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**Development of the Clinical Placement Quality Survey – Educator (CPQS-E) Tool to
Evaluate the Quality of Physiotherapy Clinical Placements**

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Abstract

Background: Increasing demand for entry-level clinical education placements has resulted in changes to traditional models. In this evolving landscape, the ability to effectively assess clinical placement quality is critical. However, existing tools are not specific to physiotherapy and/or have focused on student's perspectives.

Purpose: To design a tool that can be utilised by clinical education providers to measure the quality of physiotherapy clinical placements.

Methods: A survey was developed based on published recommendations for quality indicators in clinical education. Content and face validity were established using an expert panel of clinical educators ($n=18$). Test-retest reliability was tested via physiotherapy clinical educators ($n=62$) completing the survey twice over a two-week period. Reliability of the survey was assessed using intraclass correlation coefficients (ICC), test-retest percentage agreement, and Cronbach's alpha.

Results: The ICC of 0.87 indicated minimal measurement error. The majority (98%, $n=62$) of test items met criteria for close agreement. The correlation coefficient of reliability ranged from 0.73 to 0.87 across four defined constructs.

Conclusion: Initial assessment of the Clinical Placement Quality Survey - Educator (CPQS-E) tool indicates that its properties provide a valid and reliable measure of entry-level physiotherapy placement quality from the perspective of the clinical educator.

I INTRODUCTION

Clinical education is an integral part of health professional education including entry-level physiotherapy programs (Patton et al., 2018; Stoikov et al., 2022). It is well established that the quality of the clinical learning environment is an important predictor of clinical learning outcomes (Siggins Miller, 2012). Within Australia, physiotherapy students spend an average of 1000 hours in clinical placements, with similar registration requirements stipulated internationally (CAPR, 2022; CSP, 2017; Kram et al., 2012). Expansion of student enrolments in physiotherapy programs means the volume of clinical placements has grown significantly for many jurisdictions (Bourne et al., 2019; Milne et al., 2022). With clinical placements representing such a significant component of entry-level physiotherapy education, it is essential that the learning environments are of high quality.

Markers of clinical placement quality have been widely researched in health professional education (Hills et al., 2019). Five quality indicators of best practice in clinical education have been proposed including: a culture for quality; effective supervision; learning opportunities; effective communication and collaboration; and resources and facilities (Siggins Miller, 2012). Regular assessment of performance against these indicators is advocated (Newstead et al., 2017).

Several instruments have been developed to apply quality indicators within health professional education (Siggins Miller, 2012; Wong & Bressington, 2021). Within nursing, instruments for assessing quality include the Clinical Learning Environment Inventory (Chan, 2003), the Clinical Learning Environment Scale (CLES) (Dunn & Burnett, 1995; Saarikoski & Leino-Kilpi, 2002), and the Clinical Learning Environment instrument (Chuan & Barnett, 2012). These instruments have been developed with a focus on the student's perspective of quality, based on evidence that a significant relationship exists between students' perceptions of the learning environment and their success (Henderson et al., 2011; van Hell et al., 2009). The CLES has also been expanded to the Clinical Learning Environment Supervision and Nurse Teacher evaluation scale (Courtney-Pratt et al., 2014; Saarikoski et al., 2008). In order to optimize clinical learning environments, a complete picture of clinical placement quality must be gained, and this must include the perspectives of clinical educators (Siggins Miller, 2012).

The CPQS-S (Clinical Placement Quality Survey – Student) is a recently validated and reliable tool that measures the quality of physiotherapy clinical placements from a student's perspective (Jones et al., 2022). The CPQS-S demonstrated high reliability for internal consistency through fair to strong agreement for test re-test reliability (Cohens kappa range 0.23 – 0.81) and high internal consistency with Chronbach's alpha ranging from 0.69 (fair) to 0.95 (excellent). Four independent constructs were identified through a factor analysis: student – educator relationship (factor loading 0.335 – 0.486), culture of learning (factor loading 0.888 – 0.921), supportive relationships (factor loading 0.993) and resource and facilities (factor loading 0.299 – 0.608) (Jones et al., 2022). The CPQS-S has been embedded on the electronic platform used for physiotherapy clinical placement assessment, APPLinkUp (Dalton et al., 2015; Jones et al., 2022; Louwen et al., 2023a).

II METHOD

Ethical approval for the study was granted by The Human Research Ethics Committee at the Royal Brisbane and Women's Hospital (protocol number – HREC/16/QRBW/401) and Griffith University (protocol number – GU2016/787).

A Phase 1: Content and Face Validity

Items for the survey were developed by the investigators (JH, GK, PT) using previous recommendations of quality markers as the primary framework (Siggins Miller, 2012), comparisons to existing published clinical placement surveys (Chan, 2003; Chuan & Barnett, 2012; Courtney-Pratt et al., 2014; Saarikoski & Leino-Kilpi, 2002), and local tools previously

utilised by hospitals and/or universities. Content validity was established through review of the instrument by a panel of experts (Boateng et al., 2018) that was convened through targeted invitation of key stakeholders with expertise in clinical education. Expertise was defined as having a minimum of two years full time equivalent of clinical education experience, membership of physiotherapy clinical education networks or employment at a university in a role directly linked to the delivery of the clinical education component of the program. Experts were also required to demonstrate recency of clinical education experience through directly supervising students, coordinating student placements, or overseeing the management of clinical placement coordination within the preceding 24 months. Experts could be in positions within university or public health sectors and represent any allied health profession. Identification of participants occurred through wide dissemination of an invitation to participate via clinical education networks in both the university and public health sectors.

Educators who met the criteria as an expert were provided with further information about the study and informed consent gained. Panel members were invited to evaluate components of the survey tool through a qualitative response, commenting on content relevance (themes) and usability (framing of questions, clarity, flow, order of questions, language and length). To facilitate this, an electronic Word document of the instrument was provided to the expert panel, which included a detailed explanation of the objectives of the survey tool, directions for reviewing the survey, and evaluative questions. The expert panel completed the review independently over a two week period. The feedback was then collated and reviewed by the research team using an inductive approach (JH, PT, and GK) and clarification of comments was obtained through email correspondence where necessary. After reviewing all feedback, the expert panel adjusted items within the draft tool (Duddle & Boughton, 2009). The draft survey was developed using SurveyMonkey®.

In order to reduce error inherent with the development of a survey, the tool was piloted prior to broad distribution (Weisberg, 2009). Pilot testing of the survey was conducted by distributing the draft survey electronically to ten clinical educators. The electronic format allowed participants to complete the first iteration of the survey and provide feedback through an evaluative survey consisting of three yes/no items to obtain participants' perception of the survey quality, usability, and suitability. Feedback from the pilot was reviewed by the research team, after which the survey tool was transcribed to SurveyMonkey®, and test-retest reliability commenced.

B Phase 2: Test-Retest Reliability

A cross-sectional, observational methodology was used to determine the test-retest reliability of the tool (Aday & Cornelius, 2006). Physiotherapy clinical educators were recruited through an invitation sent via Directors of Physiotherapy in 12 hospitals that provide clinical education in Queensland hospitals. The inclusion criteria required participants to have been the primary clinical educator for a clinical placement that commenced a maximum of twelve months prior and concluded at least one month prior to receiving the invitation. These criteria were based on literature that found the variability of perceptions of teaching evaluation decreased from one to four weeks, with four weeks post placement having the lowest variability of responses (McOwen et al., 2008).

An electronic link was provided to participants via email which diverted them to the online survey and information for informed consent. Consent to participate was implied through participants commencement of the survey within SurveyMonkey®. A standardised instruction was provided asking participants to complete the survey, with individuals attaching reference to a clinical placement that was completed more than one month prior but within the last 12 months.

In order to establish test-retest reliability, participants were required to complete the same survey twice. This occurred two weeks apart, with participants receiving a second email linking them to SurveyMonkey® tool and setting a code that allowed responses between weeks to be paired but remain anonymous. A two-week period was chosen between surveys to minimize bias between iterations, with two-weeks considered a sufficient interval that respondents are unlikely

to recall their previous answers (Litwin, 1995; Streiner & Norman, 1995). For administration of the two survey rounds, reminder emails were sent to non-responders seven days after the initial email invitation (McPeake et al., 2014).

No previous data was available with which to conduct a sample size calculation for test-retest reliability. Therefore, a minimum recruitment target of 40 educators was set as this sample size is deemed to produce data that conforms to a normal distribution (Gravetter & Wallnau, 2005).

C Data Analysis

Data from SurveyMonkey® was extracted and cleaned prior to exporting to SPSS® (Version 20.0). It was assumed that if a participant identified a different clinical placement type (e.g. cardiorespiratory versus neurology) between the two survey rounds, it was likely that the responses were relating to different experiences and thus invalid. An *a priori* decision was thus made to screen the clinical area item responses and exclude cases where referent clinical placements did not align. Missing values were excluded from test-retest data analysis.

The intraclass correlation coefficient (ICC) was calculated to assess reliability, using a two-way analysis of variance with 95% confidence intervals (Streiner & Norman, 1995). The ICC indicates the proportion of total variance in the measure (subject variability and measurement error) due to the true variability between participants. Ratings suggested by Landis and Koch (1977) have been followed (agreement level 0–0.2 = poor, 0.2–0.4 = fair, 0.4–0.6 = moderate, 0.6 – 0.8 = substantial; 0.8 - <1.0 = almost perfect).

Percentage agreement was calculated to measure stability of the tool over time. All items were evaluated for agreement and close agreement (Rodrigues et al., 2019). Exact agreement was defined as no change in response between test and retest surveys and close agreement was defined as a change in response of one point on a four-point Likert scale item (Dalton et al., 2012). When analysing the percentage agreement for the Yes/No and Likert scale items, an *a priori* exact or close agreement of 75% or greater was accepted (Dalton et al., 2012; Saelens et al., 2006).

Test items were categorised into four constructs. These were defined as: a culture for quality; student-educator relationship; collaboration between placement provider and education provider; and opportunities for learning, facilities and resources. Estimates of the internal consistency of each separate construct of the survey tool were computed using Cronbach's alpha as the coefficient of reliability (Tavakol & Dennick, 2011). A reliability coefficient of 0.7 or above was accepted as evidence of internal consistency (Duddle & Boughton, 2009). After completion of Phase 1 and 2, the final tool was titled the Clinical Placement Quality Survey – Educator (CPQS-E).

III RESULTS

A Participant Demographics

The expert panel formed for Phase I comprised a total of 18 clinicians of which six represented the education sector across five education providers, and 12 represented the public health sector across seven hospitals. Seventeen expert panel members were physiotherapists. One external expert (a speech pathologist) was included to provide a broader perspective on the development of the survey. Panel members reported a mean number of years of clinical experience of 14 ± 7 years, and a mean number of years of clinical education experience of 10 ± 6 years. Within the preceding 24 months 50% of panel members had directly supervised students, 33% had coordinated student placements and 11% had overseen the management of clinical placement coordination. Expert panel review demonstrated that the survey was concise, clear and logically ordered. Several recommendations from the expert panel were incorporated into the tested form of the survey. No further modifications were indicated following pilot testing.

For Phase II, a sample of 189 physiotherapy clinical educators were invited to participate in the study with a response rate of $n = 71$ (38%). A total of 68 out of 71 participants completed both

surveys (96%), with a mean of 22 days (± 6.58) between tests. Recruitment procedures ensured optimal representation of physiotherapy clinical educators by experience (clinical and clinical education, Figure 1), and location (metropolitan, regional, and rural/remote, Figure 2). Of these respondents, 94% identified as practicing within a hospital context, and 6% within a community context.

Figure 1
Clinical and educational experience of Phase II participants

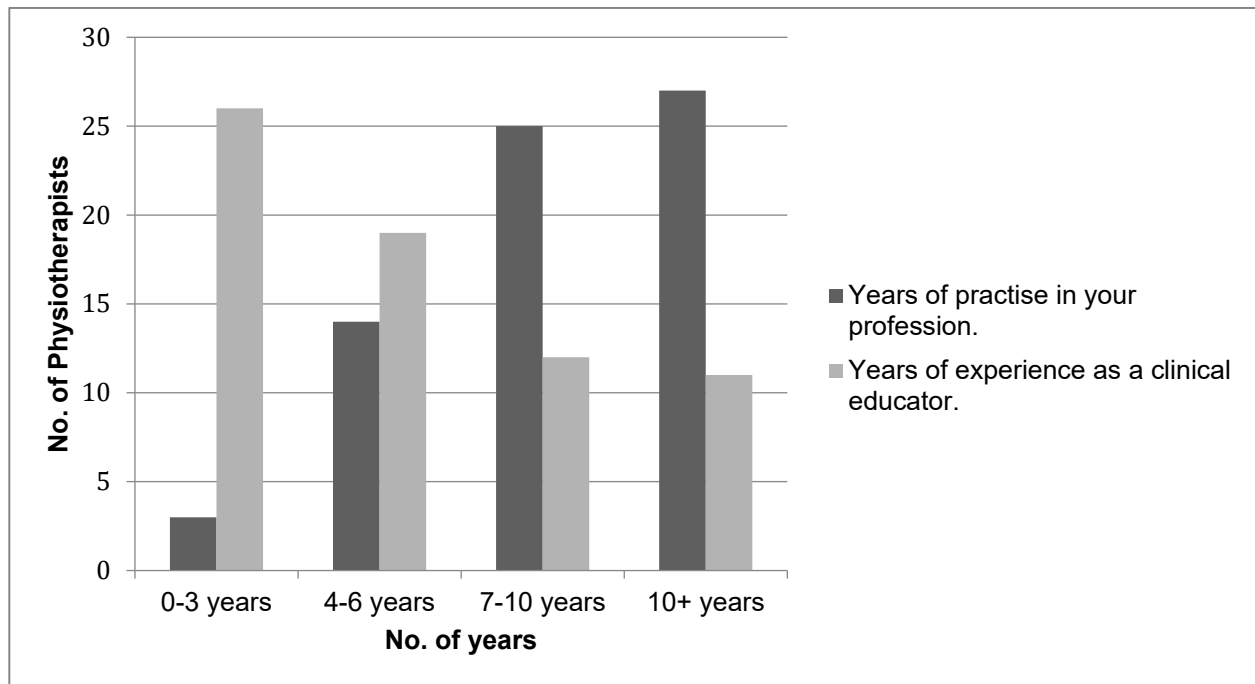
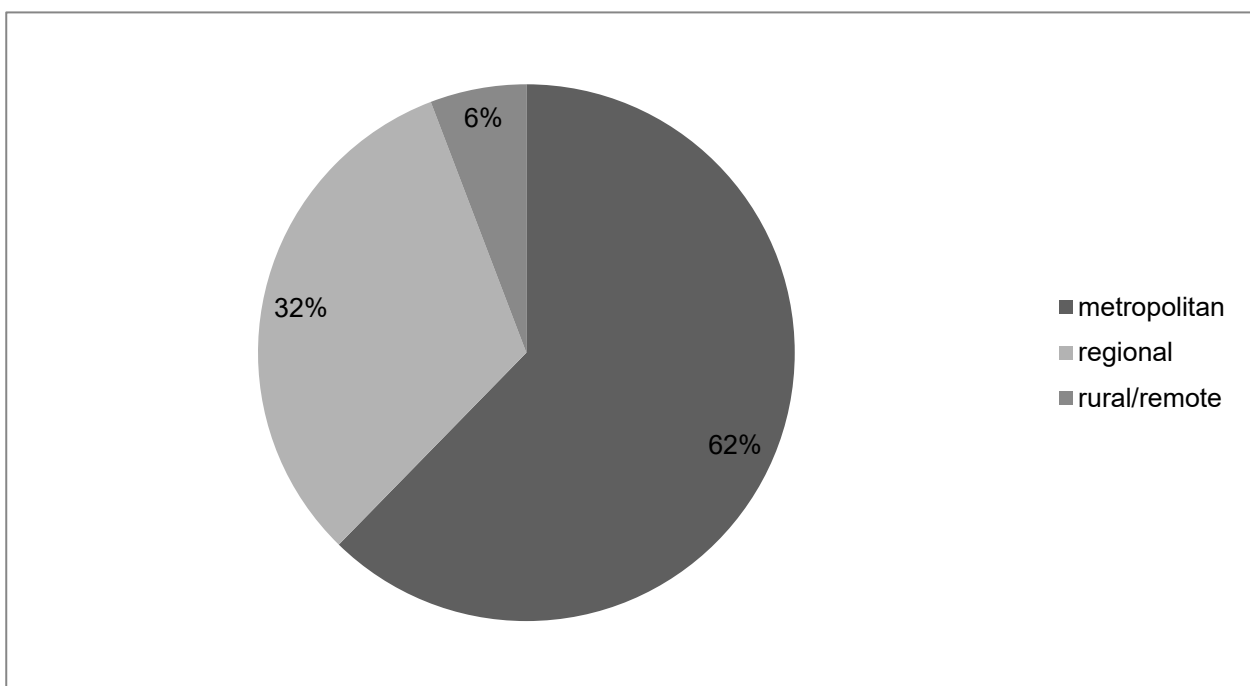


Figure 2
Geographical identification of Phase II participants



Missing data was noted in 11 out of the 68 cases. Of the 68 cases, six showed 'no agreement' between the clinical placement type and thus were excluded from data analysis. A total of 62 complete responses were thus used for test-retest analysis. Excellent reliability was demonstrated between first and second survey iterations. The average measure ICC was 0.87 with a 95% confidence interval of 0.78 - .095 (Table 1).

Table 1
Intraclass Correlation Coefficient for survey iterations

	Intraclass Correlation	95% Confidence Interval		F Test with True Value 0			
		Lower bound	Upper bound	Value	df1	df2	Sig
Single measures	.874	0.78	0.95	480.34	13	884	0.000
Average measures	.998	1.00	1.00	480.34	13	884	0.000

B Percentage Agreement

Test-retest analysis demonstrated that of the 63 test items, 51 (81%) had exact agreement between first and second survey rounds (Table 2 and 3). Eleven items (17%) had close agreement. Therefore, a total of 62 (98%) of test items met criteria for agreement and only one item did not meet agreement/criteria. This was item 43 (Local training), (Figure 3). Based on inclusion of this item by the expert panel, it was recommended that the context of this item is clinically relevant and important. Review of the structure of this item suggested that it contained two questions, resulting in inconsistency of interpretation. Hence, Item 43 was retained but modified to increase clarity to now read: "Please indicate the level of training you have received for the delivery of student clinical education placements: Local department training".

Table 2
CPQS-E items meeting agreement criteria

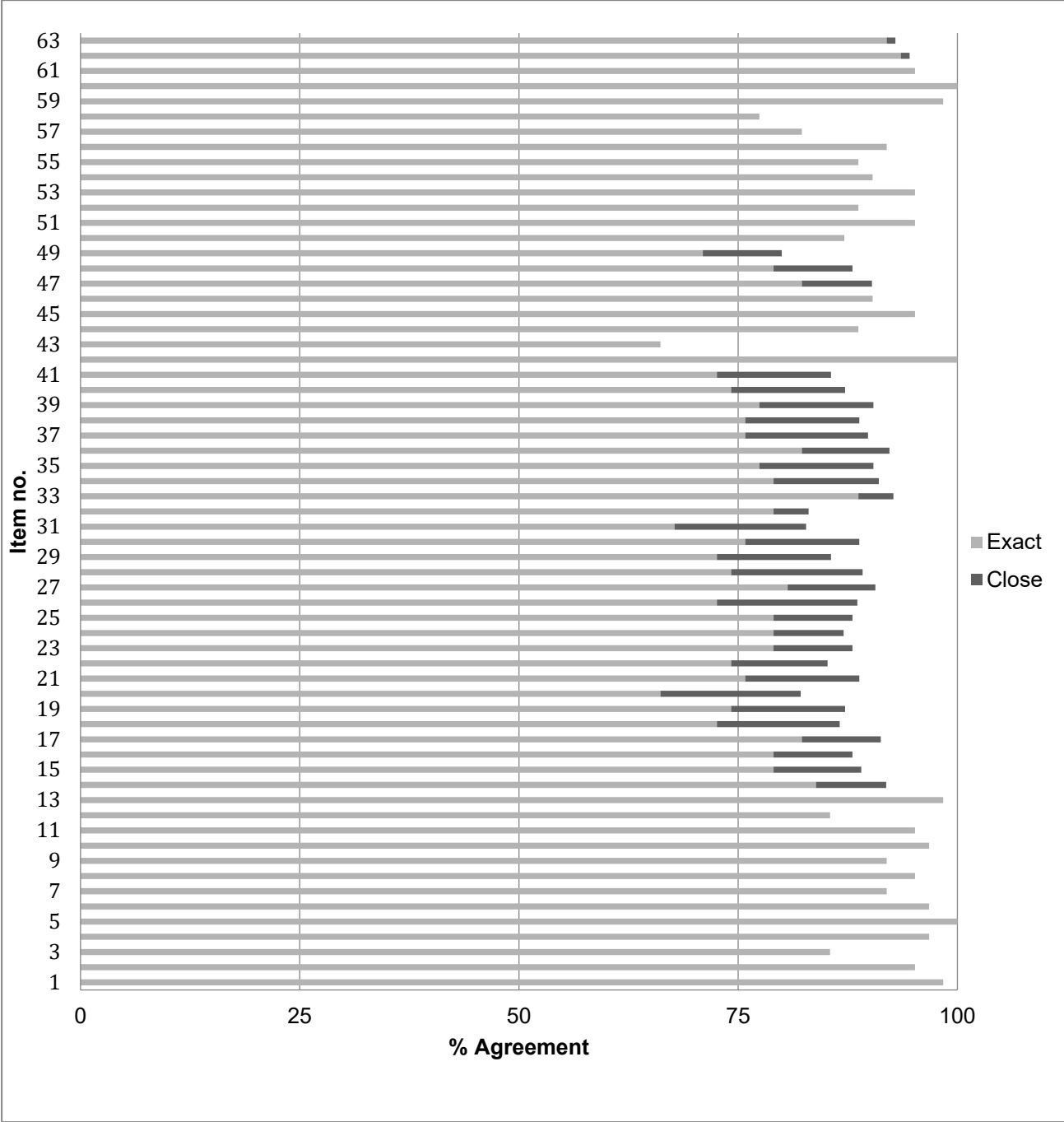
Agreement	Item number
Exact agreement	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,21,23,24,25,27,30,32,33,34,35,36,37,38,39,42,44,45,46,47,48,50,51,52,53,54,55,56,57,58,59,60,61,62,63
Close agreement	18,19,20,22,26,28,29,31,40,41,49
No agreement	43

Table 3
CPQS-E tool with construct and percentage agreement

CPQS-E Item	Construct	% Exact agreement (n)	% Close agreement (n)	% No agreement (n)	Missing data
Did the student orientation include: (No / Limited / Yes / Unsure)					
1. Orientation to the placement's general environment (e.g. toilets, tearoom, student area)?	Culture	98 (61)	98 (61)	2 (1)	0
2. Introduction to relevant staff and their roles?	Culture	95 (59)	95 (59)	5 (3)	0
3. Where to find relevant policies and procedures?	Culture	85 (53)	85 (53)	15 (9)	0
4. Site specific Workplace Health & Safety, fire and emergency procedures?	Culture	97 (60)	97 (60)	3 (2)	0
5. Information about the typical casemix / type of clinical presentations?	Culture	100 (62)	100 (62)	0 (0)	0
6. Orientation to the placement's clinical environment?	Culture	97 (60)	97 (60)	2 (1)	1
Please identify if the following were included in the student orientation: (No / Limited / Yes)					
7. Expectations relating to professional conduct were discussed.	Relationship	92 (57)	92 (57)	6 (4)	1
8. A timetable of activities and responsibilities was provided (e.g. tutorials, student presentations/projects, non-contact time, scheduled meetings).	Relationship	95 (59)	95 (59)	3 (2)	1
9. The expected clinical workload for the placement was discussed (e.g. number of patients per day).	Relationship	92 (57)	92 (57)	6 (4)	1
10. Assessment processes were discussed.	Relationship	97 (60)	97 (60)	2 (1)	1
11. Feedback processes were discussed.	Relationship	95 (59)	95 (59)	3 (2)	1
12. Expected learning objectives were discussed.	Relationship	85 (53)	85 (53)	11 (7)	2
13. Opportunities for the student(s) to ask questions and clarify placement information were provided.	Culture	98 (61)	98 (61)	0 (0)	1
Please rate the student's capability at the beginning of the placement with respect to the following statements: (Strongly Disagree / Disagree / Agree / Strongly Agree)					
14. The student(s) demonstrated appropriate foundational theory and practical knowledge relevant to the clinical area.	Collaboration	84 (52)	97 (60)	2 (1)	1
15. The student(s) demonstrated professional readiness to commence placement (e.g. professional dress, completed mandatory training).	Collaboration	79 (49)	95 (59)	3 (2)	1
16. The student(s) appropriately initiated communication (e.g. initial contact with educator, sought learning opportunities, engaged with clients/colleagues).	Relationship	79 (49)	94 (58)	5 (3)	1
Please comment on the availability of opportunities to meet learning outcomes: (Strongly Disagree / Disagree / Agree / Strongly Agree)					
17. The student(s) had sufficient opportunities to actively participate in direct patient care.	Opportunities	82 (51)	97 (60)	0 (0)	2
18. An appropriate range of opportunities were provided for the student(s) to meet their university's essential learning outcomes.	Opportunities	73 (45)	95 (59)	2 (1)	2
19. Opportunities were provided for student(s) to seek / access additional learning experiences.	Opportunities	74 (46)	95 (59)	2 (1)	2
20. Opportunities were provided for interdisciplinary learning.	Opportunities	66 (41)	92 (57)	5 (3)	2
Please rate your perception regarding access to human resources: (Strongly Disagree / Disagree / Agree / Strongly Agree)					
21. During the placement, my facility's expectations regarding my workload and responsibilities were clear.	Culture	76 (47)	97 (60)	2 (1)	1
22. I was able to meet my expected workload during the placement.	Culture	74 (46)	92 (57)	6 (4)	1
Please rate your perception regarding access to physical resources: (Strongly Disagree / Disagree / Agree / Strongly Agree)					
23. Appropriate space was available to facilitate this student placement.	Opportunities	79 (49)	94 (58)	5 (3)	1
24. The student(s) were able to access electronic resources appropriately (e.g. computers, internet).	Opportunities	79 (49)	92 (57)	6 (4)	1
25. The facility is equipped with appropriate resources to enhance student learning for this placement. (e.g. reference material, training tools).	Opportunities	79 (49)	94 (58)	3 (2)	2
Please rate the following with respect to the provision of feedback to student(s): (Strongly Disagree / Disagree / Agree / Strongly Agree)					
26. Time was scheduled with the student(s) to provide feedback on their performance.	Relationship	73 (45)	98 (61)	0 (0)	1
27. Time was allocated for the student(s) to reflect on and discuss their learning experience.	Relationship	81 (50)	97 (60)	2 (1)	1
28. Feedback allowed for active student collaboration (e.g. reflection, discussion of strategies for improvement).	Relationship	74 (46)	98 (61)	0 (0)	1
29. I provided regular feedback to the student(s), including written feedback.	Relationship	73 (45)	94 (58)	5 (3)	1
30. After receiving feedback, student(s) were provided with relevant opportunities to improve.	Relationship	76 (47)	97 (60)	0 (0)	2
31. Student(s) implemented changes in response to feedback.	Opportunities	68 (42)	92 (57)	6 (4)	1
32. I had time to prepare for formal feedback.	Relationship	79 (49)	85 (53)	13 (8)	1
33. I am confident using the assessment tool.	Relationship	89 (55)	95 (59)	2 (1)	2
34. The opportunity to consult with other staff about student performance was available.	Culture	79 (49)	98 (61)	0 (0)	1

CPQS-E Item	Construct	% Exact agreement (n)	% Close agreement (n)	% No agreement (n)	Missing data
Please rate the following statements related to culture for clinical education in the learning environment. (Strongly Disagree / Disagree / Agree / Strongly Agree)					
35. An inclusive and welcoming environment was provided for student(s).	Culture	77 (48)	98 (61)	0 (0)	1
36. The student(s) contributed in a positive way to the team.	Opportunities	82 (51)	98 (61)	0 (0)	1
37. Overall, I believe this placement was a valuable learning experience for the student(s).	Opportunities	76 (47)	98 (61)	0 (0)	1
38. Overall, I consider clinical education within my department to be a valuable experience for clinical educators.	Culture	76 (47)	97 (60)	2 (1)	1
39. Overall, clinical education is valued and encouraged within my department.	Culture	77 (48)	98 (61)	0 (0)	1
40. As a clinical educator, my role is supported by my department and team.	Culture	74 (46)	95 (59)	3 (2)	1
41. My role as a clinical educator is valued by the University.	Relationship	73 (45)	94 (58)	3 (2)	2
Please indicate the level of training you have received for delivery of student clinical education placements. (No/Yes)					
42. None	Culture	100 (62)	100 (62)	0 (0)	0
43. Local departmental training or handover process	Culture	66 (41)	66 (41)	34 (21)	0
44. Training provided by organisation e.g. health service workshop	Culture	89 (55)	89 (55)	11 (7)	0
45. University based training e.g. clinical educator workshop	Culture	95 (59)	95 (59)	5 (3)	0
46. Other (please specify)	Culture	90 (56)	90 (56)	10 (6)	0
Please rate the following statements related to training for clinical education. (Strongly Disagree / Disagree / Agree / Strongly Agree)					
47. The clinical education training I have received appropriately prepared me to educate students.	Relationship	82 (51)	95 (59)	3 (2)	1
48. There is adequate access to clinical education training external to my department (e.g. interprofessional videoconference series).	Culture	79 (49)	94 (58)	5 (3)	1
49. There is adequate access to clinical education training internally within my facility.	Culture	71 (44)	85 (53)	13 (8)	1
Please outline if the University appropriately provided the following information prior to placement: (No/Yes)					
50. A University resource manual.	Collaboration	87 (54)	87 (54)	11 (7)	1
51. The names and contact details for the student(s) prior to placement (e.g. email address).	Collaboration	95 (59)	95 (59)	3 (2)	1
52. Program information (e.g. course content and structure).	Collaboration	89 (55)	89 (55)	10 (6)	1
53. The contact details for appropriate University staff to contact during the placement.	Collaboration	95 (59)	95 (59)	2 (1)	2
54. During placement, the University initiated contact with me regarding student progress.	Collaboration	90 (56)	90 (56)	8 (5)	1
55. During placement, the University's expectations regarding my role was clear.	Collaboration	89 (55)	89 (55)	10 (6)	1
56. During placement I requested support from the University.	Collaboration	92 (57)	92 (57)	6 (4)	1
From the list below please state why you did not require any support from the University (select all applicable). (No/Yes)					
57. I am an experienced educator and confident to manage most clinical education situations.	Collaboration	82 (51)	82 (51)	18 (11)	0
58. There is appropriate support provided internally within my facility (e.g. Clinical Educator Co-ordinator on site).	Collaboration	77 (48)	77 (48)	23 (14)	0
59. I was not aware that I was able to request support from the University.	Collaboration	98 (61)	98 (61)	2 (1)	0
60. I was not clear who to contact for support from the University.	Collaboration	100 (62)	100 (62)	0 (0)	0
Please rate the following with respect to the University's response to your request. (Strongly Disagree / Disagree / Agree / Strongly Agree)					
61. The University's response was timely.	Collaboration	95 (59)	95 (59)	5 (3)	0
62. The support provided by the University was appropriate to the situation (e.g. site visit, phone contact).	Collaboration	94 (58)	95 (59)	5 (3)	0
63. The support provided by the University was effective.	Collaboration	92 (57)	94 (58)	6 (4)	0
Percentage meeting criteria		81%	98%	2%	

Figure 3
Percentage agreement between 1st and 2nd rounds on CPQS-E. Percent close agreement is within 1 point on the 4-point scale



C Internal Consistency

Cronbach's alpha coefficient values for each of the defined constructs are indicated in Table 4. The values obtained from Cronbach's alpha coefficient for the CPQS-E ranged from 0.73 to 0.87. A value of >0.7 was demonstrated for all analyses, suggesting high internal consistency for all constructs (Curtis & Drennan, 2013).

Table 4
Construct allocation and Cronbach's alpha for items on CPQS-E

Construct (Likert questions)	Test items included	Cronbach's alpha
Culture for Quality	21, 22, 34, 35, 38, 39, 40, 48, 49	.84
Student/Educator Relationship	16, 26, 27, 28, 29, 30, 32, 33, 41, 47	.86
Collaboration between Placement Provider and Education Provider	14, 15, 61, 62, 63	.73
Opportunities for Learning, Facilities and Resources	17, 18, 19, 20, 23, 24, 25, 31, 36, 37	.87

IV DISCUSSION

A Interpretation of Findings

The CPQS-E is a systematically developed tool that has been demonstrated to provide a valid and reliable measure of clinical placement quality from the clinical educator's perspective (see Appendix). Content validity was established through participation of an expert panel and experienced clinical educators. Psychometric testing established reliability of the survey including stability of the CPQS-E over time. Internal correlation was demonstrated for the four constructs of: a culture for quality; student/educator relationship; collaboration between placement provider and education provider; and opportunities for learning, facilities and resources. Further, the coefficient of reliability for all constructs was less than 0.9, indicating that there is no redundancy among items and that the test length does not need to be reduced (Streiner, 2003).

The non-alignment of clinical placement types reported by participants in Phase 2 excluded six complete survey responses from analysis. In practice, the risk of error in reporting demographics would be low as the survey is designed to be completed immediately following the conclusion of a clinical placement rather than relying on recall. However, to reduce the potential of measurement error, it is recommended that the demographic item be redesigned to be a defined field instead of free text. The suggested descriptors of clinical area are: Neurorehabilitation; Acute Cardiorespiratory; Community; Paediatrics; Orthopedics; Women's Health; Musculoskeletal; Rural generalist; Other – please specify (free text). This categorising of placement types would additionally allow for the CPQS-E to be used to measure a general perception of a clinical educator over time rather than a specific reflection on one particular placement, thereby broadening the potential application of the CPQS-E beyond quality assurance to include quality improvement applications. For example, the CPQS-E could be used to assess baseline and post-implementation impacts of strategies targeting clinical education quality improvement.

B Importance of Findings

The development of this tool contributes to addressing the identified paucity of evidence regarding evaluation of quality in allied health clinical placement literature (McAllister et al., 2018; Venville et al., 2018; Winchester-Seeto, 2019). Frameworks for quality in clinical education recognise the multi-dimensional nature of the clinical learning context and the need for a whole-of system approach is required when assessing quality in clinical placements (Campbell et al.,

2021; Schindler et al., 2015). Based on the domains of quality for allied health clinical placements defined in the Siggins Miller report (2012), the CPQS-E provides valuable information including student preparedness, perception of university support provided, and impacts of operational resourcing and structures on student learning opportunities. This information aligns with two of the four domains described in Campbell et al's framework for assuring quality in work integrated learning (2021): institutional requirements (including targeted professional development, resourcing, support and recognition), and stakeholder engagement (including communication between higher education bodies and placement providers, reward and recognition, and diverse stakeholder engagement). Furthermore, in providing the clinical educator's perspective, the CPQS-E offers an additional voice that is needed to triangulate with student feedback (Jones et al., 2022; McAllister et al., 2018). The Placement Quality Survey (PQS), a clinical placement quality-assessment instrument similarly based on the Siggins Miller report (2012), was designed to capture the perspectives of multiple stakeholders including students, university academics, clinical educators, and placement site managers (McAllister et al., 2018). However, uptake of the PQS is limited as it has not been validated with clinical educators or placement site managers.

C Implications for Stakeholders

The importance of ensuring quality in work-integrated learning contexts is increasing within higher education and is of interest to multiple stakeholders including governments and regulators of quality in higher education, and universities and employers seeking to ensure employability of graduates (Winchester-Seeto, 2019). The CPQS-E offers the opportunity to evaluate clinical placement quality specifically from the clinical educator's perspective. Future application could include assessment of current practice to inform targeted organisational implementation strategies and clinical educator training requirements, to explore differences between different placement providers, and to explore relationships between student and educator perspectives. In Australia, the complementary instruments of the CPQS-S and the CPQS-E have been embedded into a national online assessment platform (APPLinkup) (Louwen et al., 2023a; Louwen et al., 2023b), thus providing both education providers and placement providers with the information required to evaluate placement quality from triangulated perspectives (Jones et al., 2022). In addition, the CPQS-E provides an instrument through which placement providers can monitor changes to placement quality as clinical placement capacity demand increases as is currently occurring (McBride et al., 2020).

D Limitations

This study has provided initial evidence of the psychometric properties of the CPQS-E. A limitation of the development of this tool has been the recruitment of educators and testing relative to clinical placements provided in hospital settings and limited reference to community and private practice clinical placements. In addition, exploratory factor analysis is commonly used to identify the dimensions of a survey, and so increase rigor of correlation analysis and enable refinement of the tool. For this tool the minimum sample size required to proceed to factor analysis was 280 respondents (Gorsuch, 1983). Future evaluation of the CPQS-E tool via factor analysis is recommended. Similarly, construct validity analysis is recommended should comparable tools become available. The markers measured by the CPQS-E constitute common themes of quality across allied health professions and hence transferability of the tool is anticipated but requires further investigation.

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Declaration of Interest

The authors report there are no competing interests to declare.

References

- Aday, L., & Cornelius, L. J. (2006). *Designing and conducting health surveys : A comprehensive guide* (3rd ed.). Jossey-Bass.
- Boateng, G. O., Neilands, T. B., Frongillo, E. A., Melgar-Quiñonez, H. R., & Young, S. L. (2018). Best practices for developing and validating scales for health, social, and behavioral research: A primer *Frontiers in public health*, 2018-06, Vol.6, p.149-149
<https://doi.org/10.3389/fpubh.2018.00149>
- Bourne, E., Short, K., McAllister, L., & Nagarajan, S. (2019). The quantitative impact of placements on allied health time use and productivity in healthcare facilities : A systematic review with meta-analysis. *Focus on Health Professional Education: A Multi-Professional Journal*, 20(2), 8-40. <https://doi.org/10.11157/fohpe.v20i2.315>
- Campbell, M., Leoni, R., Thomson, K., Tunny, R., Smith, L., & McAllister, L. (2021). The construction and testing of a framework to assure the institutional quality of work-integrated learning. *International Journal of Work-Integrated Learning*, 22(4), 505.
- CAPR. (2024). Canadian Alliance of Physiotherapy Regulators: Supervised clinical practise hours. Canada. Retrieved 19/4/2024 from <https://alliancept.org/change-to-supervised-clinical-practice-hours-policy/>
- Chan, D. S. (2003). Validation of the clinical learning environment inventory. *Western Journal of Nursing Research*, 25(5), 519-532. <https://doi.org/10.1177/0193945903253161>
- Chuan, O. L., & Barnett, T. (2012). Student, tutor and staff nurse perceptions of the clinical learning environment. *Nurse Education in Practice*, 12(4), 192-197.
<https://doi.org/10.1016/j.nepr.2012.01.003>
- Courtney-Pratt, H., Fitzgerald, M., Ford, K., Johnson, C., & Wills, K. (2014). Development and reliability testing of the quality clinical placement evaluation tool. *Journal of Clinical Nursing*, 23(3-4), 504-514. <https://doi.org/10.1111/jocn.12158>
- CSP. (2017). Chartered society of Physiotherapy: Practice educators. Retrieved 9/5/2022 from <https://www.csp.org.uk/professional-clinical/cpd-education/professional-development/become-practice-educator?msclkid=031ce5edb71511ec91e0c146ef434f19>
- Curtis, E. A., & Drennan, J. (2013). *Quantitative health research: Issues and methods*. (1st ed) McGraw-Hill Education, Open University Press, 320-321.
- Dalton, M., Davidson, M., & Keating, J. L. (2012). The assessment of physiotherapy practice (APP) is a reliable measure of professional competence of physiotherapy students: A reliability study. *Journal of Physiotherapy*, 58(1), 49-56. [https://doi.org/10.1016/s1836-9553\(12\)70072-3](https://doi.org/10.1016/s1836-9553(12)70072-3)
- Dalton, M., Russell, T., & Keating, J. L. (2015). WWW.APPLinkup.COM-an online system to manage and collate workplace based assessment outcomes for physiotherapy students. *Physiotherapy*, 101, e288-e289. <https://doi.org/10.1016/j.physio.2015.03.480>
- Duddle, M., & Boughton, M. (2009). Development and psychometric testing of the nursing workplace relational environment scale (NWRES). *Journal of Clinical Nursing*, 18(6), 902-909. <https://doi.org/10.1111/j.1365-2702.2008.02368.x>
- Dunn, S. V., & Burnett, P. (1995). The development of a clinical learning environment scale. *Journal of Advanced Nursing*, 22(6), 1166-1173.
- Gorsuch, R. (1983). *Factor analysis* (2 ed.). Psychology Press.
<https://doi.org/10.4324/9780203781098>
- Gravetter, F., & Wallnau, L. (2005). *Essentials of statistics for the behavioural sciences*. Wadsworth.

- Henderson, A., Briggs, J., Schoonbeek, S., & Paterson, K. (2011). A framework to develop a clinical learning culture in health facilities: Ideas from the literature. *International Nursing Review*, 58(2), 196-202. <https://doi.org/10.1111/j.1466-7657.2010.00858.x>
- Hills, C., Quigley, D., Bennett, A. E., Haughey, F., & McMahon, S. (2019). Core indicators of quality in practice education placements in allied health and social care professions: A scoping review protocol. *JBIS Database Systematic Reviews and Implementation Reports*, 17(6), 1060-1070. <https://doi.org/10.11124/JBISRIR-2017-004031>
- Jones, T., Kirwan, G., Howells, S., & Hams, A. (2022). Clinical placement quality survey–student (CPQS-S): A tool to evaluate allied health placement quality. *International Journal of Work Integrated Learning*. 23(4), 579-593.
- Kram, K. E., Wasserman, I. C., & Yip, J. (2012). Metaphors of identity and professional practice: Learning from the scholar–practitioner. *The Journal of Applied Behavioral Science*. 48(3), 304-341. <https://doi.org/10.1177/0021886312439097>
- Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics*, 33(1), 159-174.
- Litwin, M. S. (1995). *Reliability: How to measure survey reliability and validity*. SAGE Publications, Inc. <https://doi.org/10.4135/9781483348957>
- Louwen, C., Adams, K., Jones, T., Kirwan, G., Hams, A., Hargreaves, J., & Russell, T., (2023). Clinical placement quality survey - student (CPQS-Student) dashboard. Queensland Government, Queensland Health. Brisbane, Australia. Internal Queensland Health report: unpublished.
- McAllister, L., Nagarajan, S., Scott, L., Smith, L., & Thomson, K. (2018). Developing measures of placement quality in allied health, dentistry, medicine, and pharmacy. *International Journal of Practice-Based Learning in Health and Social Care*, 6(2), 31-47. <https://doi.org/10.18552/ijpbhlsc.v6i2.493>
- McBride, L.-J., Fitzgerald, C., Costello, C., & Perkins, K. (2020). Allied health pre-entry student clinical placement capacity: Can it be sustained?. *Australian Health Review*, 44(1), 39–46. <https://doi.org/10.1071/AH18088>
- McOwen, K. S., Kogan, J. R., & Shea, J. A. (2008). Elapsed time between teaching and evaluation: Does it matter?. *Academic Medicine*, 83(10), S29-32. <https://doi.org/10.1097/ACM.0b013e318183e37c>
- McPeake, J., Bateson, M., & O'Neill, A. (2014). Electronic surveys: How to maximise success. *Nurse Researcher*, 21(3), 24-26. <https://doi.org/10.7748/nr2014.01.21.3.24.e1205>
- Milne, N., Dunwoodie, R., Kirwin, G., Palmer, T., Gauchwin, J., Donovan, M., Dyson, C., Hams, A.H., & Hill, A.E. (2022). Educating the educator: Evaluation of a standardised format, one-day clinical educator workshop on the assessment of physiotherapy student performance in clinical placement. *Australian Journal of Clinical Education*, 11(1), 1-18. <https://doi.org/https://doi.org/10.53300/001c.32993>
- Newstead, C., Johnston, C., Nisbet, G., & McAllister, L. (2017). Physiotherapy clinical education in Australia: Development and validation of a survey instrument to profile clinical educator characteristics, experience and training requirements. *New Zealand Journal of Physiotherapy*, 45(3), 154-169. <https://doi.org/10.15619/NZJP/45.2.07>
- Patton, N., Higgs, J., & Smith, M. (2018). Clinical learning spaces: Crucibles for practice development in physiotherapy clinical education. *Physiotherapy Theory Practice*, 34(8), 589-599. <https://doi.org/10.1080/09593985.2017.1423144>
- Rodrigues, I. B., Adachi, J. D., Beattie, K. A., Lau, A., & MacDermid, J. C. (2019). Determining known-group validity and test-retest reliability in the PEQ (personalized exercise

- questionnaire). *BMC Musculoskeletal Disorders*, 20(1), 373-373. <https://doi.org/10.1186/s12891-019-2761-3>
- Saarikoski, M., Isoaho, H., Warne, T., & Leino-Kilpi, H. (2008). The nurse teacher in clinical practice: Developing the new sub-dimension to the clinical learning environment and supervision (CLES) scale. *International Journal of Nursing Studies*, 45(8), 1233-1237. <https://doi.org/10.1016/j.ijnurstu.2007.07.009>
- Saarikoski, M., & Leino-Kilpi, H. (2002). The clinical learning environment and supervision by staff nurses: Developing the instrument. *International Journal of Nursing Studies*, 39(3), 259-267.
- Saelens, B. E., Frank, L. D., Auffrey, C., Whitaker, R. C., Burdette, H. L., & Colabianchi, N. (2006). Measuring physical environments of parks and playgrounds: EAPRS instrument development and inter-rater reliability. *Journal of Physical Activity and Health*, 3(s1), S190-S207. <https://doi.org/10.1123/jpah.3.s1.s190>
- Schindler, L., Puls-Elvidge, S., Welzant, H., & Crawford, L. (2015). Definitions of quality in higher education: A synthesis of the literature. *Higher Learning Research Communications*, 5(3), 3. <https://doi.org/10.18870/hlrc.v5i3.244>
- Siggins Miller, C. (2012). Promoting quality in clinical placements: Literature review and national stakeholder consultation. Retrieved 19/4/2024 from <https://www.adea.com.au/wp-content/uploads/2013/08/Promoting-quality-in-clinical-placements-report-20130408.pdf>
- Stoikov, S., Maxwell, L., Butler, J., Shardlow, K., Gooding, M., & Kuys, S. (2022). The transition from physiotherapy student to new graduate: Are they prepared?. *Physiotherapy Theory and Practice*, 38(1), 101-111. <https://doi.org/10.1080/09593985.2020.1744206>
- Streiner, D. L. (2003). Starting at the beginning: An introduction to coefficient alpha and internal consistency. *Journal of Personality Assessment*, 80(1), 99-103. https://doi.org/10.1207/s15327752jpa8001_18
- Streiner, D. L., & Norman, G. R. (1995). *Health measurement scales: A practical guide to their development and use* (5th ed.). Oxford University Press. <https://psycnet.apa.org/doi/10.1093/med/9780199685219.001.0001>
- Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, 2, 53-55. <https://doi.org/10.5116/ijme.4dfb.8dfd>
- van Hell, E. A., Kuks, J. B., & Cohen-Schotanus, J. (2009). Time spent on clerkship activities by students in relation to their perceptions of learning environment quality. *Medical Education*, 43(7), 674-679. <https://doi.org/10.1111/j.1365-2923.2009.03393.x>
- Venville, A., Lynch, B., & Santhanam, E. (2018). A systematic approach to the evaluation of the student experience in work-integrated learning. *International Journal of Work-Integrated Learning*, 19(1), 13-21.
- Weisberg, H. F. (2009). *The total survey error approach: A guide to the new science of survey research*. University of Chicago Press.
- Winchester-Seeto, T. (2019). *Quality and standards for work integrated learning*. Australian Council of Deans of Science. <https://www.acds.edu.au/wp-content/uploads/Winchester-Seeto-Literature-Review-Quality-and-Standards.pdf>
- Wong, W. K., & Bressington, D. T. (2021). Psychometric properties of the clinical learning environment, Supervision and Nurse Teacher scale (CLES+T) for undergraduate nursing students in Hong Kong. *Nurse Education in Practice*, 52, 103007-103007. <https://doi.org/10.1016/j.nepr.2021.103007>

Appendix

Clinical Placement Quality Survey - Educator (CPQS-E) tool – Recommended version

Introduction

Clinical education is an integral part of professional practice within allied health. The purpose of this survey is to evaluate clinical educator feedback relating to the quality of pre-registration clinical placements. Your feedback will better enable us as health care and education providers to plan and co-ordinate future placements, to continue to improve clinical education support of both students and clinical facilities, and to continually improve the overall quality of clinical education.

Please answer these questions in relation to the clinical placement you have most recently completed.

The survey will take approximately 10 minutes.

Your identity will remain anonymous in the collation of the data from this survey and all data will be aggregated to preserve anonymity. Your participation is voluntary. By completing this survey you are agreeing to the use of the data for the review, evaluation, research and reporting of outcomes related to the quality of clinical education.

Thank you for taking the time to complete this survey. We value your input to student learning.

Demographics

1. Facility
2. Clinical Area [free text]
3. University (select all applicable)
 - Australian Catholic University
 - Bond University
 - Central Queensland University
 - Griffith University
 - James Cook University
 - Queensland University of Technology
 - University of Queensland
 - University of Southern Queensland
 - University of the Sunshine Coast
 - Other (please specify)

Orientation to Facility

4. Did the student orientation include:

	No	Limited	Yes	Unsure
Orientation to the placement's general environment (e.g. toilets, tearoom, student area)?				
Introduction to relevant staff and their roles?				

Where to find relevant policies and procedures?				
Site specific Workplace Health & Safety, fire and emergency procedures?				
Information about the typical case-mix / type of clinical presentations?				
Orientation to the placement's clinical environment?				

5. If you answered No or Limited to any of the above, please comment why.

6. Please identify if the following were included in the student orientation:

	No	Limited	Yes
Expectations relating to professional conduct were discussed.			
A timetable of activities and responsibilities was provided (e.g. tutorials, student presentations/projects, non-contact time, scheduled meetings).			
The expected clinical workload for the placement was discussed (e.g. number of patients per day).			
Assessment processes were discussed.			
Feedback processes were discussed.			
Expected learning objectives were discussed.			
Opportunities for the student(s) to ask questions and clarify placement information were provided.			

7. If you answered No or Limited to any of the above, please comment why.

Student Preparedness and Professionalism

8. Please rate the student's capability at the beginning of the placement with respect to the following:

	Strongly Disagree	Disagree	Agree	Strongly Agree
The student(s) demonstrated appropriate foundational theory and practical knowledge relevant to the clinical area.				
The student(s) demonstrated professional readiness to commence placement (e.g. professional dress, completed mandatory training).				
The student(s) appropriately initiated communication (e.g. initial contact with educator, sought learning opportunities, engaged with clients/colleagues).				

9. If you answered Strongly Disagree or Disagree to any of the above, please comment why.

Opportunities to Meet Learning Outcomes

10. Please comment on the availability of opportunities to meet learning outcomes:

	Strongly Disagree	Disagree	Agree	Strongly Agree
The student(s) had sufficient opportunities to actively participate in direct patient care.				

An appropriate range of opportunities were provided for the student(s) to meet their university's essential learning outcomes.				
Opportunities were provided for student(s) to seek / access additional learning experiences.				
Opportunities were provided for interdisciplinary learning.				

11. If you answered Strongly Disagree or Disagree to any of the above, please comment why.

Access to Resources

12. Please rate your perception regarding access to human resources:

	Strongly Disagree	Disagree	Agree	Strongly Agree
During the placement, my facility's expectations regarding my workload and responsibilities were clear.				
I was able to meet my expected workload during the placement.				

13. If you answered Strongly Disagree or Disagree to either of the above, please outline what the barriers were with respect to your workload.

14. Please rate your perception regarding access to physical resources:

	Strongly Disagree	Disagree	Agree	Strongly Agree
Appropriate space was available to facilitate this student placement.				
The student(s) were able to access electronic resources appropriately (e.g. computers, internet).				
The facility is equipped with appropriate resources to enhance student learning for this placement. (e.g. reference material, training tools).				

15. If you answered Strongly Disagree or Disagree to either of the above, please outline why you feel available space or resources were inadequate.

Provision of Feedback

16. Please rate your perception regarding access the provision of feedback to student(s):

	Strongly disagree	Disagree	Agree	Strongly Agree
Time was scheduled with the student(s) to provide feedback on their performance.				
Time was allocated for the student(s) to reflect on and discuss their learning experience.				
Feedback allowed for active student collaboration (e.g. reflection, discussion of strategies for improvement).				
I provided regular feedback to the student(s), including written feedback.				

After receiving feedback, student(s) were provided with relevant opportunities to improve.				
Student(s) implemented changes in response to feedback.				
I had time to prepare for formal feedback.				
I am confident using the assessment tool.				
The opportunity to consult with other staff about student performance was available.				

17. If you answered Strongly Disagree or Disagree to either of the above, please comment on what aspects of providing feedback were limited.

Culture for Clinical Education

18. Please rate the following statements related to culture for clinical education in the learning environment:

	Strongly disagree	Disagree	Agree	Strongly Agree
An inclusive and welcoming environment was provided for student(s).				
The student(s) contributed in a positive way to the team.				
Overall, I believe this placement was a valuable learning experience for the student(s).				
Overall, I consider clinical education within my department to be a valuable experience for clinical educators.				
Overall clinical education is valued and encouraged within my department.				
As a clinical educator my role is supported by my department and team.				
My role as a clinical educator is valued by the university.				

19. If you answered Strongly Disagree or Disagree to either of the above, please outline what aspects of culture for clinical education were lacking.

Training for Clinical Education

20. Please indicate the level of training you have received for delivery of student clinical education placements:

- None
- Local departmental training
- Training provided by organisation e.g. health service workshop
- University based training e.g. clinical educator workshop
- Other (please specify)

21. Please rate the following statements related to training for clinical education:

	Strongly disagree	Disagree	Agree	Strongly Agree
The clinical education training I have received appropriately prepared me to educate students.				

There is adequate access to clinical education training external to my department (e.g. interprofessional videoconference series).				
There is adequate access to clinical education training internally within my facility.				

22. If you answered Strongly Disagree or Disagree to either of the above, please outline why you felt the training or access to training was limited.

Collaboration between Clinical Education Partners

23. Please outline if the university appropriately provided the following information prior to placement:

	No	Yes
A university resource manual.		
The names and contact details for the student(s) prior to placement (e.g. email address).		
Program information (e.g. course content and structure).		
The contact details for appropriate university staff to contact during the placement.		

24. Please outline information about communication with the university:

	No	Yes
During placement, the university-initiated contact with me regarding student progress.		
During placement, the university's expectations regarding my role was clear.		
During placement, I requested support from the university.	1	2

¹No (Go to Question 25)

²Yes (Go to Question 26)

25. From the list below please state why you did not require any support from the university (select all applicable):

- I am an experienced educator and confident to manage most clinical education situations.
- There is appropriate support provided internally within my facility (e.g. Clinical Educator Co-ordinator on site).
- I was not aware that I was able to request support from the university.
- I was not clear who to contact for support from the university.
- Other (please comment). Go to end of survey.

26. Please rate the following with respect to the university's response to your request:

	Strongly disagree	Disagree	Agree	Strongly Agree
The university's response was timely.				
The support provided by the university was appropriate to the situation (e.g. site visit, phone contact).				
The support provided by the university was effective.				

27. If you answered Strongly Disagree or Disagree to any of the above, please comment why.

End of Survey

Thank-you for your feedback. It is greatly appreciated.