

Assessment Fact Sheet: Performance Assessment using Competency Assessment Tools

This fact sheet provides the following:

- background information about the development and design of the competency assessment tools
- educational theory underpinning competency assessment tools
- methods of recording performance in competency assessment
- instructions to guide assessors/ educators when using the EdCaN Competency Assessment Tools for clinical skills.

Background

A range of methods for competence assessment exist. Within the realm of direct observation, interest in tools or checklists to assess discreet clinical skills remains prominent.

Checklists have long been used in clinical settings and were designed to evaluate skills, specific procedures, work practices, communication and application of knowledge. Within these tools, performance skills are generally translated into specific actions which can be ticked off, in boxes, during an assessment. The main advantages for using checklists include ease of administration, scoring, and the provision of feedback.

Checklists uphold the historical preference for dichotomous-based reporting when assessing skills. Where at the end-point of the process of competency training and assessment, the labels 'competent' or 'not yet competent' are attributed to behaviours as measured against set criteria. Such models have roots in the vocational education and training (VET) sectors, and promote non-competitive learning environments suitable for adult learners. However criticism of checklists suggests that they are limited in that they focus on psychomotor skills and provide only a 'snapshot' of an individual's performance.^{1,2}

Competency tools using rating scales are a more complex and integrated version of assessing clinical skills and competence. Such tools include a description of the skill and graduated clinical indicators which identify the degree to which an individual has exhibited the skill.²

Many competency assessment rating tools are in use throughout nursing settings. Bondy³ argued that a carefully developed criterion-referenced rating scale for clinical evaluation of individual performance can be more reliable and valid than a checklist.²

A number of competency scales have been developed including but not limited to Bloom's Taxonomic Scales; the Dreyfus Model for Skill Acquisition; and Benner's: From Novice to Expert Model. However it is apparent within the literature that no one assessment tool or scale is superior due to a lack of validity and reliability testing.

The EdCaN Competency Assessment Tools are the product of a review of the literature, validation survey and small scale pilot.

Tool design

A limited review of the literature has guided the construction design of the assessment tools and the strategies for testing validity, reliability and feasibility of assessment tools. Each competency assessment tool comprises three major components:

- criteria
- indicators and
- a graduated scale.

Criteria

The literature supports the inclusion of a set of criteria upon which competence assessment can be measured. Tool development usually begins with the identification of the essential skill items which combine to characterise the overall skill of performing a task or role. The items chosen are generally observable behaviours or minimal elements of clinical practice. Authors (either researchers or expert clinicians), focus groups or panels of experts can be employed to devise the item lists. Alternatively items can be sourced from existing documents or standards, such as:

- specialist nurse standards
- advanced practice/ specialist level nursing competency statements
- national guidelines for practice.

Indicators

The literature supports the use of rubrics or indicators to assist with consistent assessment and evaluation of performance, precisely pinpointing what constituted the decision for grade/ scale. Rubrics provide specific descriptions of the responses for each criteria and match proficiency levels and quality ratings. Developmental learning theories can be used to inform the descriptions.⁴

Graduated scale

The use of a scale facilitates the identification of the degree of skill or mastery. Adaptation or combination of commonly used scales such as Blooms Taxonomy and the Bondy rating scale is frequent. A scale seeks to summarise the differences in the use of time, space, equipment and expenditure of energy across the development continuum.

Educational theory underpinning the competency assessment tools

The provision of safe and effective care to people affected by cancer requires a nursing workforce with well-developed problem solving skills, sound underpinning knowledge, and accuracy and proficiency in practical skills. To ensure nurses are competent to perform their role, competency assessment tools are required that provide valid and reliable measures of a nurses' clinical performance. Such competency assessment tools must be developed from sound theoretical and evidence based principles.

The EdCaN Competency Assessment Tools for clinical skills draw on Bloom's Cognitive Domain Taxonomy and the five-point Bondy rating scale to provide frameworks for guiding the design of the tools and associated scoring matrices.

"Bloom's taxonomy of educational objectives" is a system for categorising educational objectives according to a hierarchy of behaviours. The concept of taxonomy refers to the nature of the knowledge, skills and attitudes to be learned, in ranked order, with simple behaviours being listed first and more complex behaviours listed thereafter. According to this theory, learners must successfully achieve lower level behaviours, before they are able to adequately learn behaviours at the higher levels. Moreover, Bloom's taxonomy is divided into three broad domains: cognitive, affective and psychomotor. While the three domains are described as separate entities, they are, interdependent and can be experienced simultaneously.±

The cognitive domain is known as the 'thinking' domain. Learning in this domain involves the acquisition of information and refers to the learner's intellectual abilities, mental capabilities and thinking processes.⁵ Objectives in this domain are divided into six levels. These levels increase in complexity, from knowledge as the baseline level, through comprehension, application, analysis, synthesis, to evaluation as the highest level.⁶ The levels are described in Table 1.

Table 1: The Cognitive Domain Taxonomy and Description⁶

Category/ Level	Description
1. Knowledge	Defined as the acquisition & remembering of previously learned material. This may involve the recognition and recall of a wide range of material, from specific facts to complete theories, but all that is required is the bringing to mind of the appropriate information.
2. Comprehension	Defined as the ability to grasp the meaning of material. Involving translating, paraphrasing, summarizing & interpreting material.
3. Application	Refers to the ability to use learned material. This involves selecting, relating, transferring and applying rules, methods, concepts, principles, laws and theories.
4. Analysis	Refers to the ability to break down a concept/ material into parts. Involving, explaining, identifying, distinguishing, organizing and discriminating.
5. Synthesis	Refers to the ability to put parts together to form a new whole. Involving constituting, combining, specifying & proposing.
6. Evaluation	Concerned with the ability to judge the value of material. This involves validating, arguing, appraising and reconsidering.

Nursing clinical performance encompasses more than just cognitive skills. Bloom therefore also describes levels of cumulative and increasing complexity for both the affective and psychomotor domains. The affective domain addresses interests, attitudes, opinions, appreciations, values, and emotional sets and reflects change in attitude or behaviour. The psychomotor domain focuses on motor-skill development. Bloom thus suggests the well rounded and fully functioning person needs development in all three domains.

Kathleen Bondy³ captures the essence of Bloom's affective and psychomotor domains by applying the concept of a hierarchy of increasing competency to the development of a five-point rating scale for evaluation of nursing student clinical performance. Bondy's rating system, adapted from the Dreyfus Model of skill acquisition was developed to be applied to any professional behaviour and is intended to evaluate the amount of supervision required to carry out professional responsibilities. The five-point Bondy rating scale also evaluates accuracy, safety, effect, and affect. Each of the five points in the scale are described in table 2.

Table 2: The five-point Bondy rating scale³

Scale label	Score	Standard of procedure	Quality of performance	Level of assistance required
Independent	5	Safe Accurate Achieved intended outcome Behavior is appropriate to context	Proficient Confident Expedient	No supporting cues required
Supervised	4	Safe Accurate Achieved intended outcome Behavior is appropriate to context	Proficient Confident Reasonably expedient	Requires occasional supportive cues
Assisted	3	Safe Accurate Achieved most objectives for intended outcome Behavior generally appropriate to context	Proficient throughout most of performance when assisted	Required frequent verbal and occasional physical directives in addition to supportive cues
Marginal	2	Safe only with guidance Not completely accurate Incomplete achievement of intended outcome	Unskilled Inefficient	Required continuous verbal and frequent physical directive cues
Dependent	1	Unsafe Unable to demonstrate behavior Lack of insight into behavior appropriate to context	Unskilled Unable to demonstrate behavior/ procedure	Required continuous verbal and continuous physical directive cues
X	0	Not observed		

In developing the EdCaN Competency Assessment Tools, both Bloom’s and Bondy’s learning theories and associated descriptions of behavioural levels have been used to inform the descriptions of performance specified in the competency assessment tools. As the EdCaN Tools have been developed for assessment of specialist practice, the specific behavioural level reflects the level of performance expected to be demonstrated by a Specialist Cancer Nurse (SCN). Indicators in the competency assessment tool are thus mapped against two vertical dimensions, representing relative difficulty and quality of performance according to both of the developmental learning theories described above. Table 3 demonstrates the general hierarchy of indicators used in the competency assessment tools.

Table 3: Indicator hierarchy

Score	Indicators			
0	<p>Indicators describe incomplete/ unsafe practice using the following stems:</p> <ul style="list-style-type: none"> • Does not ... • ...incomplete • ...not obtained/ performed • Inappropriate... • Inaccurate... 			
1	<p>Indicators describe a minimum level of safe practice.</p> <table border="0"> <tr> <td style="vertical-align: top;"> <p>Demonstration of the cognitive elements of the skill are limited to the lower levels on taxonomic scale and are described using the following stems:</p> <ul style="list-style-type: none"> • Recalls... • Lists... • Describes... • ...lacks logical progression or critical inquiry • ...without specificity to... • ...evidence based strategies not attempted... </td> <td style="vertical-align: top;"> <p>Demonstration of the psychomotor elements of the skill are limited to lower levels on a taxonomic scale and are described using the following stems:</p> <ul style="list-style-type: none"> • ...obtained/ collected • Checks... • Performs.. • Slow & awkward technique... </td> <td style="vertical-align: top;"> <p>Demonstration of autonomy is limited using the following stems:</p> <ul style="list-style-type: none"> • ...requires occasional prompts • ...requires supervision </td> </tr> </table>	<p>Demonstration of the cognitive elements of the skill are limited to the lower levels on taxonomic scale and are described using the following stems:</p> <ul style="list-style-type: none"> • Recalls... • Lists... • Describes... • ...lacks logical progression or critical inquiry • ...without specificity to... • ...evidence based strategies not attempted... 	<p>Demonstration of the psychomotor elements of the skill are limited to lower levels on a taxonomic scale and are described using the following stems:</p> <ul style="list-style-type: none"> • ...obtained/ collected • Checks... • Performs.. • Slow & awkward technique... 	<p>Demonstration of autonomy is limited using the following stems:</p> <ul style="list-style-type: none"> • ...requires occasional prompts • ...requires supervision
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2	<p>Indicators describe a level of proficient practice.</p> <table border="0"> <tr> <td style="vertical-align: top;"> <p>Demonstration of the cognitive elements of the skill reflect higher levels on taxonomic scale and are described using the following stems:</p> <ul style="list-style-type: none"> • Appreciates... • ..aware of wider context • Acknowledges.... • Analyses... • Tailors... • Evaluates... • Rationales provided.. • Facilitates.... </td> <td style="vertical-align: top;"> <p>Demonstration of the psychomotor elements of the skill reflect higher levels on a taxonomic scale and are described using the following stems:</p> <ul style="list-style-type: none"> • Efficient and dexterous technique... • At ease... </td> <td style="vertical-align: top;"> <p>Autonomy is demonstrated, using the following stems:</p> <ul style="list-style-type: none"> • ...independent • ...confident </td> </tr> </table>	<p>Demonstration of the cognitive elements of the skill reflect higher levels on taxonomic scale and are described using the following stems:</p> <ul style="list-style-type: none"> • Appreciates... • ..aware of wider context • Acknowledges.... • Analyses... • Tailors... • Evaluates... • Rationales provided.. • Facilitates.... 	<p>Demonstration of the psychomotor elements of the skill reflect higher levels on a taxonomic scale and are described using the following stems:</p> <ul style="list-style-type: none"> • Efficient and dexterous technique... • At ease... 	<p>Autonomy is demonstrated, using the following stems:</p> <ul style="list-style-type: none"> • ...independent • ...confident
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Methods of recording performance levels

Within the EdCaN Competency Assessment Tools, analytical response scores that correlate with the performance descriptions are summed together to produce an overall score that parallels with a graduated scale comprising three band level descriptions:

- not yet competent
- beginning competence as specialist cancer nurse
- established competence as specialist cancer nurse.

The band level descriptions provide a summary of performance and in this way reflect holistic assessment recording, representing an overall impression of performance.

Instructions for competency assessment of clinical skills:

- The assessment of competence must be carried out by nominated workplace assessors or nurse educators who have relevant expertise in the skill to be assessed and in performance assessment.
- The assessor should ensure that the candidate has had appropriate preparation for and information about the competency assessment, including opportunities for developing the skill and access to appropriate learning resources.
- The assessment of performance normally involves one candidate and one assessor and should be held at a time and place that is mutually convenient.
- Assessments should be planned at times which allow the candidate to be at optimal performance.
- Sufficient time should be allowed to complete the assessment. The length of timing for the assessment will vary depending on the competency being assessed and the individual candidate, but a period of at least 60 minutes should normally be allocated for the assessment.
- Assessors should limit the number of assessments per day to allow for adequate preparation and focused attention.
- For decisions about competency to be authentic, assessment should be undertaken within the context of practice so as to capture evidence of skills, attitudes and knowledge.
- A combination of assessment methods may be utilised including clinical questioning/ interview and observation. Clinical questioning or interview is useful for assessing knowledge and attitudes, whilst observation measures accuracy of practice and autonomy. Together such methods provide evidence needed for the judgement of competence to be made.
- During assessment, for each criterion one indicator that best describes the candidate's performance should be selected.
- The indicators should be understood as minimum standard. If a candidate easily meets (1) but their practice is not yet at (2) then indicator (1) should be chosen.
- Circle the number representing the chosen indicator.
- The scores for each item should be summed to obtain an overall score to assist with validation of overall competence rating.
- The assessor can prompt the candidate throughout the observation. Such action needs to be recorded in the comments section. Note: If prompts are proffered, scores should reflect the need for supervision.

References

1. Andre, K. (2000). Grading student clinical practice performance: the Australian perspective, *Nurs Educ Today*, 20: 672-679.
2. Tolhurst, G. & Bonner, A. (2000). Development of clinical assessment criteria for postgraduate nursing students, *Collegian*, 7(2):20-25.
3. Bondy, K. N. (1983). Criterion-referenced definitions for rating scales in clinical evaluation. *J Nurs Educ*, 22(9):376-382.
4. Truemper, C.M. (2004). Using scoring Rubrics to facilitate assessment and evaluation of graduate level nursing students, *J Nurs Educ*, 43 (12): 562-564.
5. Bastable, S.B. (2003). *Nurse as educator: principles of teaching and learning for nursing practice*, 2nd Ed, Jones & Bartlett Pub: Canada.
6. Nkanginieme, K.E.O. (1997). Clinical diagnosis as a dynamic cognitive process: Application of Bloom's taxonomy for educational objectives in the cognitive domain, *Med Educ. Online* [serial online], 2: 1. Retrieved 16 Oct 2009 from <http://www.med-ed-online.org/f0000007.htm>