this knowledge to a new situation (Johnson, 2020, Schön, 1983). Tension between grasping and transforming knowledge leads to assimilation and accommodation. Assimilation occurs when knowledge is consistent with previous cognitive frames, contrasted with accommodation when knowledge is opposed to existing cognitive frames (Johnson, 2020, Kolb, 2015). Anticipation and reflection-beyond-action are the metacognitive practices of critically looking forward, by also reflecting back and applying knowledge and experience learned from one experience to another situation with contextual details that are either similar or different, yet related (Benner et al., 1996, Dreifuerst, 2009, Pesut, 2004, Tanner, 2006).

## 3.13. Metacognition

Metacognition is the highest level of thinking and reflection involving internal processes of monitoring and self-regulating cognition and behavior during judgment, reasoning, decision-making, and action (Dreifuerst, 2009, Kuiper and Pesut, 2004, Pesut, 2004, Rhodes, 2019, Thompson et al., 2011). The role of reflection and metacognitive monitoring fosters awareness of self-strengths and limitations and moderates the impact of the Dunning-Kruger effect of unawareness of incompetence (Dunning, 2011, Dunning et al., 2003, Kruger and Dunning, 1999, Mata et al., 2013, Pennycook et al., 2015, Pennycook et al., 2017, Rhodes, 2019, Thompson and Johnson, 2014). Metacognition is directly related to accuracy of subjective knowledge of skills, abilities, and limitations (Mata et al., 2013; Rhodes et al., 2019).

## 3.14. Confidence and self-efficacy

Confidence alone does not correlate to accuracy, competence, nor action. Rather, it is a response to information in the form of a feeling, reflecting the cognitive ease of accomplishment or processing the experience (Kahneman, 2011). Confidence is an antecedent to self-efficacy (Van Der Bijl and Shortridge-Baggett, 2002; Zulkosky, 2009) and a facilitator for decision-making, whereas self-efficacy is linked to action, performance, and/or behavior related to the decision (Bandura, 1986a, Bandura, 1986b, Bandura, 1989). Self-efficacy is as a construct of one’s self-confidence in abilities in general, and specifically the belief in one's ability to carry out a task or achieve a goal that will produce a certain outcome (Bandura, 1977, Bandura, 1986b). There is strong correlation between self-efficacy and successful performance of an action and when an individual both believes they can do something and has the skills to do it, that they will do it, even if it is difficult (Bandura, 1986b). Because self-efficacy is linked to performance in the form of some actionable outcome, it can be measured and assessed (Chen et al., 2001, Scherbaum et al., 2006; Van Der Bijl and Shortridge-Baggett, 2002). In alignment with Bandura’s original description (1977; 1986b), self-efficacy is intentionally placed in this concept analysis within the confines of a specific action in a specific context (Fig. 1).

## 3.14.1. Concept empirical referents

Empirical referents are phenomena that demonstrate the occurrence of the concept and how you recognize or measure the defining attributes. Often, they are identical to the defining attributes (Walker and Avant, 2019), as is the case here, with the addition of the act of assessment and evaluation. Each attribute can be measured individually and the collective assessments over time, or program of assessment, is the evidence supporting the evaluation and designation of foundational competence. Without assessment and evaluation, foundational competence holds little meaning.

## 3.15. Assessment and evaluation

Assessment is the information documenting learner progress toward intended outcomes (Lozano et al., 2017). It is integrated across all levels of learning (e.g., course, programmatic, and institutional), in alignment with curricula, and used to inform teaching and learning (Suskie, 2018). In contrast, evaluation is a judgment based on the information gathered through assessment(s). Evaluation is the culmination of the overall assessment process, including individual and program assessments, which encompass the interpretation of assessment data to make an informed and justifiable decision (e.g., assigning a grade, graduation from a program) (Lozano et al., 2017, Moreau, 2021, Suskie, 2018, Weinstein, 2015).

No single method of assessment is considered suitable for all purposes and the best approach is a program of assessment using multiple types of data collected over time to yield an overall informed evaluation (Eva et al., 2016, Holmboe et al., 2018, Hsiao et al., 2020, Moreau, 2021, Schuwirth and Ash, 2013, Suskie, 2018, Van Der Vleuten et al., 2015, Watling and Ginsburg, 2019). However, CBE necessitates assessment of all the defining attributes of competence contextually as well as solely assessment of knowledge and practice commonly seen in didactic and clinical nursing education today. Moreover, assessments can provide either direct or indirect evidence of learning, where direct evidence is tangible, observable, and compelling, and indirect evidence is less clear, less convincing, and consists of proxy signs indicating that students are likely learning (Suskie, 2018). Assessments can be objective and subjective, qualitative and quantitative, formative and summative, and include elements such as tests, papers, projects, performance checklists, objective structured clinical examinations, portfolios, and written reflections. In all cases however, feedback must be included in the assessment process.

Thoughtful and integrated assessments are necessary to ensure a holistic and informed evaluation of competence (Moreau, 2021). An overly simplistic or rigid view of assessment, for example a checklist, invites risk based on the erroneous assumption that correct performance of a skill equates to competence. Consider the case of the “lucky guess” or the “happy accident” wherein the right action was done, but for the wrong reason. The practice of assessing only that which is observable operates on the assumption of a causal relationship between thinking and action which may not be congruent (Dreifuerst, 2015, Suskie, 2018). There remains significant debate around how to assess competence, both globally and specifically. Yet, it is important to remember competency-based assessment cannot occur without first competency-based instruction and pedagogy informed by professional standards (Flinkman et al., 2016, Hsiao et al., 2020, Lewallen and Van Horn, 2019, Lozano et al., 2017, Schuwirth and Ash, 2013, Tavares et al., 2020, Van Der Vleuten et al., 2010). *The Essentials* functions as the fundamental reference point to inform nursing programs and educators. It serves as the textual, publicly available document defining the expectation of what competence looks like and holds the discipline accountable to this defined standard (AACN, 2021; Hodge et al., 2020; Holmboe et al., 2018). Therefore, the expected standard as outlined by *The Essentials* is linked to each graduating individual nurse who has proven their competence over time through assessments and evaluation.

### 3.15.1. Concept consequences

Consequences are events, incidents, or outcomes of the concept (Walker and Avant, 2019). In this concept analysis, the outcome is foundational competence itself. Yet, there are three qualifiers – it is binary, not a continuum; a state, not a trait; and refers to an individual, not a collective or team.

## 3.16. Foundational competence as a binary

Competence can be described as a binary and alternatively, as residing on a spectrum or continuum (Eraut, 1998, Khan and Ramachandran, 2012, Mills et al., 2020). In nursing education, it is necessary for competence to be binary, as right or wrong, yes or no, competent or incompetent. The process by which this binary distinction of foundational competence is authenticated lies with the appropriate authorities and regulatory bodies governing the discipline. Assurance of competence of any graduate of a formal education program must be present in order to be accountable to society and maintain credibility of the discipline.

## 3.17. State of foundational competence

Although foundational competence is a binary distinction, the definition of what foundational competence is and looks like is a state, not a trait. A trait is enduring, whereas a state is temporary, integrative, and dynamic. Specifically, foundational competence is an integration of numerous individual attributes with each other, as well as those attributes with performance and in relation to contextual factors (Ashworth and Saxton, 1990, Epstein and Hundert, 2002, Eraut, 1998, Frank et al., 2010a, Hodges, 2006). Not only is competence dynamic, it shifts over time and context. Therefore, competence is time and contextually bound, and learners can be found competent one day in one context and not competent another day in another context (Dunbar et al., 2019, Hodges, 2006).

## 3.18. Individual foundational competence

Foundational competence is a designation of an individual, not a team or group. The reality of formal education and practice requires both individual and collective competence in team-based health care, however not in educational and regulatory contexts (Gruppen et al., 2012, Lingard, 2009, Lingard, 2013, Lingard, 2016, Shinners and Franqueiro, 2017). Program outcomes will continue to document collated learner achievement and competence, and these are based on individual outcomes.

# 4. Discussion

This concept analysis describes the components and uses of foundational competence in the context of nursing education. It can guide administrators and educators with programmatic decisions, curriculum, instruction, and pedagogical practices, and discern criteria and practices for learner assessments and evaluation. Until now, a holistic description of competence has been lacking, which placed limits on the tangibility and application of *The Essentials* to nursing education*.* Rather than attempting to fit the current curriculum and practices to a CBE framework, intentional and integrated pedagogical practices should be paired with appropriate and robust assessment modalities. Incorporating each of the attributes (Fig. 1) is paramount for foundational competence to serve as a meaningful outcome that genuinely encompasses *The Essentials.*

Promising work is emerging regarding CBE, such as a competency roadmap focusing on assessment (D’Aoust et al., 2021), a digital system to manage required assessment data (Hsiao et al., 2020), and incorporation of entrustable professional activities (Anthamatten et al., 2019, Bargagliotti and Davenport, 2017). However, piecemeal approaches address only a component or aspect of CBE and lack the holistic and integrated implementation strategy needed for disciplinary change. The question remains – without a codified definition and consensus about what competence is, how can we consistently teach and assess it across programs?

There is risk of dogmatic focus on only one type of competence at the exclusion of the other. Isolated focus on foundational competence is ineffective and circular, in that: 1) accountability to the health care needs of society; which 2) drives the need to assess competence of both student and practicing nurses; which 3) compels the need for criteria to be taught and assessed,;which 4) obliges the need for creation of competency texts to inform curriculum in the education setting; which 5) enables curricular emphasis only on what can be assessed; and thereby 6) sacrificing those attributes of competence that are logistically challenging or impossible to quantify. This yields health care professionals who struggle with transition to practice and lack competence as clinicians. Therefore, foundational competence for prelicensure and graduate nursing education can only be the beginning. This work needs to continue with the remaining difficult task of defining the concept of functional competence, that of experienced, licensed, practicing nurses. This step is critical if we are to overcome the many challenges new-to-practice nurses face and the revolving door of those leaving the profession too soon (Hampton et al., 2021). Moreover, the risk of divorcing foundational competence and isolated focus on functional competence ignores the need and demand for regulation and accountability and risks the potential chaos of an unchecked health care system.

Efforts made by nursing programs and educators to map *The Essentials* to current curriculum and learner experiences is important, however potentially is short-sighted (Diekelmann et al., 2005). Changes are necessary to teach for application, requiring emphasis not on content, rather on how it is taught with incorporation of active learning pedagogical strategies. Competency-based teaching transcends curriculum and must be paired with competency-based assessments. Both must address the antecedents, attributes and empirical referents of foundational competence and be integrated into *The Essentials* domains and levels of the nurse (AACN, 2021).

# 5. Conclusion

Foundational competence as presented in this analysis, grounds education, training and regulatory purposes through teaching, learning and assessment. Going forward, nurse educators need to embrace changes to both pedagogical and assessment practices to ensure learner competence. An integrated understanding of the definition of foundational competence, including the philosophical underpinnings, roles and functions it serves, is essential to the CBE movement in nursing education.

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# Declaration of Competing Interest

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