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## Evaluation of assessment in the context of work-based learning: qualitative perspectives of new graduates

### Abstract

**Aim** Evaluation or assessment of competence is an important step to ensure the safety and efficacy of health professionals, including dietitians. Most competency-based assessment studies are focused on valid and reliable methods of assessment for the preparation of entry-level dietitians, few papers have explored student dietitians' perceptions of these evaluations. The present study aimed to explore the perceptions of recent graduates from accredited nutrition and dietetics training programs in Australia. It also aimed to establish the relevance of competency-based assessment to adequately prepare them for entry-level work roles. **Methods** A purposive sample of newly graduated dietitians with a range of assessment experiences and varied employment areas was recruited. A qualitative approach, using in-depth interviews with 13 graduates, was undertaken. Graduates were asked to reflect upon their competency-based assessment experiences as a student. Data were thematically analysed by multiple authors. **Results** Four themes emerged from the data analysis: (i) transparency and consistency are critical elements of work-based competency assessment; (ii) students are willing to take greater responsibility in the assessment process; (iii) work-based competency assessment prepares students for employment; and (iv) the relationship between students and their assessors impacts student experience and assessment performance. **Conclusions** Understanding this unique perspective of students can improve evaluation of future health professionals and assist in validating competency-based assessment approaches.

### Keywords

Assessment, competency standards, education, practice

### Disciplines

Medicine and Health Sciences | Social and Behavioral Sciences

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All authors contributed to the design of the study. CP conducted the interviews. CP and AC undertook the data analysis and drafted the manuscript. SA and EB performed subset of data analysis. All authors verified data analysis and contributed to development of manuscript.

**Conflict of Interest:**

The authors have no conflict of interest to declare.

## **Abstract**

**Aim:** Evaluation or assessment of competence is an important step to ensure the safety and efficacy of health professionals, including dietitians. Most competency-based assessment studies are focussed on valid and reliable methods of assessment for the preparation of entry-level dietitians, few papers have explored student dietitians' perceptions of these evaluations. This study aimed to explore the perceptions of recent graduates from accredited nutrition and dietetics training programs in Australia. It also aimed to establish the relevance of competency-based assessment to adequately prepare them for entry-level work roles.

**Methods:** A purposive sample of newly-graduated dietitians with a range of assessment experiences and varied employment areas was recruited. A qualitative approach, using in-depth interviews with 13 graduates, with differing assessment experiences was undertaken. Graduates were asked to reflect upon their competency-based assessment experiences whilst a student. Data was thematically analysed by multiple authors.

**Results:** Four themes emerged from the data analysis: (i) Transparency and consistency are critical elements of work-based competency assessment. (ii) Students are willing to take greater responsibility in their assessment process. (iii) Work-based competency assessment prepares students for employment. (iv) The relationship between students and their assessors can impact on the student experience and their assessment performance.

**Conclusions:** Understanding this unique perspective of students can improve evaluation of future health professionals and assist in designing valid competency-based assessment approaches.

## **Introduction**

Evaluation or 'assessment' of student performance is a critical step for enabling students and interns to transition to practice from professional preparation programs. Assessment in the professional context highlights the notion of assessment for learning and involves matching performance against competency to practice effectively and safely.<sup>1</sup> The complexity of accurate and reliable competency-based assessment across the health professions is well documented.<sup>2,3</sup> Assessment is defined as 'any purported and formal action to obtain information about the competence and performance of a candidate'.<sup>4</sup> (page195)

The role of practice placements or work-based learning (also known as service learning, clinical placements or internships) is widely acknowledged as necessary for development of professional competence.<sup>5,6</sup> Workplaces provide the environment, challenges and encounters, and students learn through their experiences within these settings.<sup>2,5,7</sup> In Australia the preparation of dietitians involves development of practice skills or competencies, across a wide range of standards, and across three domains of practice: individual case management of patients, food service management and public health nutrition.<sup>8</sup> Students undertake supervised placements in each of these settings during their education (totalling 800 hours, approximately 20 weeks) which are assessed during the final year of their program.<sup>9</sup> Similar to the United States and the United Kingdom, programs for dietitians' work-based learning are primarily hospital based for both food service and individual case management. The third placement must occur in a community or public health setting focussed on gaining competence in prevention of nutritional-related disease and promotion of good health through nutrition in

populations. Over all these settings, student dietitians must demonstrate competency and be assessed as entry-level clinicians, food service managers and public health nutritionists in the respective settings.

Competency standards provide a focus on observable outcomes, are relevant to the workplace, enable delineation of curricula, define readiness for practice and provide a framework for assessment.<sup>10, 11</sup> The methodology to support competency-based assessment in nutrition and dietetics is scarce.<sup>12-17</sup> Of the evidence available, an Objective Structured Clinical Examination (OSCE) has been demonstrated to be an accurate predictor of student performance on placement.<sup>13, 16</sup> Portfolios, which collate evidence of learning and act as tools for reflective practice and evidence of competency<sup>18</sup>, are effective in facilitating learning.<sup>14, 15</sup> Little of this data has explored students' experiences of these and other assessments.

This study aimed to explore recently graduated dietitians' experience of competency-based assessment whilst being a student and reflect upon its relevance in preparation for the work they do in entry-level practice roles. Competency-based assessment was defined as any assessment activity completed as part of an entry-level degree as evidence towards achieving entry-level competence.

## **Methods**

This qualitative study was based on phenomenology where views of the recent graduates' student experience of competency-based assessment was explored.<sup>19, 20</sup> The researchers were interested in the lived experience of recent graduates (less than 12

months post being eligible for employment) and their involvement with assessment during their studies. Ethics approval was obtained from the relevant university human research ethics committees (Approval numbers: 2011001765, 2012000036 and 1200000001).

An email invitation was sent via the professional association's weekly alert inviting recent graduates across the country to participate in the study. Twenty graduates responded to the invitation and met all the eligibility criteria. To ensure graduates with varying student experiences of assessment were included, a purposive sample was selected from these. The researchers were interested in exploring the diversity of assessment experiences including those who were regarded as high performing students, those who had failed and repeated elements of placement, those who were employed immediately upon graduation and also new graduates from culturally and linguistically diverse backgrounds. Some graduates met more than one of these categories and so had a blend of these experiences.

The in-depth interview was chosen for data collection as this provides the opportunity to analyse situations and experiences through conversation and in-depth exploration of the topic.<sup>20</sup> Interviews were conducted by the first author, an academic with significant experience in coordination of student practical placements. An interview plan was developed based on a preliminary analysis of the literature suggesting there was limited knowledge of validity and reliability of assessment systems in the profession. Questions aimed to explore recent graduates' experience of assessment across all domains of dietetics practice (individual case management, community and public health nutrition



and food service management). In particular, challenges of assessment, key elements of this competency-based assessment and the relationship between the competency-based assessment and the work they are required to do as a new graduate were explored as a means of validating entry-level competency-based assessment (Table 1). The majority of interviews were conducted over the telephone except for one which was performed face-to-face for convenience. Interviews lasted between 40 and 80 minutes and were audio recorded. Data were collected until data reached theoretical saturation.

Data from interviews were transcribed verbatim and analysed using a thematic analysis approach. Two authors initially and independently analysed each interview whereby transcripts were coded and then codes were grouped into categories. The two authors then reviewed the categories and through this discussion grouped the categories into themes. Rigor was employed through triangulation<sup>20</sup> whereby a third investigator separately analysed a selection of three of the transcripts to verify the categories and themes. Critical reflexivity was employed<sup>20</sup> whereby the authors attempted to look for meaning behind text and acknowledged their potential biases as part of the analysis.

## **Results**

Interviews were conducted with 13 graduates from 6 of the 14 accredited dietetics programs (at the time of the study) across Australia. Nine of the graduates completed a Bachelor level degree while four completed a Masters program as an entry-level qualification. Twelve of the 13 graduates were employed across a range of settings including research assistant (n=3), hospital dietitian (n=2), rural hospital/community dietitian (n=2), community nutrition (n=2), private practice (n=2), and corporate

company (n=1). One participant was unemployed. Competency-based assessment experiences varied from the standard progression towards competency (meeting key milestones throughout their placement and reaching competency within the standard timeframe (n=9)), to failing and repeating (n=3), including one graduate who was assessed as borderline but eventually performed competently with extension to their individual case management placement time. Three of the participants were from non-English speaking backgrounds.

Four themes emerged from the data analysis: The graduates described (i) transparency and consistency as critical elements of competency-based assessment and (ii) greater responsibility in the assessment process. They acknowledged, (iii) competency-based assessment in the workplace is essential preparation for employment and (iv) the relationship between students and their assessors impacts on the student experience and their performance in assessment tasks.

*Transparency and consistency are critical elements of competency-based assessment.*

Graduates articulated that valid and robust competency-based assessment should be practical, consider entry-level competencies and reflect the requirements of an entry-level practitioner as defined by position or job descriptions for new graduates. From their experiences, participants recalled inconsistencies between university requirements for competency-based assessment and requirements of the placement setting.

“It (the report for assessment) differs based on what your supervisor wants, and what the people at the hospital want to what the uni

wants. ... Really you're writing the report for the hospital and you want to do a good job, and really we're getting trained for the world that you're going to work in. It should be based on that." (Graduate 2)

Participants identified clear communication between the university, placement site and practice educators to be important in the assessment process. Participants spoke about the importance of communication not only for robust final assessment but also to clarify interpretation of competencies, expectations of students and standards of assessment within and between placement sites.

Participants outlined inconsistencies in approaches to assessment between practice settings. For example involvement of a senior clinical supervisor in individual case management settings was felt to improve validity and reliability of assessment. The same was not said for food service and public health nutrition placements where participants expressed concern that some senior dietitians took responsibility for feedback and assessment without having regular involvement with the students.

"With my food service placement we ... all, didn't really have much contact with our supervisor, we were just given a project. So she really had no idea what we were really up to. She just saw the final project. So I think that in a sense she didn't really know what was going on but she still ticked us off anyway." (Graduate 3)

The Competency Standards for entry-level dietitians in Australia<sup>8</sup> were acknowledged as providing a useful framework for assessment but potential improvements were discussed. The graduates explained that the number of performance criteria was overwhelming, and were difficult to interpret and understand. They also reported that their assessors appeared to struggle at times to interpret the Competency Standards, leading to inconsistent expectations of student performance.

*Assessment methods.* Current assessment in work-based settings was reported to be subjective and inconsistent largely because of perceived variations in standards across sites and between educators or supervisors. Graduates explained that students, supervisors and the universities all need to be clear about what an entry-level practitioner ‘looks like’ in order to create appropriate learning opportunities and for fair and transparent competency-based assessment.

“I think it’s just how subjective they really are. You can assess someone who has a completely different style of interviewing or researching and it’s not wrong, it’s not right, it’s just different.”

(Graduate 5)

Standardised assessments were one mechanism suggested by participants to assist with improving consistency across different sites and settings. Graduates who had exposure to a portfolio style of assessment described it as useful in documenting student learning and facilitating communication between students and supervisors throughout the placement experience. Participants recommended implementing portfolios into all

placement settings to improve structure of the placement and add rigour to assessment.

A mock interview, which some experienced at the end of public health nutrition placement, was also reported to be beneficial to consolidate learning prior to assessment.

Participants recommended that assessment be designed in a way that facilitates reflective practice, although some did acknowledge that they have only realised the value of reflective practice since commencing work. Participants supported competency-based assessment being student driven, allowing students to identify gaps in their own ability, enabling them to take responsibility for articulate goals for their own learning and development, seek appropriate learning opportunities and therefore demonstrate more easily how they have achieved competency.

“I think if they all did it [a portfolio] where you have to fill it in your own time and provide an example of how you’ve met that criteria, I think that’s probably a good way to do it because then you are thinking about it and you are reflecting back on your practice.” (Graduate 3)

Some graduates commented on the importance of pre-placement assessment in preparing them for their placement experiences. They valued the role of formative feedback on their performance prior to attending placement and felt this helped prepare them for summative assessment tasks. In particular they described the OSCE, simulated patients, role plays, case studies and supermarket food product tasks as being most beneficial in preparing them for hospital placements and subsequent assessment tasks.

Graduates said that valid assessment can only be obtained over multiple observations of performance, not single episodes. They described the need to assess the students' application of knowledge above knowledge alone and professional skills, such as teamwork and time management. They also acknowledged the value of different methods of assessment including exams, oral presentations, reports and practical assessments to determine competency.

*Workplace based assessment is preparation for employment.* All employed graduates felt that overall all assessment activities they had participated in throughout their dietetics studies prepared them well to undertake their current work role. Participants particularly acknowledged the role of the assessment undertaken during work-based placements in shaping their learning.

“I think you really know whether you feel confident that you can meet the job requirements- [this] is what tells you. Now that I've graduated,..... I .... feel confident doing this job and, some more than others, depending on how skilled I feel from finishing uni.” (Graduate 9)

Participants viewed the opportunity to undertake independent assessed work as an important element in all placement settings as it facilitated the development of confidence and allowed students to experience autonomy in a workplace. While assessment assisted learning, they explained that exposure to different work-based experiences alone supported learning independent of assessment. Graduates in research

roles felt that their learning experiences, including assessments were inadequate to prepare them to undertake some of the tasks of research.

Some participants explained that the requirements to complete work associated with food service and public health nutrition projects for the purpose of assessment dominated the placement experience. They perceived that this limited opportunities for them to engage in other experiences or development of other, non-assessed competencies during the time allocated to this setting. Participants explained that as students they sought to be able to choose experiences and tailor the placement to meet their own learning needs and goals rather than be dictated solely by assessment requirements.

“...we managed to do just a menu review... but there’s a lot more to food service that I think we can have a hands on experience during our studies...” (Graduate 4)

Participants commented that hospital based placements may not provide adequate opportunities for assessment of entry-level nutrition education and counselling skills due to the acute nature of the setting. Participants suggested community health, private practice or sub-acute settings could be more appropriate for assessment of skills such as those for managing chronic diseases and long term behaviour change.

*The relationship between students and their assessors impacts student experience and performance.* Participants acknowledged that having multiple supervisors throughout

the placement experience was a “good thing” as it allowed exposure to different case-mix and a range of working styles and allowed them to develop their own style which was preparation for undertaking assessment tasks. Participants described the importance of multiple supervisors/educators, who had observed the student during work-based learning, contributing to their final assessment to ensure assessment is based on a more complete view of student performance. Participants also discussed the importance of training for educators to ensure fair and consistent assessment at each placement site.

“.... this week I would think that I did really good and my supervisor would think that I had met the standard whereas the next week where my supervisor is a different supervisor, she would think that I haven't met the requirements.” (Graduate 8)

According to the participants, the role of the supervisor or educator in the placement experience is pivotal to student learning and can impact development and therefore competency-based assessment both positively and negatively. Participants explained that assessors often expected them to perform in a way that mimicked the style of the assessor, limiting the student's ability to develop their own style.

Clear communication was seen as integral to a successful student-supervisor relationship to facilitate preparation for assessment. They described the importance of having a respectful relationship with supervisors and being able to communicate openly and regularly with supervisors, as well as the university, about their progress towards achieving competence.



“She was quite harsh ... I just really didn’t feel the support there, so I lost a bit of confidence in my ability to manage these patients .... I just went backwards, so she could see that I didn’t feel confident and she couldn’t pass me.” (Graduate 9)

Peer assessment also impacted the experience. Participants reported that being paired with a student of the same level across individual case management, food service management and community or public health nutrition work-based settings contributed positively to learning and preparation for assessment. Participants spoke of the complexity of assessing group assessment tasks where students may have contributed different amounts of work to a task yet the group was awarded the same mark at the end. Similarly, there was recognition that group-based assessment may not identify varying levels of ability between group members.

## **Discussion**

This unique exploration of recent graduates’ experiences of and reflection on assessment in their entry-level education found that new graduates acknowledge the role of workplace learning and assessment in preparing them for employment. The results identified that current competency-based assessment methods are often viewed as subjective and methods that facilitate transparency and consistency are preferred. The findings describe the impact of the student-assessor relationship on learning and performance in the work-based setting. While these findings have been reported in other

health professions, this study is the first to highlight these issues in dietetics, which can be used to inform curriculum development and assessment practices.

Workplace practice in health workforce preparation is an essential component of all accredited health professions in Australia, and universally<sup>21</sup>. Adequate competency-based assessment in these settings is essential in order to ensure an adequately prepared workforce. Although these recent graduates were able to reflect on the benefits of workplace-based assessment in preparation for entry-level work roles, this study identified that as students, they felt they needed more specific skills in some areas of practice. This perceived requirement provides a challenge to the delivery of university curriculum, as entry-level work roles are diverse and highlights the role of assessment in driving student learning and development. Integrating additional content and assessment into entry-level degrees is a challenge in an already crowded curriculum. The Dietitians Association of Australia currently supports a generalist education. These new graduates' perspectives on their preparation for employment are naïve. Without the benefit of experience they may not yet recognise the broad applicability of their skills where specific experience is not necessary and core skills can be applied in all settings as confidence improves. Competency Standards may need revision to take into consideration the more diverse roles in which new graduate dietitians are employed, which in turn would facilitate a change to assessment.<sup>23</sup> There is a need to continuously revise entry-level standards, which drive curriculum and assessment to ensure the profession meets workforce needs.

The graduates in this study reported wanting standardised and consistent opportunities for learning and assessment. While some disciplines have focused on developing a single tool to assess clinical competence<sup>24,25</sup>, these professions tend to be “technical” in nature, that is they have many more standardised treatments, including manipulations and application of high order technical skills. Professions with a counseling focus, including dietetics, have not developed standard tools, suggesting context is paramount. A systems based, multi-method approach to assessment is encouraged.<sup>26 27</sup> Assessment of entry-level competency needs to be viewed as a system of many different pieces of evidence gathered over time. Assessment outside the work-based environment, either to supplement work-based learning or as a pre-requisite to commence work-based placement, is an essential element of the system. The instrumental role of the supervisor or clinical educator for facilitating student learning through assessment was also highlighted. The qualities of an effective supervisor have been articulated<sup>28</sup> and the need to build the capacity of dietitian assessors to implement assessment recently highlighted.<sup>29</sup>

The study exposed the benefits and challenges that surround group and peer learning and assessment. The benefits of a well-designed group assessment are well documented, in particular its ability to enhance learning and develop teamwork skills.<sup>30</sup> The findings of this study are consistent with the literature<sup>30</sup> and would support the need for peer assessment as part of group work which can identify individual contributions. The participants in this study reported valuing the process of peer learning when matched to an appropriate peer. Peer learning is an effective mode of learning in the work-based

setting<sup>31, 32</sup> and should be embraced to assist in managing the increasing demands in work-based learning environments.

The participants of this study reported their willingness as students to be involved in their assessment, setting their learning plans and articulating their needs and goals for the placement. This has not previously been reported. Dietetics educators may consider placing the emphasis of assessment with the student, instead of the current model where in most programs the responsibility lies with universities and supervisors alone. A portfolio approach may prove useful for this purpose. Portfolios have been shown to be effective within the dietetics profession as they place the responsibility for learning onto the student, a connection between theory and practice is made and their use promotes critical thinking. However, the time and resources required for using portfolios as a valid and reliable assessment method should be acknowledged.<sup>15, 33-35</sup>

This study is limited by the small, purposive sample, which may not be transferable across all graduates prepared for entry across Australia. The sampling from across the country assists transferability and the rigor employed in triangulation of data analysis assists credibility and dependability of the findings.

This study explored the experience of student assessment through the lens of recent graduates. This exploration found that students acknowledge work-based assessment to be essential preparation for employment. It also found that greater transparency and consistency is required to improve students' experience of assessment. Understanding this unique perspective of students highlights ways in which competency-based

assessment of nutrition and dietetics students can be improved to encourage greater student responsibility and better prepare graduates for diverse entry-level work roles.

## Tables

**Table 1: Interview questions and inquiry logic**

<b>Line of inquiry</b>	<b>Logic</b>
Background and current work role	Understanding exposures and influences on perspectives
Experience of being assessed across individual case management, community and public health nutrition and food service	Experience of assessment in key work-based assessment domains required for entry-level practice
Key challenges to competence assessment in workplaces	Perspectives of challenges in work-based assessment
Exposed to any innovative or different assessment approaches, any other profession <i>Prompts: different university, overseas, other profession</i>	Exposure to work-based assessment practice innovation
Relationship between assessment and the work they are required to do as a new graduate	Validation of entry-level competence assessment

**Table 2: Themes and subthemes derived from the analysis of assessor interviews.**

<b>Theme</b>	<b>Descriptors</b>
Transparency and consistency are critical elements of competence assessment	<p>Assessment methods should be robust, practical and link to employability or entry-level job roles and align with expectations of entry-level performance</p> <p>Differences between university and work-based assessors</p> <p>Competency standards are overwhelming and confusing to interpret</p> <p>Multiple assessors, longitudinal evaluation of performance, providing overall judgement is essential</p>
Students want greater responsibility in the assessment process	<p>Current assessment methods subjective</p> <p>Assessment methods should be student driven and facilitate identifying gaps in competence, articulate goals for learning and development, and demonstrate how they have achieved competence</p> <p>Portfolios of practice are a emerging and promising assessment method</p> <p>Students learn differently</p> <p>Assessment to drive preparation for work-based learning is effective</p> <p>Multiple assessments over time</p>
Workplace based assessment is preparation for employment	<p>Assessment shapes learning and prepares for work</p> <p>Independence built into assessment tasks</p> <p>Gaps in assessment opportunities to promote important learning</p> <p>Missed learning opportunities</p> <p>Assessment appropriate for work-based setting</p>
The relationship between students and their assessors impacts student experience and performance	<p>Different supervisory styles and expectations</p> <p>Knowledge of assessment and preparation before commencing work-based learning</p> <p>Different roles of supervisors in assessment</p> <p>Clear communication for assessment</p> <p>Peer assessment and group work</p>

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