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Professional competence standards, learning outcomes and assessment: Designing a valid strategy for nutrition and dietetics

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List of acronyms used

ADC: Australian Dietetics Council

DAA: Dietitians Association of Australia

HWA: Health Workforce Australia

OSCE: Objective Structured Clinical Examination

Executive summary

For Australia to maintain and improve the nutrition and health of its population, it is vital to have a nutrition and dietetics workforce equipped to deal with the complex problems involved. Appropriate, reliable and valid assessment linked to entry-level competency standards is an essential part of the education and preparation of this workforce. However, there are many complexities associated with accurately assessing students' competence in work-based settings reported across the health professions. This project was designed to engage the nutrition and dietetics education community in exploring the challenges in assessment of entry-level competence and to examine how to support best-practice assessment of competence across three domains: individual case management, food service management and community/public health nutrition.

Part one of the project involved gathering qualitative information from university-affiliated academics, experienced practice educators, new graduates and novice assessors. This enabled an identification of the challenges of assessment. In summary the project team found that:

- Current approaches to assessment are based on historical antecedents and individual assessor's experience or familiarity with long-standing methods in use. These methods do not generally place the student in control of their assessment or at the centre of the learning process.
- Future assessment should be based on informed judgement and be undertaken by a team of appropriately qualified assessors in both university- and practice-based settings.
- Professionalism is one of the most difficult competency areas to assess.
- Among practitioners, there is a lack of clarity about entry-level competency and some misinterpretation of the competency standards, especially in relation to borderline competence.
- It is necessary to define which competencies can only be assessed in a practice- or work-based setting and which can be assessed within the university environment.
- Some work-based settings may not provide students with appropriate opportunities to demonstrate entry-level competence.

In part two of the project these challenges were addressed using the following methods:

- (a) A Delphi survey was conducted to gain consensus on which of the 166 entry-level performance criteria from the competency standards can only be assessed in the practice or placement environment, which can be assessed in a classroom or university setting or through simulation, and which can be assessed in either setting.
- (b) Workshops were held to create a dialogue around interpretation of entry-level competency standards and assessment decisions and to assist in the illustration of entry-level competence.
- (c) A resource, *Competency Assessment in Nutrition and Dietetics*, was developed to support assessors to implement best-practice competency-based assessment in nutrition and dietetics; available alongside this report at www.olt.gov.au.

The Delphi process invited the participation of 75 experienced assessors (academics and practitioners). Forty-two assessors responded to the first round of the survey and 34 to the second round. Consensus was achieved on the most appropriate settings for 106 of 166 of the performance criteria. Where no consensus was reached, 'either' was used to describe the environment in which these criteria could be assessed, reflecting the divergence of responses. The entry-level performance criteria were mapped against the Health Workforce Australia capability framework. Performance criteria were grouped under Health Workforce Australia units and an element of the entry-level competency standards for dietitians or the health workforce capability selected to most effectively reflect the content area and refine the list. We produced a list of 47 competency statements and their respective recommended assessment settings. This list provides direction for assessors and planners of curricula and placements.

The workshops revealed challenges in reaching agreement on assessment decisions among participants and identified key behavioural characteristics that determine whether a student is deemed competent, including the ability of a student to:

- reflect on, and have insight into, skills, performance and behaviour
- identify a plan of action for improved knowledge and/or skills
- demonstrate progression and development – taking steps forward rather than back
- work independently, knowing and identifying the boundaries of their knowledge and skills and seeking help if required.

Online case studies that assist in building knowledge about, and skills in, assessment may be effective future tools for educators to guide and inform competency-based assessment. Further defining the focus of work-based learning and assessment and standards of performance will assist in the illustration of entry-level competence.

This project makes the following recommendations:

- The findings of this project should be embedded into Australian Dietetics Council policy and practice. The Dietitians Association of Australia and the university sector should work together on policy for assessment to meet workforce requirements. It is necessary to: (a) review the accreditation manual, (b) promote the use of the *Competency Assessment in Nutrition and Dietetics* resource when training assessors, and (c) to integrate the findings of this project into future reviews of the competency standards for entry-level dietitians in Australia.
- It is necessary to create a national system for assessment of entry-level practice by supporting the profession to review current assessment methods to ensure reliability, validity, feasibility, acceptability and educational effect. We recommend applying the results of the Delphi process to set standards for assessment across programs.

This project has been the first attempt to systematically explore the impact of the current assessment system in nutrition and dietetics education at a national level. It has engaged with the nutrition and dietetics education community to improve its capacity to implement effective competence-based assessment.

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Chapter 1: Introduction

Optimal nutritional health of the population is an essential goal for governments and communities. Nutrition and dietetics professionals are experts in food, diet and nutrition. Dietitians assess, manage and treat patients in hospitals, other institutions and communities and also provide nutrition planning at a policy level. Dietitians manage and assess food service for groups in a variety of contexts and they design, manage and deliver nutrition services across health and other systems. They operate as nutrition communicators within the food industry and act as consultants to industry and government.

Producing a competent nutrition and dietetics workforce is essential to maintain and improve the health of the population. However, the changing needs of the population make this an ongoing challenge for those Australian universities delivering nutrition and dietetics education. This challenge is compounded by the growth of nutrition workforces internationally and the need for education to be competitive within the international arena. To ensure that graduates are ready for practice, it is essential to develop acceptable, valid and reliable assessment processes and tools for dietitians-in-training.

The Dietitians Association of Australia (DAA) National Competency Standards for entry to the profession (May 2009)¹ provide the framework and benchmark for the preparation of dietitians for entry into the workforce in Australia. Every five years, to achieve accreditation, the dietetics programs (undergraduate and post-graduate) at 15 Australian universities are required to demonstrate how they meet these standards. The Australian Dietetics Council (ADC), under the auspices of the DAA, manages this process of accreditation, which involves universities demonstrating how the learning objectives, content (including number of placement weeks) and assessment methods used in their programs meet the entry-level competency standards.

The entry-level competency standards describe what a graduate should be able to do upon completion of an accredited degree in nutrition and dietetics in order to be able to enter the workforce. They are supplemented by recently released Health Workforce Australia (HWA) *common health capabilities*² and *threshold learning outcomes* for health, medicine and veterinary science³. These documents guide what a dietitian is required to do in practice to improve the nutritional health of individuals, groups and populations.

Internationally, Australia has a unique dietetics and nutrition system, in that its students are professionally prepared to practice across three domains of practice. In addition to individual patient management using medical nutrition therapy, the education of dietitians in Australia includes food service management (using quality improvement activities in institutional settings) and community/public health nutrition (such as program planning for nutrition and food supplies). Students must demonstrate competence in all three domains to successfully graduate from an accredited dietetics program.

Practice placements (known as 'fieldwork' or 'clinical placements' in other health professions) are widely acknowledged to play a key role in facilitating learning in the development of competence across the health professions⁴. Workplaces provide the environment, challenges and encounters, and individuals learn through their experiences there⁵. Health professionals have practice experience across a range of settings, including

hospital (acute and rehabilitation) and community settings, with varying degrees of intensity⁴. Dietitians are required to spend 800 hours in practice placement across the three key domains⁴. Experiential, or work-integrated learning, is recognised as an important aspect of developing the nutrition and dietetics professional⁶. Practice educators (also known as ‘clinical supervisors’, ‘clinical educators’ or ‘preceptors’) have a vital role in supporting work-integrated learning. They also contribute to the assessment of student performance or competence in the workplace setting, ideally in partnership with university assessors. Assessment, in the context of health professional education, is defined as ‘any purported and formal action to obtain information about the competence and performance of a candidate’⁷ (p. 195). The need to ensure effective assessment of entry-level competence is paramount.

*Assessment [...] powerfully frames how students learn and what students achieve. It is one of the most significant influences on students’ experience of higher education and all that they gain from it. The reason for an explicit focus on improving assessment practice is the huge impact it has on the quality of learning*⁸ (p. 1).

While the profession of nutrition and dietetics has national competency standards developed and recently reviewed through a scholarly process⁹, there has been no documentation of valid and reliable assessment against these standards. Boud’s work on assessment⁸ recommends the importance of judging assessment against national competency standards.

The complexities in accurately and reliably assessing students’ competence are well reported across the health professions¹⁰. Challenges in nutrition and dietetics associated with assessment of competence were previously reported in a project that defined the type of situations, caseload, stakeholders and activities students should engage in to assess competence (Range of Variables project)¹¹. It was clear through the Range of Variables project that, while consensus existed around the need for limits on the scope of practice that could be independently managed by students and new graduates, there was also a clear need for consistency in assessments. It was also clear that, while all universities used the competency standards as a basis for assessment processes on placements, issues were identified relating to comparative reliability and the fact that less experienced supervisors have difficulty translating the competencies into practical assessment¹¹. Countries such as the United States¹² and Canada¹³ have national examinations that report reliable and valid assessment of competence. There has also been work in the United Kingdom to develop valid and reliable clinical placement assessment tools¹⁴, with a portfolio-type approach being used with some success¹⁵. However, there remains a wide variation in the assessment skills and practice of dietetic practice educators and a need to better support educators in assessment of students’ competence. In Australia, there is currently no standardised national assessment process. If we are to more reliably assess competence in the workplace, there is a need to enhance and streamline the assessment of competence in nutrition and dietetics and to build the capacity of dietitians involved in assessment.

In dietetics curricula across the country, assessment should align to learning outcomes and course content¹⁶. Different assessment methods are required to assess the competency standards related to the different domains of individual patient management, food service management and community/public health nutrition. Different assessment strategies are

also required for the differing levels of learning outcomes reflected in the different level of programs (undergraduate or post-graduate). This project did not, therefore, seek to establish a standardised or a single tool for assessment across the country, as has been done in other allied health professions such as physiotherapy¹⁷ and speech pathology¹⁸. One hallmark of such tools is that they use a single, albeit multidimensional, instrument to assess many different characteristics within various diverse clinical placements. There is an assumption that one tool can fit all contexts. The three domains of nutrition and dietetics are very different contexts and, while core competences may reach across domains, course structure varies widely across the country (including between undergraduate and post-graduate programs). A single tool would be unable to meet these varying needs. This project aimed to (a) describe, critically assess and harness the range and diversity of educational approaches and assessment methods; and (b) develop the capacity of universities and practice educators to reliably and validly assess the competence of entry-level or new graduate dietitians. This approach is in line with developments in assessment that have identified the need for a range of methods to assess competence⁷. A range and combination of different methods are used to assess competence across the health professions¹⁹.

... the choice of methods used for the measurement of clinical competence is often governed as much by personal experiences, traditions and 'gut feelings' as by a rational consideration of the published literature on assessment and an understanding of the strengths and weaknesses of the tools..²⁰ (p. 105).

The existing evidence suggests that to 'gain a complete picture of someone's competence and performance a variety of well-chosen instruments is needed'⁷. It is also clear that recording total hours of experience and conducting examination-style assessments are not effective approaches to competence assessment²¹. In nutrition and dietetics there is a dearth of literature and, to our knowledge, no documented work on the reliability or validity of the methods used to assess students' competence across individual case management, community/public health nutrition and food service areas of practice.

Project aims

The project aims were as follows:

- To engage the nutrition and dietetics education community in working towards understanding and implementing standards for entry-level competence assessment.
- To determine the scope of the current competence assessment methods used in work-based assessment across individual case management, food service management and community/public health nutrition.
- To explore the challenges in entry-level competence assessment and in the interpretation of competency standards among universities and practice educators.
- To support best-practice assessment of competence across three domains of practice: individual case management, food service management and community/public health nutrition.

Chapter 2: Project methods, results and outcomes

Part one: The action research process

This project used an iterative action research process to achieve its aims, inform the project's direction and develop recommendations for best-practice assessment in nutrition and dietetics. Figure 1 provides a schematic of the project methodology. This iterative process was designed to ensure that the project addressed the current and pressing issues of assessment for the profession, rather than undertaking work believed to be of importance by the project team. Ethics approval was obtained from Monash University Human Research Ethics Committee (approval number 2011001765) and then subsequently as multi-centre research through Queensland University of Technology (approval number 1200000001) and The University of Queensland (approval number 2012000036).

In summary, three methods of data collection (focus groups with universities, interviews with assessors and interviews with recent graduates) were used to understand the issue of competency-based assessment for the nutrition and dietetics profession. A purposive sampling technique was used to identify those key stakeholders involved in assessment and included three groups:

- (i) university affiliated staff (academics and practitioners) involved in planning and administering assessment in university and practice settings;
- (ii) inexperienced assessors who had been identified in previous work around dietetics competencies to experience difficulty in student assessment
- (iii) recent graduates who could validate their experience of assessment as effective preparation for the workforce.

Each of the three data collection methods is described below.

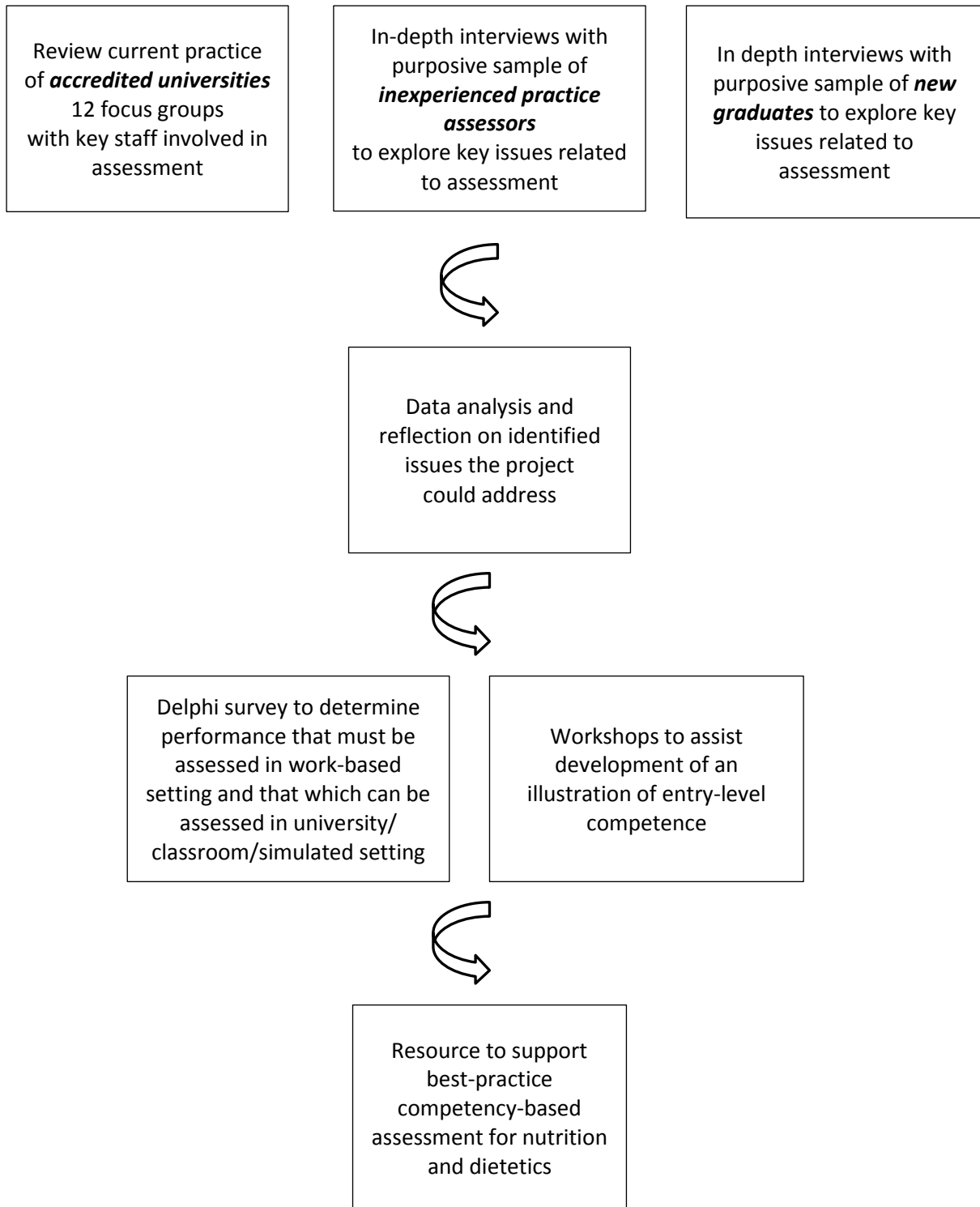


Figure 1: Schematic diagram depicting overview of methodology and outcomes

University focus group consultations

Focus groups were chosen as the method for gathering data from accredited dietetics programs in universities as they allow for a range of opinions to be canvassed while taking advantage of the interaction among participants²². The purpose of the focus groups was to explore current assessment practice and identify key challenges in competency-based assessment. The project team contacted all the course conveners from the universities currently involved in the educational preparation of dietitians (accredited and provisionally-accredited programs $n=14$ at the time of data collection) and invited them to participate in the project. Those members of the academic and dietetics practice team with a key role in assessment across the dietetics curriculum were invited to attend the focus groups. Focus groups were conducted for approximately two hours and were audio-recorded and later transcribed. Questions explored understanding of entry-level competence assessment in nutrition and dietetics, current approaches to assessment and challenges in assessing entry-level competence.

Twelve focus groups (85% of eligible universities) were conducted across the country (ten face-to-face; two via videoconference) and involved between 5 to 12 participants, with both academics and practitioners in each group (mean 7 ± 3 participants in total).

Interviews with inexperienced practice assessors

Qualitative in-depth interviews were used to explore the experience of educators in their assessment of students on practical placements in nutrition and dietetics. In-depth interviews were chosen to allow in-depth exploration of the issues and of the assessors' experiences without others biasing responses²². The interview questions were designed to determine the background of educators and to explore their experience in assessment across three domains of dietetic practice (individual case management or direct clinical care of patients; community/public health nutrition or managing projects aimed at promoting or protecting the nutritional health of communities and/or populations; and food service management or quality improvement activities). However, there was scope to change the questions to allow appropriate responsiveness within the interview if required. The interview also explored the educators' perspectives of the key challenges in competency assessment and important elements of effective nutrition and dietetics competency assessment.

Practice educators with limited experience with education and assessment were selected, based on evidence that suggests that these professionals find assessment difficult and challenging^{11, 14}. A convenience sample of practice educators was selected from the study universities, representing three different nutrition and dietetics programs. All the practice educators interviewed had fewer than two years of experience in student assessment, although their experience in practice ranged from between one to nine years.

All interviews were conducted over the telephone, lasted between 40 to 60 minutes and were transcribed verbatim. The transcripts were analysed using a thematic analysis approach, whereby the authors focussed on the experience of the educators. Transcripts were coded and then codes were grouped into categories. Investigator triangulation²² was employed in the analysis and interpretation of the study data, whereby a subset of six

interviews (three each) were analysed separately by two other members of the project team who verified the categories and themes identified from the data. Twelve interviews were conducted with practice educators. The majority represented only two of the three domains of practice, individual case management ($n=7$) and community/public health nutrition ($n=4$). One practice educator was involved in assessment across all three domains.

Interviews with graduates

Qualitative in-depth interviews were used to explore the experience of assessment from the perspective of students. Data were collected from recent graduates (<12 months within completion of their studies) of nutrition and dietetics programs across Australia through individual in-depth interviews. An email invitation was sent via the professional association's weekly alert inviting recent graduates (estimated to be approximately 500) across the country to participate in the study. Expressions of interest were sought from 20 dietitians who met the eligibility criteria. A purposive sample of recent graduates from those who expressed interest was performed to ensure the inclusion in the study of graduates who had varying student experiences of assessment. In particular, we were interested in investigating the experience of high-performing students, students who had failed and repeated elements of placement, students who were employed upon graduation and students from non-English speaking backgrounds.

The interview schedule was developed to determine the background of recent graduates and to explore their experience of assessment across three domains of dietetic practice (individual case management, community/public health nutrition and food service management). In addition, as a means of validating entry-level competence assessment, the graduates were asked about the relationship between assessment and the work they were required to do as a new graduate. The majority of interviews were conducted over the telephone, except for one that was performed face-to-face for convenience. Interviews lasted between 40 and 80 minutes. Data from interviews were transcribed verbatim and analysed using a thematic analysis approach. Transcripts were coded and then codes were grouped into categories. The authors then reviewed the categories and, through this discussion, grouped the categories into themes. Researcher triangulation was employed, whereby a selection of three of the transcripts were analysed by another member of the project team to verify the categories and themes.

Thirteen graduates participated in an interview. Three of the participants were from culturally and linguistically diverse backgrounds. Six of the 14 accredited, and thus eligible, universities were represented by the graduates (3 Queensland University of Technology; 1 University of Canberra; 4 Monash University; 1 The University of Sydney; 3 Deakin University; 1 University of Newcastle). Twelve of the 13 graduates were employed in a range of settings, including research assistant ($n=3$), clinical dietitian public hospital ($n=2$), rural clinical and community dietitian ($n=2$), community dietetics/nutrition ($n=2$), private practice ($n=2$), corporate company ($n=1$). One participant was unemployed. Their assessment experiences varied from a standard progression towards competence (meeting key milestones throughout their placement and reaching competence within the standard placement ($n=9$)), to failing and repeating ($n=3$), including one student who was assessed as borderline but eventually performed competently with extra time.

Results

Qualitative data from each of the above-mentioned methods of data collection was analysed separately, and then commonality and issues relevant to the project were identified at a face-to-face meeting with the project team. The focus of this meeting was to analyse the three data sets together with the goals of: (a) ascertaining the key challenges and issues the profession of nutrition and dietetics has with competence assessment; and (b) to develop a way forward. Table 1 provides a summary of the three key themes that emerged from this analysis; these are also described below.

Table 1: Themes that emerged from focus groups and individual interviews with assessors and graduates

<i>Theme</i>	<i>Descriptors</i>
Assessment of competence	<ul style="list-style-type: none"> • Approaches to assessment based on history and level of experience • Judgement is part of assessment of entry-level competence undertaken by university together with clinical/practice educators/assessors • Familiarity with assessment methods • Learning and supervision style impacts on assessment • Role of supervisor/educator is different and separate to role of assessor • Assessment of competence is subjective and opinions can vary but consistency is important • Assessors need to be supported/trained in role in assessment • Students goals should drive learning and assessment • Different tools used to assess competence with different views on preferred methods – student led, qualitative methods, such as a portfolio, were preferred • A single, valid tool for individual patient encounters may be useful for educators • Valid assessment is multiple methods over time • Professional skills are part of competence and challenging to assess
Entry-level competence	<ul style="list-style-type: none"> • Entry-level competence is about: <ul style="list-style-type: none"> - baseline knowledge and skills to work as an entry-level practitioner - quality, safe and effective, client-centred services - employability – what is required to be done in the workplace • Need to define more clearly or illustrate what entry-level competence looks like, especially to assist making assessment decision regarding borderline students • Interpretation of competency standards differed • Assessment can be incorrectly focussed and therefore miss important learning opportunities
Assessment in a practice-/work-based setting versus in the university environment	<ul style="list-style-type: none"> • Focus on work-based assessment rather than university/classroom preparation or development of competency • Need to define what skills and knowledge should be assessed in work-based setting and what skills and knowledge can be mastered and assessed prior to entering work-based settings • Current assessment methods do not place the student in control of assessment or at the centre of their learning • Appropriateness of work-based settings to meet students learning needs • Challenge of designing appropriate work-based experiences to meet learning needs • Frequent communication between university, supervisors and work-based assessors essential for effective assessment

Theme 1: Assessment of competence

The university focus group discussions revealed that, across Australia, universities use similar approaches, have had similar learning around assessment over time, and face similar assessment challenges. The traditional style of assessment used by universities and dietitians in placement settings was reported to be based on the history of dietetics education and the individual experience of the assessors. There was also evidence of the emergence within dietetics of assessment practices originating from medical education, for example the objective structured clinical examination (OSCE) and the use of portfolios. There was an acknowledgement in university discussions of the need for judgement in the final assessment of competence and it was reported that this role was undertaken by the practice educators in partnership with key university academic staff.

Inexperienced assessors reported drawing upon their own experience as a student, their career to date, and their own teaching and learning style to inform their methods and style of working with students. When they were familiar with the university's approaches and systems, for example in situations where assessors were supporting students from the university that they themselves had attended, participants reported feeling more comfortable and sure of their approach. These inexperienced assessors acknowledged the impact of their own learning and teaching styles on the supervisory relationship and recognised that perceived 'personality clashes' can occur with students. They described the important attributes of an effective assessor as: having empathy for the student's position; having sound interpersonal skills; and having the ability to make the student feel like an equal. Inexperienced assessors identified the distinction between providing support to students during placement and acting in the role of assessor; they reported that sometimes these specific roles are unclear. According to the educators, key issues of concern around competency-based assessment include differences between daily supervision or guidance and final competency assessment, as well as the interaction with the university or final assessment of completion. The educators acknowledged the different role of day-to-day supervisor and assessor and the role of the university in assessment.

The inexperienced assessors explained that expectations of student performance and competence can differ between assessors. Some individuals recognised that their tendency to use their own student experiences and competency requirements as a benchmark for current students might make them harder judges than other assessors. Others felt that their closeness in age and/or level of experience to the students (as compared with more experienced assessors) gave them a better understanding of entry-level practice and therefore more realistic expectations of the students. Despite the discussion of these perceived differences, participants generally reported consistency between themselves and their more experienced colleagues in their experiences of assessing students.

Inexperienced assessors reported feeling well supported in their role in student supervision but acknowledged that they take on the role with limited training. Where training had been provided, the topics covered generally included that of relationships with students and of providing student feedback, but they were not specific to assessment. Some inexperienced assessors indicated that further training in assessment would be welcome, however not all raised this point. They reported that skill development among assessors is largely fostered by peers and with support from the university. Participants also reported relying on feedback from students to evaluate their performance in the role.

Inexperienced assessors described finding it useful to acknowledge students' existing capabilities and having an understanding of the students' goals for the placement. The use of documentation (self-assessment) prior to placement to articulate progression to date was cited as a particularly useful tool for assessors to learn about students before placements begin.

All forms of data collection revealed a range of methods used to assess competence and a wide variation in their interpretation. It was evident that assessors have different preferences for assessment tools, and that no one tool will meet everyone's needs. Some participants expressed the view that tick boxes are confusing, may not be accurate in picking up incompetence, but are useful to track progress. Some participants suggested that opportunities to record qualitative comments are more useful than a tick box method. Assessors expressed the view that forms are not particularly useful in assessing professional attributes and behaviours such as time management and teamwork, for example. Assessors requested greater consistency between universities to make it easier to accommodate students from various universities. Participants viewed favourably the use of a portfolio form of assessment, whereby students collate a range of evidence against the entry-level competencies.

The responses from all three methods of data collection acknowledged the value of different methods of assessment, including exams, oral presentations, reports and practical assessments, to determine competence. All also highlighted that valid assessment can only be obtained over multiple observations of performance (rather than observation of single episodes) and, as a result, the participants wanted there to be multiple opportunities for assessment. Graduates described the need to assess *application of knowledge*, rather than knowledge alone, and also the need to assess professional skills, such as teamwork and time management. The university focus groups discussed the challenge of assessing professional skills. These discussions highlighted a lack of faith in a tick box system for assessment, with some stating that qualitative comments may be more constructive for students. Universities saw milestones as useful to guide assessment and the progression of competency development. Portfolios were reported by graduates and through university focus discussions as being an effective tool to promote a holistic approach to assessment. The student-led (self-directed) and owned nature of the portfolio, and its ability to facilitate reflective practice and self-evaluation, were seen to be particularly beneficial for supporting and documenting student progress. Effective feedback was highlighted as an essential element of assessment from all forms of data collection.

The majority of focus groups discussed the potential role of a single assessment tool for the profession. Practice educators highlighted the benefit of a single assessment form for the individual case management setting, making it easier for supervision and assessment of students from multiple universities. The driver for one form came from educators who wanted to be familiar with the form and the process of assessment. The idea of validating a form to be used for individual counselling and group education was raised in a few focus groups. However, most focus groups recognised that one form would not meet the needs of assessment across all units of competency and that, if one form were to exist for individual counselling and/or group education, this would only document evidence of achievement of some of the performance criteria.

Theme 2: Standards for entry-level competence

The university consultation reported that entry-level competence is about the baseline knowledge, skills and attitudes required to work at an entry-level practitioner standard. Some described it as being safe to practice and providing quality and effective nutrition and dietetics services with client-centred or service-centred outcomes. It was also described as being about demonstrating the ability to work independently. Safety included knowing and identifying boundaries of knowledge and skills and seeking help if required and also having insight into one's own performance. Some described entry-level competence as whether the student is 'work ready', or whether you would employ a student, which was later clarified as not *who* you would employ but *could you* employ the student. An overwhelming need reported through the university focus group discussions was to define more clearly what entry-level competence is or looks like, over and above the existing competency standards. A more accurate illustration of what 'borderline' and 'fail' students look like would assist this.

Assessors acknowledged the support received from universities to undertake their role. They also felt that their own interpretation of the competencies and overall placement objectives differed from the interpretations made by academic staff. Assessors discussed their perception that the university is focussed on achievement of competence rather than the process of getting there, in contrast to their own approach which they saw as to support the journey, not just the end point.

It was also apparent from assessors' remarks that placement site requirements differ from university expectations with regards to the placement experience. For example, what might be useful to a placement site in terms of student output may not align with university objectives for the placement. Participants suggested that competence should be measured with regard to tasks required in the workplace and therefore directly link to employability.

Universities, assessors and graduates reported that competency standards were difficult to interpret and to understand, open to interpretation and had too many performance criteria. Inexperienced assessors felt that it was important for there to be clear definitions of the precise performance criteria for the competency standards to be assessed, along with clear interpretation of the competency standards, and a need for student participation in their assessment. University staff agreed that, if anything, there were already too many performance criteria. The assessors said that tools such as the range of variables statements provided some assistance in defining the competency standards, but they often made use of their own personal interpretation of each competency performance criteria. Assessors and graduates expressed the need for a more specific illustration of entry-level competence with respect to various settings and contexts and described the need for the whole profession to understand and own the competency standards. Educators also called for definitions of what constitutes a fail, borderline and pass student.

The graduates reported that, while in general assessment at university prepared them well to undertake their current work role, there were missed opportunities for learning, either through poorly designed assessment or a focus only on assessment for learning rather than other experiences valuable in work-based settings.

It was acknowledged by graduates that having multiple supervisors throughout the placement experience can be a positive experience, as it allows exposure to a different case-

mix and a range of working styles. The reported downside of having multiple supervisors was the challenge of adjusting to each supervision style. In particular, participants spoke of inconsistencies in supervisor expectations and styles, both between and within sites. Graduates also expressed concern that their placement educators did not have a good grasp of their pre-existing knowledge and skills obtained before they attended the placement. According to the graduates, the role of the supervisor or educator in the placement experience is pivotal to student learning and can have a positive or negative affect on the development of competence. Differing personalities and intimidating or inexperienced assessors were all perceived to contribute to insensitive feedback and inaccurate assessment. The graduates also explained that assessors often expected them to perform in a way that mimicked the assessor's own style, limiting the student's ability to develop their own style of working.

Graduates articulated the idea that valid and robust 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. They noted that university requirements for assessment of competence did not always align with workplace requirements.

Current assessment in all practice-based settings was reported to be subjective and inconsistent, largely because of variations in standards across sites and between educators or supervisors. The graduates expressed the view that students, supervisors, educators 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 assessment of competence. They explained that students may adopt different styles or approaches whilst still achieving the intended outcome, which should be the focus of the assessment.

Theme 3: Assessment in practice- or work-based settings versus university

The university focus groups identified the need to demonstrate performance in a work-based setting as part of competence assessment. There was a tendency to rely on this work-based placement assessment, rather than university assessment, in the assessment of final competence. This neglected the use of a range of different learning and assessment activities that may contribute to competence development during programs. The inexperienced assessors and university focus group discussions reported the need to differentiate between competencies to be demonstrated and assessed in the placements and those that have already been assessed in the university environment. The university focus group participants suggested practical placement should be focussed on assessing professional skills and translation of knowledge into practice. In the clinical setting, participants felt that assessment should be based on judgement of a range of evidence, including direct observation, case studies and nutrition care plans. In the community/public health nutrition setting this was reported to include communication within teams, oral presentations and written work. There was a general sense that 'competent' should mean 'work-ready', and that written work, such as case studies and project reports, does not adequately assess competence or reflect performance in the workplace.

The focus group discussions identified that the focus of assessment was on multiple forms of assessment within the university environment and multiple assessments in the practical placement environment. They reported a poor translation of university-based assessment

into practice-based assessment, with the link between the developed knowledge and skills not being clearly articulated. The graduates described a 'top-down' approach to current assessment, whereby university staff and educators, rather than the students, are in control of the assessment.

It was recognised by the placement assessors that a range of factors can make learning in workplaces challenging. Assessors reported that their busy workloads, with a subsequent lack of time or capacity for the role of assessor, could affect the learning experience of the students. Participants also reported often feeling pressed for time to provide adequate feedback and support for student learning experiences through observation, as they still needed to meet their usual workload demands. Assessors explained that acute public hospitals may only be able to provide experience with complex and more advanced level patients, thus limiting the ability for students to consolidate entry-level skills. On the other hand, it was recognised that rural or remote public health placement experiences may be compromised by a lack of complex cases, or other factors such as time spent travelling between campuses or activities. It was also recognised that, regardless of the site, the learning experiences available may not always be appropriate for student ability or match students' individual learning goals.

Graduates highlighted that each placement site offered different experiences and that, as students, they worried about missing out on learning opportunities. The different sites and available projects for the community/public health nutrition placements caused concern among students because differences in placement activities, either by default or design, meant that some had less than ideal placements in which to develop and demonstrate competence. Some graduates noted that the food service and community/public health nutrition projects for assessment dominated the students' focus, limiting opportunities for other experiences or development of other competencies, which may not be specific to that domain during this placement. They explained that, as students, they wanted to be able to choose placement sites and to tailor the placement to meet their own learning needs and goals. Similarly, graduates commented that the acute nature of the hospital-based setting may lead to these placements not providing adequate opportunities to demonstrate entry-level nutrition education and counselling skills. They suggested community health, private practice or sub-acute settings may be more appropriate for the development and assessment of dietetic management skills for chronic diseases such as diabetes, obesity and cardiovascular disease.

The graduates acknowledged the role of their placement experiences in shaping their learning. They suggested that placement experiences and work-based assessment should specifically aim to prepare students for the work that is required of an entry-level dietitian and that the placement experiences will affect preparedness for entry to the workforce.

Participants recognised that, while pre-placement experiences can help to prepare students for placement, there is a significant leap from university to placement for which they were not wholly prepared. They recommended that there be an introduction to placement discussing the work environment and expectations of students before commencing placement, followed by a thorough orientation to placement to better acquaint students and supervisors with one another and to help inform students' expectations of the site.

Assessors described a feeling of responsibility for creating a suitable experience that supported students to achieve competence and cited dedicated time for strategic planning and workplace acknowledgement of their role as an assessor as important factors. Participants from the individual case management setting spoke of careful planning of the learning experience and cooperation between the placement site and the university in order to meet student learning needs. Those from community/public health nutrition and food service management settings described the challenge of creating a valuable and appropriate project learning experience.

Open and frequent communication between the university, students and educators was identified by participants as important to creating an optimal work-based learning environment for students.

Part two: Identifying and addressing the challenges

The results from part one of the project highlighted key areas for action for the project team to address. These were as follows:

- (i) The need to define which competencies can only be assessed in a practice- or work-based setting versus those that can be assessed in the university environment.
- (iv) The need to illustrate entry-level competence.
- (v) A lack of knowledge and skills in the theory of assessment of competence among the profession. Academics and practitioners especially are overwhelmed by assessment.

The project team address these three challenges by the following:

- (a) conducting a Delphi survey to gain consensus on where competencies are best assessed
- (b) running workshops to create a dialogue around the nature of entry-level competence
- (c) producing a resource to support assessors to implement best-practice competency-based assessment in nutrition and dietetics.

Each of these approaches is described below.

Delphi survey

Method

A Delphi technique²³ was used with experts in nutrition and dietetics entry-level competence assessment to gain a consensus of opinion about the context within which each of the entry-level performance criteria should be assessed. These experts reviewed the 166 DAA entry-level performance criteria¹ to establish whether they are best assessed in (a) the practice or placement environment, (b) a classroom or university setting or through simulation, or (c) either setting.

The project team developed an electronic, internet-based survey. The 166 performance criteria were used as the basis for the survey as a reflection of tasks required to demonstrate ability to perform entry-level work. A five point Likert scale was used to invite participants to judge to what degree they believe each of the performance criteria could be assessed in practice or placement, in the university or simulated setting or either (1 = strongly disagree – can only be assessed in a practice setting, 2 = disagree – predominantly assessed in a practice setting, 3 = neither agree nor disagree – could be either setting, 4 = agree – can be mostly assessed in the classroom/university setting, 5 = strongly agree – can be assessed entirely in the classroom/university setting). The survey was divided into nine sections, reflective of the eight units of entry-level competency standards for which there were performance criteria and a section with demographic information (level of expertise, practice area of experience, area of employment). The survey was piloted with two academics to test the electronic system. The project team intended to repeat the Delphi survey until consensus on the 166 performance criteria was achieved. The survey maintained the anonymity of participants, avoiding dominant viewpoints or peer pressure to influence responses. It allowed time for considered responses across a broad geographical area, as is typical of a Delphi survey²³.

Expert assessors from academia and practice were identified as the sample for the study, drawn from the 14 accredited dietetics programs in Australia at the time of the study. These expert assessors were invited via an email link to participate in round one of the Delphi survey. They were then sent two reminders over a one-month period after the initial invitation. We predicted that two rounds of the data collection would achieve consensus.

Data from the first round was analysed and performance criteria items achieving consensus on the first round were removed from round two of the survey. Participants were sent the revised survey and provided with the group result from the previous round to allow them to consider the group response before making their own response. Round two of the survey was sent to the participants who completed round one of the survey. Again, these participants were sent two reminders over a one-month period to complete round two of the survey.

The numerical responses to the surveys were analysed descriptively using Microsoft Excel and reported as means, medians and ranges of the Likert scale. Text responses were collated and analysed using a basic content analysis to assist in gaining insight into the rationale behind participants' responses. Consensus was deemed to be achieved where the mean was 1, 3 or 5.

Results from the two rounds of the Delphi survey were mapped against level one (entry-level) of the national HWA capability framework published in May 2013². (This is an agreed set of national common capabilities for all health professionals. The five domains are: provision of care; collaborative practice; health values; professional, ethical and legal approach; and lifelong learning). This resource is aspirational and is in four levels to capture what is expected of the health workforce generally. It is written from the perspective of the health workforce generally, not from any individual profession's perspective. It does not replace any individual profession's own competencies. In addition, the performance criteria were also mapped to the ALTC Threshold Learning Outcomes³. This process allowed the results to reflect the desired refocussing of the workforce while supporting individual professional competencies. Performance criteria were grouped under units in the capability

framework, which were matched to threshold learning outcomes and summarised. These summaries were then identified as being either an element of the entry-level competency standards for dietitians or the health workforce capability, to most effectively reflect the content area. The aim was to define a short list of competency statements and the most appropriate place for their assessment.

The refined list of competencies statements were listed on a scale from: must be assessed in the placement-/work-based setting (red hot) through to those that can be assessed in either setting (orange) or those that can be assessed in a university/classroom/simulated environment (cool yellow). This scale aimed to illustrate and clearly emphasise the focus of assessment in work-based settings.

Results

Seventy-four expert assessors from academia ($n=52$) and practice ($n=22$) were identified and invited to participate in the Delphi survey. Forty-three participants (58% response rate) completed round one and were sent round two. Thirty-four experts (79% retention rate) completed round two. The majority of the respondents were currently working in academia in either teaching or research and teaching roles. Eighteen (42%) respondents described their main area of expertise as being in individual patient care and 15 (35%) as being a career academic. Only seven (16%) of the participants described their expertise in public health nutrition and seven (16%) in food service or management.

Table 2: Demographics of participants in rounds one and two

	<i>Round one</i>	<i>Round two</i>
Years since commence practice (mean \pm SD)	19.8 \pm 8.6 years	20.4 \pm 8.4 years
<i>Area of current work (n, % total)</i>		
Academic	34 (79%)	26 (76%)
Practitioner	9 (21%)	8 (24%)

Consensus was achieved for the setting for 106 of the performance criteria (46 round one; 60 round two). Performance criteria gaining consensus were more likely to be located under units related to nutrition assessment, individual case management, community/public health nutrition, management and organisational skills and professionalism. Limited consensus was reached for performance criteria related to nutrition communication and food service management. Where no consensus was reached (60 performance criteria) it was evident that practitioners had a different perception of the setting to academics, who saw more potential for pre-placement skill assessment. These 60 performance criteria were marked as being able to be assessed in either the workplace or the university setting, which accurately reflected the divergence of responses.

Using the HWA capability framework and elements of DAA entry-level competency standards, a list of 47 competencies and their recommended environment for assessment was devised (Figure 2). This process also identified some gaps in current entry-level competency standards and the differing focus of the standards. The project team noted the focus on client-centred care in the HWA framework and the limited content around professionalism and fitness to practice elements in the dietitians' standards.

Figure 2: Competency areas that should be assessed in practice or placement environment (red), could be assessed in either practice or classroom/university/simulation setting (orange), can be assessed in the classroom or university setting or through simulation (yellow)

↑	<ol style="list-style-type: none"> 1. Collects health and medical, cultural, psychological, economic, personal and environmental data 2. Prepares plans for achieving goals in collaboration with patient or client (community/population) or carer and other members the health care team or relevant stakeholders and partners 3. Develops plans to provide safe and nutritious food in a food service system 4. Implements nutrition care plans/programs/services in collaboration in with patient/client (community/population) or carer or food service system and other members the health care team or relevant stakeholders and partners 5. Monitors progress of the individual care and condition or nutrition program/service and adapts plans as necessary 6. Uses client-centred counselling skills to facilitate nutrition and lifestyle change and support clients to self-manage 7. Performs healthcare activities safely and effectively, applying accepted risk assessment and management techniques 8. Establishes trust with the patient/client by demonstrating understanding, respect and acceptance 9. Promotes a high standard of nutrition care, while respecting the goals and roles of others 10. Participates in multi-disciplinary team activities 11. Identifies, consults and engages stakeholders and partners 12. Clarifies work priorities and job expectations with a manager/supervisor as required 13. Uses negotiation and conflict resolution skills 14. Gathers and shares information to support good decision making with relevant internal and external stakeholders 15. Provides patients/clients with information on accessing additional services and health programs 16. Develops and maintains a credible professional role by commitment to excellence of practice 17. Demonstrates respect and tolerance for individual differences 18. Applies organisation skills to the practice of nutrition and dietetics 19. Applies ethical and legal requirements of the role 20. Accurately recognises own limits, and seeks assistance/guidance from the supervising professional as necessary
	<ol style="list-style-type: none"> 21. Determines nutrition status of patients/clients and populations using assessment data 22. Uses qualitative and quantitative methods to collect and analyse data to identify patients/clients and populations or service issues 23. Assesses and assigns priorities to all data relating to patients/clients, populations and services 24. Develops and documents plans to provide safe and nutritious food for patients/clients and populations or services 25. Makes appropriate nutrition diagnoses 26. Applies quality management principles to all aspects of professional practice 27. Develops and delivers education sessions 28. Evaluates nutrition programs 29. Assesses opportunities to improve nutrition and food standards within a food service 30. Demonstrates evidence-based practice 31. Demonstrates effective and appropriate skills in listening and communicating information, advice, education and professional opinion to individuals, groups and communities 32. Recognises the role of interdepartmental, interagency (government, non-government and professional) and industry co-operation to reduce barriers to healthy eating habits 33. Considers sustainability of programs 34. Acknowledges the different ways that different people may contribute to building a team 35. Demonstrates cultural safety 36. Translates technical nutrition information into practical advice on food and eating 37. Makes recommendations on food and nutrition policy 38. Plans and delivers nutrition programs with population groups 39. Creates solutions which match and solve problems 40. Uses ethical procedures in research practice 41. Commits to life-long learning and professional development
↓	<ol style="list-style-type: none"> 42. Uses food composition data, food regulations and codes of practice, nutrient reference tools and food guides to identify food options, which meet nutrition needs 43. Critically reviews the literature 44. Documents outcomes of research using the research process 45. Identifies socio-cultural and environmental determinants of the food supply, relevant to the nutrition issue 46. Applies existing standards to identify opportunities to improve an aspect of the food supply 47. Applies food legislation and regulations to evaluate an aspect of the food supply

Illustration of entry-level competence

Four workshops were conducted in Brisbane and Melbourne with academics, practitioner assessors and new graduates to explore entry-level competence. Participants were asked to think about each unit of competency and, in plain language, describe what entry-level competency 'looks like'. These written notes were analysed using a content analysis, and reoccurring themes were extracted to assist in defining entry-level competence (Appendix A). This work highlighted consistency among participants on the interpretation of units of competency and overarching professional attributes required for practice.

In addition, at the DAA conference in May 2013, a workshop was held to further illustrate entry-level competence through the use of three case studies across the three practice domains. The aim of the case studies was to present three cases of borderline student performance in the three work-based settings required for assessment of competence in the profession: food service, community/public health nutrition and individual case management. The cases aimed to promote discussion among participants around assessment decisions.

These two methods highlighted factors to assist in identifying key elements for determining competence, including the ability of the student to:

- reflect on, and have insight into, skills, performance and behaviour
- identify a plan of action for improved knowledge and/or skills
- demonstrate progression and development - taking steps forward rather than back
- work independently, knowing and identifying the boundaries of their knowledge and skills and seeking help if required.

The case study workshop revealed an inability to reach agreement on assessment decisions among participants. Participants demonstrated a lack of skill in interpreting the competency standards as a whole in relation to assessment and showed a lack of confidence in holistic assessment and identification of the key behavioural characteristics that determined whether a student was deemed competent or not. In the future, case studies may prove effective in assisting educators to build skills and knowledge in assessment. Further defining the focus of work-based learning and assessment and standards of performance will assist illustration of entry-level competence.

Resource to promote best-practice assessment in the profession

The project team developed a resource, *Competency Assessment in Nutrition and Dietetics (CAND)*, in response to an identified gap in knowledge, skills and capacity to undertake best-practice assessment in the profession. The resource has been developed based on the assessment literature in dietetics and other health professions and includes the following:

- principles of assessment
- information on best-practice assessment for the profession
- overview of competency-based assessment
- elements of an effective assessment system

- results of the Delphi process
- key issues to consider for illustration of entry-level competence assessment.

This resource has been made accessible to all universities involved in dietetics education in Australia. It is anticipated that individuals and groups will use it as a guide to inform best-practice assessment. Its aim is to develop the capability of faculty staff and practice educators in assessment.

The resource is a PowerPoint that can be downloaded, along with this report, from the Office for Learning and Teaching website (www.olt.gov.au). The resource is also accessible from the Monash University webpage for Human Nutrition Research at Monash (www.med.monash.edu.au/scs/nutrition-dietetics/research.html).

Chapter 3: Discussion

This project was designed to create and support valid and reliable assessment within the profession. Initially, our aim was to test a variety of assessment approaches for reliability and validity; however, the action research nature of the project (through which data was collected from key stakeholders in the early phases of the project) identified that this was not a priority or valued by stakeholders at this time. Instead, the action research process aimed to fill the gaps identified by the initial analysis and to identify which entry-level competency standards can only be assessed in the practice setting, which can be assessed in either setting and which can be assessed in the classroom/simulated environment. The project also assisted in developing an illustration of what constitutes entry-level competence and developed a resource to be disseminated to the profession of nutrition and dietetics to build the capacity of assessors and curriculum designers to implement best-practice assessment.

The project engaged the majority of key stakeholders across the country, providing future opportunities around a national focus on assessment. There is also an opportunity to build on initial discussions held with Kings College London and Dietitians Canada to internationalise the approach to assessment.

This project was the first of its kind internationally to identify the challenges of competence-based assessment for nutrition and dietetics. University practice and academic staff highlighted the following key challenges:

- a lack of consistency between assessors
- the varying nature of the work-based learning environment
- use of appropriate assessment tools
- difficulty in making decisions about borderline students
- the inability of current assessment methods to track a student across time and settings, and
- the complexity of interpreting the entry-level competency standards.

While these have been documented in other health professions^{24, 25}, the challenges outlined in the assessment of entry-level practice in food service and community/public health nutrition were unique to this project.

This project identified additional challenges for assessment within these settings. One of these is to design projects in the community/public health and food service areas so that all relevant competencies can be validly and reliably assessed within a particular project. There is a need to: (a) further explore effective assessment methods in these settings and to test their reliability and validity, and (b) to work on supporting the use of effective tools for work-based assessment in patient-based settings.

Despite these challenges, graduates interviewed across Australia, who had varied experiences of assessment, reported that the assessment undertaken at university did prepare them for entry-level practice. They highlighted a number of opportunities to strengthen current assessment practices including the following:

- allowing students ownership of their learning, assessment and demonstration of competence
- a greater use of qualitative assessment that focussed on overall judgement rather than specific details
- effective feedback, and
- ensuring work-based learning experiences expose students to appropriate environments to support their learning and to allow them to meet their learning goals.

Assessors and graduates supported the use of a portfolio as an effective assessment tool, as has been previously reported^{15, 26}.

This project has provided the profession with a list of academic or performance standards and the most appropriate environment for their assessment. This approach is not dissimilar to that undertaken in medicine, which created an attributes spectrum that listed 'graduate attributes according to their degree of reliance on a clinical setting'²⁷ (page 2) to assist the focus of learning in the clinical setting. The list of standards developed for this project can be used to focus assessment for work-based settings. Similarly, the standards can be used to design assessment for the university classroom environment or through simulation. This has provided an opportunity to reduce the burden on work-based learning. This list needs to be aligned with the course accreditation requirements of the ADC.

This project aimed to facilitate the profession to understand the diversity of approaches to assessment and to come to a common understanding and approach to assessment as a system. The project team promoted a programmatic view of assessment. Unlike other professions that have focussed resources and attention on the development of a single instrument for competency-based assessment with individual patient encounters¹⁷, the approach of this project has been to promote a systems approach, whereby multiple methods are used to inform the judgement of competence. Consistency between supervisors is a key challenge, thus building the level of skills and knowledge of the profession to undertake effective assessment is an important step. It is challenging to create assessment tools for each of the three work-based settings in which student dietitians must demonstrate competence. Some professions have reported a streamlined and effective process for developing a national tool for work-based assessment^{17, 18, 28}. The professions that have adopted standard assessment tools are technical in nature. Professions with a counselling focus, of which dietetics is part, have not developed standard tools. Our project built upon these experiences and previous attempts to develop a national approach to assessment in dietetics²⁹ and focussed on building the capacity of the profession to understand best-practice assessment. We are now in a better position to move forward with a national approach to assessment.

The development and dissemination of the resource, including activities to assist illustration of entry-level competence and making decisions about borderline candidates, is an essential step forward to building the capacity of the profession to undertake best-practice assessment. The high turnover of practice-based assessors creates a unique challenge for the profession. Targeting the universities as the holder of knowledge and capacity and supporting them to train their assessors towards a systems-based approach is likely to have

the highest impact. Future work needs to support academics and practitioners to design and test appropriate assessment methods for the system.

The engagement of the DAA through Associate Professor Eleanor Beck as a project team member, and the support offered by the ADC throughout the project, are key factors for success and sustainability into the future. During the course of the project the project leader presented the work on three occasions to the members of the ADC, seeking their support for the proposed direction of the work. There is a need to work with the ADC to translate this project's findings into policy and practice for accreditation processes and standards to guide the profession into the future.

Achieving a best-practice assessment system for all entry-level dietetics courses across the country is a challenge. Focussing on the five key areas for best-practice assessment outlined in the resource developed as part of this project should enable the profession to focus on its development. Of particular importance is ensuring that those practitioners assessing students have the appropriate skills and attributes. The recently released National Clinical Supervision Competency Framework³⁰ provides a benchmark on which to build and to ensure that appropriately skilled professionals are undertaking assessment.

Similar yet unique challenges for the assessment of entry-level professionals are found across the diverse profession of nutrition and dietetics. This project captured and harnessed the diversity of assessment practices being used across the country, recognising a wide variety of opinions and, in response, created a resource to benchmark best-practice assessment. We hope that this activity has stimulated a momentum for change towards a more unified assessment system for entry-level practice.

Chapter 4: Recommendations

This project, *Professional competence standards, learning outcomes and assessment: Designing a valid strategy for nutrition and dietetics*, has produced a number of important results, including raising the awareness of the importance of good assessment for the profession. The project produced key outcomes linked to its aims, which can now be build on and consolidated.

The project team has committed to supporting further dissemination of the resource, Competency Assessment in Nutrition and Dietetics, outside the timeline of the project. A dialogue on the usefulness of the resource as a means of supporting the profession to overcome assessment hurdles should commence as part of the dissemination phase. In addition, the project team are committed to disseminating the work through peer-reviewed literature.

The key recommendations from this project are given below.

1 Embed the findings of this project into ADC policy and practice

1.1 Review ADC/DAA accreditation manual for dietetics education

There is currently limited guidance on assessment in the accreditation manual, which could be updated to include a summary and examples of an effective assessment and the benchmark standards identified from the results of the Delphi survey in this project. Initial discussions with the ADC to commence this process have started.

1.2 Integrate findings into future reviews of entry-level competency standards

This project identified a lack of confidence amongst some of the profession in interpreting the entry-level competency standards for dietitians in Australia. This highlighted a lack of congruency between the national health workforce capability framework, the threshold learning outcomes and the DAA standards. Future review of the competencies should consider these national standards. In particular, a greater focus on patient- or client-centred healthcare is required in the dietitians competency standards.

2. Create a national system for assessment of entry-level practice

2.1 Support the profession to review assessment practices and tools so that they are reliable, valid, feasible, acceptable and have educational effect

The resource will allow academics, practitioners and curriculum designers to learn about the principles of designing and implementing best-practice assessment. It is envisaged that the resource will be used to review and evaluate current assessment practices and tools. The ADC has been engaged in review to ensure the cooperation of the DAA in dissemination of the resource. There is a need to further support the profession to test assessment methods for validity, reliability and appropriateness and, in particular, to explore the most appropriate methods to assess competence in community/public health nutrition and food service management. The project has provided the opportunity to investigate a possible framework that would underpin methods to support a national assessment system.

2.2 Apply environments for assessment findings to set standards for assessment across Australia

The development of a list of academic standards and their most appropriate environment for assessment is the first step to ensure work-based learning experiences and their assessment are described, so that time and resources are focussed appropriately. There is an opportunity to build on the illustration of competence commenced in this project to assist assessment decisions, particularly those related to borderline students.

Chapter 5: Conclusions

This project was designed to engage the nutrition and dietetics education community in exploring the challenges in assessment of entry-level competence and to examine how to support best-practice assessment of competence across three domains: individual case management, food service management and community/public health nutrition.

The information gathered from key stakeholders, namely university-affiliated staff, graduates and assessors, highlighted the need to illustrate entry-level competence and to define what competencies can only be assessed in a practice- or work-based settings versus those that can be assessed in the university environment.

A Delphi survey was conducted to gain consensus on which of the entry-level performance criteria from the competency standards can only be assessed in the practice or placement environment, which can be assessed in a classroom or university setting or through simulation, and which can be assessed in either setting.

Workshops were held to create a dialogue around assessment decisions and to assist in the illustration of entry-level competence.

The project developed a resource package detailing a summary of the literature on best-practice assessment and a list of 47 academic standards with the recommended environment for their assessment. While a number of further steps are recommended, including embedding these findings into course accreditation policy and developing a national approach to assessment, this work has developed the capacity of the profession to implement effective competence-based assessment.

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Appendix A

Content analysis from four workshops in Brisbane and Melbourne with university-affiliated staff, graduates and students

Plain language for nine units of entry-level competency standards

Unit	Descriptor
1: Underlying knowledge	Broad underlying knowledge, kept current, that can be applied as a background to inform practice for the different contexts.
2: Nutrition communication	Being able to get the right message across, through a range of communication styles, including written and oral in a range of contexts, being adaptable and listen and get your audiences input in challenging environments.
3: Collection, analysis and assessment of nutrition/health data	Comprehensive, relevant, meaningful interpretation with respect to standards, using appropriate sources, prioritisation, best-practice guidelines, short and long term issues/clinical reasoning, determining meaning and relevance, in the context of other indicators, patient/client or group or community/population centred.
4: Individual case management	Independent (assessment, priority setting, planning), tailor approach, identify limits, calculating requirements, appropriate use of food service system/relevance of community the patient lives in, working health care setting, identification when liaison needs to happen with health care team or family, working with patient goals and monitoring.
5: Community and public health nutrition and advocacy for the food supply	Being able to engage with stakeholders, using principles of community development and empowerment with respect to nutrition and factors impacting on food system or food supply, to collect, synthesize data and plan implement and evaluate change to influence population health.
6: Food service management	Able to work with people and food services systems. Application of food science, food culture, food service, food safety and food regulation (including menu standards) to improving health of patients or groups.
7: Research and evaluation	Ability to critically appraise (against levels of evidence) and use appropriate means to apply research to practice in all settings. Use appropriate research methods to gather data where evidence does not exist and document outcomes appropriately and effectively.
8: Management and organisation	Individual attributes – time management, prioritising, self-reflection, accepting feedback, communicating work, initiative, accepting responsibility Workplace/systems context – organisational structure, process, quality improvement cycle, resource management and allocation.
9: Professionalism, advocacy, innovation and leadership	Applying ethics, initiative, respect, workplace values, culturally safe practice and ability to reflect, accept feedback and improve practice and advocating for nutrition across multiple contexts.