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Exploring approaches to dietetic assessment of a common task across different universities through assessment moderation

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Exploring approaches to dietetic assessment of a common task across different universities through assessment moderation

Abstract

Background: Assessment presents one of the greatest challenges to evaluating health professional trainee performance, as a result of the subjectivity of judgements and variability in assessor standards. The present study aimed to test a moderation procedure for assessment across four independent universities and explore approaches to assessment and the factors that influence assessment decisions. Methods: Assessment tasks designed independently by each of the four universities to assess student readiness for placement were chosen for the present study. Each university provided four student performance recordings for moderation. Eight different academic assessors viewed the student performances and assessed them using the corresponding university assessment instrument. Assessment results were collated and presented back to the assessors, together with the original university assessment results. Results were discussed with assessors to explore variations. The discussion was recorded, transcribed, thematically analysed and presented back to all assessors to achieve consensus on the emerging major learnings. Results: Although there were differences in absolute scores, there was consistency (12 out of 16 performances) in overall judgement decisions regarding placement readiness. Proficient communication skills were considered a key factor when determining placement readiness. The discussion revealed: (i) assessment instruments; (ii) assessor factors; and (iii) the subjectivity of judgement as the major factors influencing assessment. Conclusions: Assessment moderation is a useful method for improving the quality of assessment decisions by sharing understanding and aligning standards of performance.

Keywords

different, across, task, universities, common, approaches, exploring, assessment, moderation, dietetic

Disciplines

Medicine and Health Sciences | Social and Behavioral Sciences

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1

2 **Abstract**

3

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5 trainee performance, due to the subjectivity of judgements and variability in assessor standards.
6 This study aimed to test a moderation procedure for assessment across four independent universities
7 and explore approaches to assessment and the factors that influence assessment decisions.

8 **Methods:** Assessment tasks designed independently by each of the four universities to assess
9 students' readiness for placement were chosen for this study. Each university provided four student
10 performance recordings for moderation. Eight different academic assessors viewed the student
11 performances and assessed them using the corresponding university's assessment instrument.
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14 discussion was recorded, transcribed, thematically analysed and presented back to all authors to
15 gain consensus on the emerging major learnings.

16 **Results:** While there were differences in absolute scores there was consistency in overall judgement
17 (12 out of 16 performances) decisions regarding placement readiness. Proficient communication
18 skills were considered a key factor when determining placement readiness. The discussion revealed
19 (i) assessment instruments (ii) assessor factors and (iii) the subjectivity of judgement as the major
20 factors influencing assessment.

21 **Conclusions:** Assessment moderation is a useful method to improve the quality of assessment
22 decisions by sharing understanding and aligning standards of performance.

23

24 **Introduction**

25 Fair, consistent and authentic assessment presents one of the greatest challenges in preparing health
26 professionals for practice. Assessment “is a judgement and decision making process in which raters’
27 behaviour is shaped by interactions between individuals and social context in which assessment
28 occurs”⁽¹⁾page 252. Judgements are unlikely to be truly objective, despite complex scoring systems⁽²⁾.
29 Variability in assessment poses risks to health professions due to its potential to graduate students
30 who are not effective or safe, while creating confusion amongst students and trainers. Exposing
31 differences in perspectives and judgements, and supporting assessors to acknowledge the bias they
32 bring to assessment decisions is fundamental to advancing performance focussed assessments⁽³⁾ (4).
33 Discussing reasoning processes surrounding decision making, offers a potentially valuable way
34 forward for assessment. This includes improving consistency and challenging assumptions around
35 methods of assessment.

36
37 Moderation is a peer review process which facilitates the consistency of assessment decisions and
38 explores the underlying factors influencing these decisions⁽⁵⁾. Moderation is an important process
39 for ensuring quality in educational process and outcomes^(5; 6). It aims to assure consistency or
40 comparability, appropriateness and fairness of assessment judgements, and validity and reliability
41 of assessment tasks, criteria and standards⁽⁶⁾. When conducted, it is usually restricted to within
42 universities, not between them. To our knowledge there is no literature reporting assessment
43 moderation in dietetics. This study aimed to explore approaches to assessment of a common
44 assessment task across different universities and assessors and explain the factors that influence
45 assessment decisions.

46

47 **Methods**

48 Four universities were conveniently selected for inclusion in this study, representing four of the 16
49 Australian universities offering dietetics education at the time of the study (Table 1). Ethics
50 approval was obtained from the relevant university human ethics committees (removed for blind
51 review university approval number CF15/1460 – 2015000706). Traditionally students enter the
52 placement setting for a minimum of 800 hours in the final years of their training⁽⁷⁾. ‘Placement
53 readiness’ was chosen as a relevant assessment standard. A form of oral assessment of patient
54 nutrition assessment/ counselling was specifically chosen due to its commonality across universities
55 and evidence of its usefulness in dietetics^(8; 9). This assessment was uniformly used across
56 universities to inform placement readiness prior to students undertaking any significant clinical
57 placement (Table 2). All students were provided a 1 to 2 hour briefing and opportunities to role play

58 prior to the assessment. Case content was built on students' previous learning regarding clinical,
59 theory and communication skills.

60

61 The methodology was informed by Krause et. al.⁽⁵⁾. A purposive sample of four student
62 performances (video or audio recording), previously conducted and assessed at the four institutions
63 (total 16 assessments), were selected for inclusion in the moderation process. The four
64 performances aimed to capture at minimum, a strong student, a borderline student, and a student
65 who had failed. The final performance was selected by the university based on other unique
66 characteristics for which they sought feedback (e.g. a student for whom English was a second
67 language). Assessors were blinded to the students' initial assessment outcomes.

68

69 The recording of the student performance, together with a description of the task and the assessment
70 instrument were provided to the assessors. Assessors were academics (mean years as an academic
71 12.1 ± 4.2 years) who had previous experience as practitioners across a variety of work settings
72 (mean years since graduation from dietetics degree 24.4 ± 4.6 years) and who were credentialed
73 with the professional body. The authors (excluding CP) acted as the academic assessors and were
74 each allocated four different student performance sets from two different universities (total of 8
75 excluding their own institution) to independently assess. They were not provided with any training,
76 other than instructions to read the outline of the task and familiarise themselves with the written
77 assessment instrument. Each student performance was therefore subjected to four independent
78 assessments in addition to that from their original university. The purpose was not to test the
79 reliability of the assessments, but rather to explore approaches to and influences on assessment
80 decisions.

81

82 The results were collated independently by the lead author (CP) whereby grades/criteria were
83 collected on a single spreadsheet in addition to verbatim qualitative comments. These raw data were
84 presented back to the assessors together with the original university assessment, and then discussed
85 as a group. A semi-structured group discussion was facilitated (by CP), and aimed to explore
86 variations in assessment results, factors influencing decisions and how this moderation experience
87 may shape assessment into the future. The discussion was audio recorded and transcribed verbatim.
88 The transcript was coded by CP, with elements of text labelled typical of a thematic analysis
89 approach⁽¹⁰⁾. An inductive and deductive approach was used to identify new concepts and consider
90 the codes in the context of the existing assessment literature⁽¹¹⁾. The codes were grouped as factors
91 that influenced the assessment process, which were then presented back to the assessors to gain

92 consensus on the major learnings related to the assessment process, with the aim of informing future
93 practice.

94

95 **Results**

96 The assessment rating data showed variation between the assessors and original results (Table 3).
97 Quantitative scores or graduated ratings (e.g. pass to high distinction) showed wider variation and
98 fewer disparities if an absolute ranking of pass or fail was considered, with 11/16 performances
99 showing 100% consistency and one showing 75% consistency between markers. The lowest
100 consistency ($\leq 50\%$) was demonstrated where students were failed by their university or only just
101 passed (e.g. 15/30). While there were differences in ratings between assessors, there was
102 consistency in judgements regarding work-based learning readiness when the assessors came
103 together to discuss the results, **although some assessors had not followed instructions for the**
104 **grading scale**. When qualitative assessments were analysed with quantitative decisions about
105 pass/fail (or placement readiness) it was evident that proficient communication skills were a key
106 factor considered when determining placement readiness. The group discussion data revealed three
107 key concepts: (i) The role of assessment instruments (ii) Assessor factors and (iii) The subjectivity
108 of judgement influenced assessment decisions (Table 4).

109

110 **Discussion**

111 This study explored assessment results of selected student performances and the reasons behind
112 assessor decision-making. When academic assessors came together to discuss their results, there
113 appeared greater consensus than individual assessment instruments indicated. Making global
114 decisions was easier than relying on components of assessment tools and individual philosophies
115 and perspectives influenced decisions regarding placement readiness. The moderation experience
116 enabled assessors to be more comfortable with the subjectivity of assessment and although variation
117 existed in the actual score, the absolute judgement of pass/fail was consistent between assessors (**12**
118 **out of 16 performances**).

119

120 The variation in assessor ratings was expected given the lack of training provided to assessors.
121 **Despite written instructions to assessors our data suggest that assessors use their own reference**
122 **points and language to describe performance**. Different standards of judgement has been previously
123 reported in dietetics⁽¹²⁾ and issues of reliability in authentic assessment highlighted⁽¹³⁾. The findings
124 of this work would suggest assessors should implement processes to support a dialogue and shared
125 understanding of what constitutes adequate performance. The value of narrative in assessment is
126 emerging as an important part of good assessment practice^(14; 15). Consensus on pass/fail

127 assessments was easier to achieve than rating scales. Where judgement is inherently subjective,
128 perhaps a pass/fail concept is far more consistent and “marks” or ranking is unnecessary given the
129 nature of the task.

130

131 The role of student reflection on performance was also highlighted by assessors as potentially being
132 valuable in making decisions. **Only one university included this process (University A), but this had**
133 **assisted this university to pass a borderline student. This reflection was not provided to students.**

134 Student insight into their ability and learning needs may be a key factor influencing assessment
135 decisions as has been found in other work⁽¹⁶⁾. These findings further support the need for multiple
136 pieces of assessment from different perspectives to shape decisions, which is in line with a
137 programmatic⁽¹⁷⁾ and collaborative approaches⁽¹⁸⁾ as well as quality feedback⁽¹⁹⁾.

138

139 This study explored approaches to performance assessment across different universities and
140 assessors and **the** influences on assessment decisions. Inconsistency in assessor judgement was
141 highlighted **however**, consensus on global assessment outcomes were reached **through** discussion. A
142 formal method of moderation across and within institutions may support a shared understanding of
143 standards and performance. **Supporting assessors to acknowledge the perspectives they bring to**
144 **assessment decisions is fundamental to advancing competency-based assessment.**

145

146 **Transparency declaration:**

147 The lead author affirms that this manuscript is an honest, accurate, and transparent account of the
148 study being reported. The reporting of this work is compliant with COREQ guidelines. The lead
149 author affirms that no important aspects of the study have been omitted and that any discrepancies
150 from the study as planned have been explained.

151

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195

196

197

198 **Table 1: Characteristics of participating universities, using placement readiness assessment**
 199 **moderation, compared to other universities offering dietetics courses in Australia.**

	Participating Universities	Other Universities
	n=4	n=12
Level of Dietetics degree		
Undergraduate	2	4
Post-graduate	0	7
Both	2	1
States/Territories		
Australian Capital Territory	0	1
New South Wales	1	3
Queensland	1	4
South Australia	1	0
Victoria	1	2
Western Australia	0	2

200

201 **Table 2. Description of oral exam across four participating universities.**

Competency Standards as the focus for the assessment:	<ul style="list-style-type: none"> • Collects, analyses and interprets data • Makes appropriate diagnoses and identifies priority issues • Prioritises key issues, formulates goals and objectives and prepares goal oriented plans in collaboration with patient/client or carer and health care team* 			
University:	University A	University B	University C	University D
Timing of task:	Year 3 of 4 year undergraduate degree	Year 3 of 4 year undergraduate or Year 1 of postgraduate degree	Year 3 of 4 year undergraduate degree	End of year 3 of a 4 year undergraduate or end of year 1 of the post-graduate degree
Assessment % contribution to overall mark for subject:	25%	30%	50%	Non-graded pass
Description of task:	Students are required to demonstrate skills in the nutrition assessment phase of a counselling session during a 20 minute interview with a standardised patient who has a basic chronic disease. The session assessed by a dietitian with significant clinical practice experience and is video recorded.	Student are required to demonstrate client centred counselling skills to facilitate nutrition and lifestyle change with an individual client (actor) who has been referred to an outpatient clinic with a chronic disease. Students are required to demonstrate the nutrition assessment, diagnosis and intervention phases of the nutrition care process and have 50 minutes to complete this task. The session is assessed by a dietitian with significant clinical practice experience and is video recorded.	Students undertake a 45 minute counselling session on healthy eating with a standardised client experienced in role play. Students are required to demonstrate establishment of an appropriate environment for counselling, the gathering of information from the client, application of a counselling technique, the negotiation of client-centred goals, and communication skills. The session is assessed by a dietitian with significant clinical practice experience and is video recorded.	Students are randomly allocated a case scenario. They have 30 minutes preparation prior to a 20 minute oral viva with 2 examiners, one role playing the patient. The session is assessed by a dietitian with significant clinical practice experience and is audio recorded.
Description of assessment:	The assessment tool score parameters such as data collection, interview and communication skills, and food knowledge. It included additional global rating scale completed by the assessor and standardised patient to enhance consistency and validity.	This exam is considered the final exam for the subject and worth 30% of marks. Assessment focuses on the demonstration of the nutrition care process and communication skills.	The final grade is satisfactory or unsatisfactory. This is based on a holistic assessment of criteria demonstrated during the assessment plus reflection by the student after the completion of the assessment. Criteria include demonstration of appropriate communication and counselling skills, problem identification, explanation of the diet/disease relationship, tailored intervention with measurable goals and objectives and specific strategies, compliance to interview structure, reflection and adaptation.	The final grade is either a pass or fail, and to be awarded a pass the student must pass a minimum of 6 compulsory criteria. include: <ul style="list-style-type: none"> - Prioritising the main problems from the diet history. - Explaining the diet/disease - Establishing priority goals and objectives for the client - Evidence of clinical reasoning - Demonstrates appropriate food knowledge. - Demonstrates effective communication skills

202 *excluding University A

203 **Table 3: Data from four different assessors for 16 different student performances across four**
 204 **universities.***
 205

University / Student	Assessor B	Assessor C	Assessor G	Assessor E	Actual Result	Consistency with original assessment
UniA_1	19/30	27/30	29/30	28/30	28/30 (Pass)	100%
UniA_2	25/30	18/30	17/30	17/30	24/30 (Pass)	100%
UniA_3	7/30	17/30	17/30	9/30	13/30 (Fail)	50%
UniA_4	25/30	28/30	28/30	12/30	16/30 (Pass)	75%
University / Student	Assessor D	Assessor A	Assessor E	Assessor F	Actual Result	Consistency with original assessment
UniB_1**	Fail	Fail	Fail	Fail	15/30 (Pass)	0%
UniB_2**	Credit	Pass	Distinction	Pass	21/30 (Credit)	100%
UniB_3**	Distinction	Credit	Distinction	Credit	25/30 (Distinction)	100%
UniB_4**	Fail/Borderline	Distinction	Fail/Borderline	Credit	18/30 (Pass)	100%
University / Student	Assessor A	Assessor D	Assessor H	Assessor G	Actual Result	Consistency with original assessment
UniC_1	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	100%
UniC_2	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory	100%
UniC_3	Satisfactory	Satisfactory	Not assessed	Satisfactory	Satisfactory	100%
UniC_4	Not assessed	Satisfactory	Not assessed	Borderline	Unsatisfactory	0%
University / Student	Assessor C	Assessor B	Assessor F	Assessor H	Actual Result	Consistency with original assessment
UniD_1	Pass	Pass	Pass	Pass	Pass	100%
UniD_2	Pass	Fail/Borderline	Pass	Pass	Pass	100%
UniD_3	Pass	Pass	Fail/Marginal	Pass	Pass	100%
UniD_4	Pass	Fail	Pass	Pass	Fail	25%

206 *Ratngs provided in the form of individual university instructions for this process.

207 **Some assessors did not provide specific ratings as suggested.

208

209

210 **Table 4. Key findings from the discussion about involvement in the moderation process.**

Key concept	Descriptors
The role of assessment instruments	<p>Differences and advantages and disadvantages of each individual approach.</p> <p>Global (e.g. pass/fail global judgements were easier to make over and above numerical scales, especially true for the borderline students where tick boxes may have meant students were deemed successful or unsuccessful in the task using the assessment tool, by have conflicted with how the assessors overall opinion of readiness</p> <p>Shortcomings in the process used for moderation in that they were not trained in the use of the tools, but rather expected to understand the required standards of the home university.</p> <p>Only one university recorded students' reflections as part of assessment, with assessors reporting that this reflection would considerably add to their capacity to make a decision with confidence.</p>
Assessor factors	<p>Individual philosophies and perspectives influenced their assessment decisions.</p> <p>The exam recordings that lasted up to one-hour were reported to be burdensome for assessors which they explained may have influenced their judgements.</p> <p>There was a shared understanding of placement readiness in a subjective description of this standard over quantitative rankings.</p> <p>The objectiveness offered by assessors that were independent or external to the students' university, with no relationship or knowledge of the student prior to the assessment was viewed as a significant advantage.</p> <p>Being involved in the process of moderation, facilitated learning about the biases assessors bring to assessment decisions.</p>
The subjectivity of judgement	<p>The moderation process allowed assessors to feel more comfortable with making decisions and the subjectivity of assessment.</p> <p>The dialogue held around each student's performance was valuable for their development as assessors.</p> <p>A shared understanding of the standard of the tasks that need to be satisfactorily demonstrated by students prior to progression to placement was an important anchor in helping assessors make decisions.</p> <p>Students' ability to communicate as well as their ability to reflect and have insight into their performance was the main factor in determining readiness.</p> <p>Assessors reported relying much more on instinct and their years of professional experience of assessing students readiness for placement, rather than specific criteria outlined on the assessment instruments or forms.</p>