



Evaluating the Quality of Workplace Learning For Student Nurses in Hospital Settings

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Executive Summary

Background

The educational preparation of many professionals includes a practice component where learning is integrated in a workplace environment. The practice component is an important part of teaching and learning in the applied professions (Benner, Sutphen, Leonard, & Day, 2010; Mulholland, Mallik, Moran, Scammell, & Turnock, 2005). During their Bachelor of Nursing degree student nurses in New Zealand undertake a significant proportion of their learning in workplace practice settings. The educational outcomes for student nurses in these settings depend, in part, upon the quality of the teaching and learning environment provided. Sound educational practice requires a process for monitoring and evaluating the quality of student nurses' clinical placements. However, no instrument for evaluating student nurses' clinical practice learning experience has been validated in New Zealand.

A number of instruments for assessing clinical learning environments have been developed for different health disciplines, in a variety of countries. However, differences in context, such as discipline or country, may limit the application of these tools in nursing education in New Zealand. A review of the instruments in the international nursing literature demonstrated a paucity of information about the psychometric testing or international validation of these tools that would enable confident use of them in the New Zealand nursing education setting. Of the available tools, Saarikoski's (2002) Clinical Learning Environment, Supervision (CLES) scale and Saarikoski, Isoaho, Warne, and Leino-Kilpi's (2008) Clinical Learning Environment, Supervision and Nurse Teacher (CLES+T) scale, developed in Finland to assess hospital learning, appear to be the most robust. The CLES+T (or its earlier version, the CLES) has been used as a research instrument in over twenty countries and translated into 16 languages (M. Saarikoski, personal communication 4 July, 2008) making the CLES+T one of the most widely used measures of student nurses' perceptions of the quality of their clinical learning experience in a hospital setting. However, there are some limitations in the psychometric development of the CLES+T to date. The current study attempts to address these limitations and strengthen the psychometric development of the CLES+T scale.

Aims

The aims of this study were to:

- Determine the face validity of the Clinical Learning Environment, Supervision and Nurse Teacher Scale (CLES+T) for evaluating the quality of the clinical learning environment, supervision, and teaching given to nursing students in hospital and community settings in New Zealand.
- Explore the construct validity of the CLES+T in hospital settings in New Zealand.

- Confirm whether the CLEST+T has the same construct structure in hospital settings in New Zealand as has been reported in Finland.
- Evaluate the internal reliability of the components of the CLES+T in the context of hospital settings in New Zealand.
- Describe nursing students' perceptions of their clinical learning environment, supervision and teaching in hospital settings in New Zealand.
- Pilot test the feasibility of using Digium Enterprises internet-based information collection and feedback management software service for distributing evaluative surveys and for collecting and analysing information.

Design & Methods

There were three phases to establishing the validity of the CLES+T in the New Zealand (NZ) context. Phases one and two were undertaken in this study. Phase one sought to establish the face validity of the CLES+T in both hospital and community settings in NZ. Phase two investigated the construct validity and reliability of the CLES+T in hospital settings in New Zealand. Phase three investigated the construct validity and reliability of the CLES+T in community settings in New Zealand and was undertaken and reported as a separate study. The study was approved by the Christchurch Polytechnic Institute of Technology Ethics Committee and the CPIT Nursing & Human Services Research Committee.

Sample: In phase one, the face validity was determined by a purposively selected expert panel of three nursing students, two clinical supervisors, two managers and four nurse teachers, from both hospital and community settings. In phase two, first, second, and third year Bachelor of Nursing students at Christchurch Polytechnic Institute of Technology (CPIT) who were completing hospital placements between July 2008 and December 2009 were invited to participate in the study. Valid responses were received from 416 student nurse respondents (41% response rate).

Data Collection: For use in New Zealand, a cultural safety item was added to the CLES+T scale (increasing the instrument to 35 items) and some terminology adapted to clarify meaning in the New Zealand context. The CLES+T questionnaire was administered online for both phases one and two. Additionally, in phase two some paper-based questionnaires were also used.

Analysis: In phase one descriptive statistics were used to report the consensus level regarding the face validity of each item. Respondents' suggested alterations to items were recorded as written. In phase two, statistical analysis was performed using SPSS 17.0. Exploratory Factor Analysis was used to establish: (i) the construct validity of the CLES+T (NZ version) in NZ hospitals and (ii) comparison of the construct structure between hospital settings in New Zealand and Finland. The internal reliability of the components of the CLES+T (NZ) was ascertained by calculating Cronbach's alpha coefficient and correlations between components. Demographic and placement variables effects on students'

perceptions of their clinical learning environment, supervision, and teaching in hospital settings were determined using correlation coefficients and ANOVA.

Results

In phase one, assessing the face validity, most of the panel (77.8%) thought all 34 items on the CLES+T had face validity for evaluating student nurses' perceptions of clinical learning environments, supervision and teaching in community settings in New Zealand. In the hospital setting only two items had less than 70 % of respondents rating the item as relevant with no alterations required. Given the high level of agreement about relevance of all items in the instrument to the community context, and 32 of the 34 items in the hospital context, the potential contribution of the phase 2 construct validity and reliability results to the psychometric development of the instrument, and the study aim of making international comparisons, the research team decided to include all 34 items in the next phase of the study and made no further changes to items in the instrument. The face validity of the items supported progression to further psychometric testing to assess the construct validity and internal reliability of the CLES+T in both hospital and community settings in New Zealand.

In phase two, determining the construct validity of the CLES+T, the Exploratory Factor Analysis found the strongest statistical support for a four factor model. The Finnish study (Saarikoski et al., 2008) also found a four factor model to be statistically the most coherent model. Instead of reporting that model Saarikoski et al. reported a five component model that was consistent with a prior theoretical framework. The statistically robust four factor model not reported by Saarikoski et al. (2008) was almost identical to the four factor model found in the New Zealand sample. In both the Finnish and New Zealand studies factor one encompassed items from two components reported by Saarikoski et al. (2008): *Pedagogical atmosphere* and *Premises of nursing*. The only difference was that in New Zealand one additional item loaded on this factor. The items in factors two and three correspond exactly between the two factor analyses and are the same as the *Nurse teacher* and *Supervisory relationship* components reported by Saarikoski et al. (2008). In both studies the items in factor four correspond to the *Leadership style of the manager* component reported by Saarikoski et al. except that in the New Zealand sample one item loaded on factor one. This difference can be explained by the random allocation of items in the New Zealand sample. Thus, two studies on independent samples from different countries have confirmed that the CLES+T has a robust four factor model. The fact that the same four factor structure was produced from two independent samples of nursing students in different parts of world, and that in the New Zealand sample the items were presented in random order, is a conservative test that confirms the validity of the four factor model presented in this report and increases confidence in the ability to generalise the findings.

Interpreting and naming the four factors was undertaken following rotation of the factors to clarify and simplify the data structure. Factor one explained the greatest percent of variance and is therefore important in the hierarchy of factors. Factor one encompasses two

previously reported components *Pedagogical atmosphere* and *Premises of nursing* (Saarikoski et al., 2008) plus one other item. The combination of two components suggests they may not be distinct components but rather together represent one factor. Based on item loadings, thematic analysis of items and theoretical models of workplace learning the researchers interpreted and named factor one as *Connecting with, and learning in, communities of clinical practice*. The other factors have retained the previously reported names of *Nurse teacher*, *Supervisory relationship*, and *Leadership style of the manager* (Saarikoski et al., 2008).

All four factors were found to have Cronbach's $\alpha > .8$ (highly reliable). Three of the four factors had excellent alpha values ($> .9$) and the fourth factor had a good alpha value ($> .8$) particularly given that it only has three items. These results demonstrate that the CLES+T is a reliable tool to measure student nurses' perceptions of their clinical learning environments, supervision, and nurse teachers in hospital settings in New Zealand.

The CLES+T is sensitive enough to show significant relationship between students' perceptions of their clinical learning environments relative to a number of demographic and placement variables. There were significant correlations between the duration of placement and students' perceptions of *Connecting with, and learning in, communities of clinical practice*, the *Nurse teacher*, and the *Supervisory relationship*. Students' perception of *Connecting with, and learning in, communities of clinical practice* and the *Supervisory relationship* tended to increase as the duration of the clinical placement increased. However, students' perception of the *Nurse teacher* tended to decrease as the duration of the clinical placement increased. There were significant correlations between the number of meetings with the nurse teacher and students' perceptions of *Connecting with, and learning in, communities of clinical practice*, and the *Nurse teacher*. As the number of meetings with the nurse teacher increased student's perception of *Connecting with, and learning in, communities of clinical practice* tended to decrease and their perceptions of the *Nurse teacher* tended to increase. There were no significant correlations between the students' age and the four factors.

The CLES+T is also sensitive enough to show significant effects of different demographic and placement variables on students' perceptions of their clinical learning environments. The student's year in the BN programme has a significant effect on their perception of three of the four factors. Third year students perceived *Connecting with, and learning in, communities of clinical practice* as significantly better than both second and first year students. Second year students perceived *Connecting with, and learning in, communities of clinical practice* as significantly better than first year students. Thus, there is an increasingly positive perception of *Connecting with, and learning in, communities of clinical practice* as students' progress through the three years of the programme. First year students perceived their nurse teacher significantly better than both second and third year students. On

average third year students perceived significantly better supervisory relationships than second year students.

The type of placement was also shown to have an effect on students' perceptions of their clinical learning environment. Students perceived *Connecting with, and learning in, communities of clinical practice* to be significantly better in both general hospital and mental health placements than in continuing care placements. Students in continuing care placements perceived their *Nurse teacher* to be significantly better than students in general hospital placements. Students in mental health placements perceived the *Leadership style of the manager* to be significantly better than the leadership style of the manager in continuing care placements.

During their clinical placements students in this study were supported by one of two models: the preceptorship model and the Dedicated Education Unit (DEU) model. The model of support had no significant effect on students' perceptions of the four factors. This confirms that students are neither disadvantaged nor advantaged by one model or the other. It also suggest that the DEU model is as good as the preceptorship model which has previously been regarded as the gold standard model for supporting students in clinical practice.

Overall students' perceptions of their clinical learning environments as measured by the CLES+T were overwhelmingly positive. Although all items attracted responses across the spectrum (from 1 fully disagree to 5 fully agree) the most frequent response to every question was the highest score (5). Comparison of two factors (*Supervisory relationship* and the *Nurse teacher*) between this study and that of Saarikoski et al. (2008) in Finland was possible. The results show that New Zealand nursing students from CPIT rate their relationship with their supervisor and their nurse teacher significantly higher than do Finnish students.

This study was designed to test the validity and reliability of the CLES+T and to describe students' perceptions of factors important to quality learning environments. It is not possible from this study to identify the cause of the differences between the New Zealand and Finnish students' perceptions of the nurse teacher and supervisory relationship. Nor is it possible to unravel the combined effects of multiple variables on students' perceptions of their clinical learning environments.

Recommendations for further research

- That Schools of Nursing in Tertiary teaching institutions in New Zealand use the CLES+T and the four factor structure reported here as a tool to evaluate the quality of clinical learning environments in hospital settings.
- Given the strength of the internal reliability of the CLES+T it may be possible to further refine the number of items in each factor.

- *Connecting with, and learning in, a community of clinical practice* appears to be an important factor in students' perceptions of hospital clinical placements that warrants further theoretical and empirical research.
- Research into the relationship between the duration of clinical placements, the amount of nurse teacher input and students' perceptions of their clinical learning environments is warranted.

Conclusion

The validity of a four factor construct for the CLES+T has been confirmed by this study. Furthermore, the internal reliability of those factors is strong and the CLES+T is sensitive enough to detect how different variables affect students' perceptions of their clinical learning environments. Consequently the CLES+T has sufficient validity, reliability, and sensitivity to be used by researchers, educators, and clinicians who wish to monitor the quality of clinical learning environments in hospital settings in New Zealand.

Introduction

The educational preparation of many professionals includes a practice component where learning is integrated in a workplace environment. The practice component is an important part of teaching and learning in the applied professions (Benner, Sutphen, Leonard, & Day, 2010; Mulholland, Mallik, Moran, Scammell, & Turnock, 2005). Nursing is an applied profession where internationally the educational preparation of registered nurses has moved from a workplace apprenticeship model into the tertiary education sector, either in polytechnics or universities. This is usually a three to four year degree or diploma qualification (Saarikoski, Marrow, Abreu, Riklikiene, & Ozbicakci, 2007). Although there are differences in curricula regionally, nationally, and internationally, the practice component remains a universal and integral part of undergraduate nursing education.

In New Zealand the education of registered nurses is a three year Bachelor of Nursing degree which includes “a minimum of 1100 practice hours for all students with all students being entitled to 1500 practice hours in which to demonstrate competence” (Nursing Council of New Zealand (NCNZ), 2005, p. 5). Consequently, during their three years of tertiary study for a Bachelor of Nursing student nurses in New Zealand undertake a significant proportion of their learning in workplace practice settings. This provides students with an opportunity to apply theoretical knowledge and clinical skills in the real world of nursing and to learn from those real world experiences (Henderson, Twentyman, Heel, & Lloyd, 2006).

In workplace practice settings the educational outcomes for student nurses, in part, depend upon the quality of the teaching and learning environment provided in those settings. Sound educational practice requires a process for monitoring and evaluating the quality of student nurses’ clinical placements. Accordingly the NCNZ (2005) requires tertiary institutions offering nursing programmes to have a process for monitoring the quality of clinical learning environments. However, no instrument for evaluating student nurses’ clinical practice learning experiences has been validated in New Zealand. Therefore, a literature search was undertaken to identify instruments that might be suitable for evaluating student nurses’ clinical practice learning experiences in New Zealand.

Background

There are a number of instruments for assessing classroom learning environments (e.g. Coll, Taylor, & Fisher, 2002; Fraser, Treagust, & Dennis, 1986; Logan, Crump, & Rennie, 2006). However, there are significant differences in what is learnt, and how learning occurs, in classroom and workplace settings (Eraut, 2004). Consequently, a number of instruments for assessing workplace learning environments, particularly clinical environments, have been developed by different health disciplines. For example in the United States Marshall (1978) developed the Medical School Learning Environment Survey (MSLES), and Henzi, Davis,

Jasinevicius, Hendricson, Cintron and Isaacs (2005) developed the Dental School Learning Environment Survey based on the MSLES. While there are similarities between nursing, medical, and dental education there are some significant differences; in addition there are significant differences between the health systems in the USA and New Zealand. These two factors would limit the application of these tools in nursing education in New Zealand.

There are a limited number of instruments in the international nursing literature. To assess the factors in the learning environment that influence nursing student learning Dunn and Burnett (1995) selected 55 items based on Orton's (1981) 124 item ward learning climate survey, and asked 423 student nurses from an Australian nursing school to complete the survey. Dunn and Burnett conducted a principal component analysis (PCA) on the resulting data. Items with low loadings ($<.4$) or with high loadings ($>.4$) on more than one component were deleted, leaving 31 items. The PCA identified 4 components. However, the four components only accounted for 34.6% of the total variance. Dunn and Burnett (1995) then conducted a confirmatory factor analysis (CFA) using 34 items subjectively selected (from Orton's 1981 survey) for their fit with themes from a literature review. The CFA resulted in a refined four factor scale. The components obtained by PCA were then compared and contrasted with the factors obtained by CFA. One component (interpersonal relationships) that was present in the PCA but missing in the refined CFA was added to those obtained by CFA. However, no justification was provided for adding that component. This process resulted in the 23 item Clinical Learning Environment (CLE) scale which consists of five subscales with high to marginal internal reliability: staff-student relationships ($\alpha = .77$), nurse manager commitment ($\alpha = .80$), patient relationships ($\alpha = .63$), interpersonal relationships ($\alpha = .70$) and student satisfaction ($\alpha = .85$). The CLE scale has the advantage of being developed specifically for evaluating clinical learning environments in a nursing context. Furthermore, the Australian nursing education and health systems are similar to those in New Zealand. However, there is no indication of sampling adequacy and the sample size of 423 for 55 items falls below the recommended 10:1 participant to item ratio (Costello & Osborne, 2005). The internal reliability of one of the subscales is marginal, no justification was given for adding another subscale to the tool, and there is no indication of the percentage of variance explained by each factor or the total variance explained by the final five factor model.

Chan (2001, 2003) developed the 35 item Clinical Learning Environment Inventory (CLEI) for measuring student nurses' perceptions of clinical learning environments in hospital settings. The CLEI was developed by taking salient scales from the College and University Classroom Environment Inventory (CUCEI) (Fraser, Treagust, & Dennis, 1986) and making some modifications and additions to both the scales and items (Chan, 2001, 2003). This may be a limitation as there are significant differences in what is learnt, and how learning occurs, in classroom and workplace settings. The CLEI comes in an actual and preferred form. The actual form measures students' perceptions of the actual learning environment, and the preferred form measures students' ideal learning environment (Chan, 2003). Psychometric

testing of the CLEI has not included exploratory or confirmatory factor analysis and has been limited to estimating its internal consistency and discriminant validity on a relatively small sample of 108 students in Australia. The Cronbach's alpha coefficients of each of the five sub-scales in the actual form ranged from .73 to .84 and in the preferred form from .66 to .80. The mean correlation of each sub-scale with the other sub-scales was used to assess the discriminant validity of the sub-scales; the correlations ranged from .39 to .45 in the actual version, and from .23 to .42 in the preferred version. Chan (2003) interprets these results as showing the CLEI measures distinct but overlapping aspects of the hospital learning environment. Although the CLEI has been used in studies in Australia (Henderson, Twentyman, Heel, & Lloyd, 2006), the United Kingdom (Midgley, 2006), and Hong Kong (Chan & Ip, 2007) there is no evidence of any further psychometric testing or international validation of the CLEI.

Saarikoski (2002) developed the Clinical Learning Environment and Supervision (CLES) scale in Finland to assess hospital learning environments. A review of research published during the 1980s and 1990s into clinical learning environments resulted in the development of a theoretical framework for the CLES scale. The theoretical framework consisted of the following aspects which have been shown to influence the quality of the learning for student nurses in workplace environments:

- the quality of the relationship the student has with their workplace supervisor,
- the workplace atmosphere,
- the leadership style of the manager of the workplace,
- the premises that underpin nursing practice in the workplace, and
- the premises of learning in the workplace (Saarikoski, 2002).

Saarikoski (2002) developed items around each of these aspects, and pilot tested items on a sample of 163 Finnish nursing students. This led to the development of a second version of the instrument. The face validity of items in the second version was tested with an expert panel of nurse educators. The construct validity of the 27 item CLES questionnaire was assessed using exploratory factor analysis on a sample of 416 nursing students from four Finnish colleges. The factor analysis identified a five factor model which explained 64% of the total variance and supported the theoretical framework of the clinical learning environment modelled from the earlier research (Saarikoski & Leino-Kilpi, 2002). In addition, Saarikoski and Leino-Kilpi (2002) demonstrated that the CLES has good internal reliability as measured by Cronbach's alpha which ranged from a high of .94 to a low of .73. The concurrent validity of the CLES was assessed with Dunn and Burnett's (1995) CLE scale and both scales were found to have high congruence (Saarikoski, Isoaho, Leino-Kilpi, & Warne, 2005). The CLES has also been shown to be able to detect differences in students' perceptions of their clinical learning environments in an international comparison of 416 Finnish and 142 UK nursing students (Saarikoski, Leino-Kilpi, & Warne 2002). In addition, the CLES scale has been used to describe students' experience of supervision in clinical practice across eight European countries (Saarikoski, Marrow, Abreu, Riklikiene, & Ozbicakci, 2007).

One notable limitation in the scope of the CLES scale was that it did not consider the role of the nurse teacher employed by the educational institution on student nurses' perceptions of their clinical learning environment. Following a review of the literature on the role of the nurse teacher in clinical workplace environments nine new items measuring this aspect were added to the CLES scale (Saarikoski, Warne, Kaila, & Leino-Kilpi, 2009). This new instrument is called the Clinical Learning Environment, Supervision, and Nurse Teacher (CLES+T) scale and contains 34 items; 25 items from the CLES plus the nine new items. The construct validity and internal reliability of the new instrument was tested in a sample of 549 Finnish students from four schools of nursing using principal component analysis and Cronbach's alpha respectively (Saarikoski, Isoaho, Warne, & Leino-Kilpi, 2008). The CLES+T has five components which explain 67% of the total variance and Cronbach's alpha coefficients that range from a high of .94 to a low of .73. The CLES or the CLES+T have been used as research instruments in over twenty countries and translated into 16 languages (M. Saarikoski, personal communication 4 July, 2008) making them among the most widely used measures of student nurses' perceptions of the quality of their clinical learning experience in a hospital setting.

There are some limitations in the psychometric development of the CLES+T to date. The construct validity of the CLES+T is based on a principal component analysis that fitted the prior theoretical model (Saarikoski et al., 2008). Principal component analysis is useful for reducing data to its component parts. However, it does not identify the factor structure, from which is derived the latent variables that cause responses to items in the scale to covary (Costello & Osborne, 2005). Exploratory factor analysis should be used when the aim is to identify a set of unknown constructs (latent variables) that underlie the items in a scale (Fabrigar, Wegener, MacCallum, & Strahan, 1999). Saarikoski et al. (2008) did undertake an exploratory factor analysis and report that a four factor model was statistically the most coherent model (Saarikoski et al., 2008). However, the four factor model was not reported, and no attempt was made to explore alternative theories that could explain the four factor model; instead the five component model that fitted the prior theoretical model was reported.

Another potential weakness of the published principal component analysis is that the items were presented to respondents already divided into labelled components. This may have suggested to respondents that the answers given to items in each component should be related. Furthermore, Saarikoski et al. (2008) used a Varimax rotation to simplify the data structure. However, Varimax rotation assumes components are unrelated and there was strong evidence from past research (Saarikoski & Leino-Kilpi, 2002) to show the components were closely related. In the social sciences where factors are generally expected to correlate there is a growing body of opinion that an oblique rotation such as the direct oblimin is preferred to orthogonal rotations such as the Varimax rotation (Costello & Osborne, 2005; Fabrigar et al., 1999; Field, 2009; Pett, Lackey, & Sullivan, 2003). The current

study attempts to address these limitations and strengthen the psychometric development of the CLES+T scale.

Despite these limitations the CLES+T appears to have been through more robust psychometric development and testing than other tools available. In addition, the publicly funded Finnish nursing education and health systems are similar to those in New Zealand. However, evidence suggests that instruments designed in one country may not be culturally appropriate in another (Meade, 2005). Furthermore, the CLES+T instrument has not been validated in an international context outside Europe. Consequently, it was seen as important to test the validity and reliability of the CLES+T in the New Zealand context and to address the limitations in the psychometric development of the CLES+T before using it as a tool to measure student nurses' perceptions of their clinical learning environments.

The study

Aims

The aims of this study were to:

- Determine the face validity of the Clinical Learning Environment, Supervision and Nurse Teacher Scale (CLES+T) for evaluating the quality of the clinical learning environment, supervision, and teaching given to nursing students in hospital and community settings in New Zealand.
- Explore the construct validity of the CLES+T in hospital settings in New Zealand.
- Confirm whether the CLES+T has the same construct structure in hospital settings in New Zealand as has been reported in Finland.
- Evaluate the internal reliability of the components of the CLES+T in the context of hospital settings in New Zealand.
- Describe nursing students' perceptions of their clinical learning environment, supervision and teaching in hospital settings in New Zealand.
- Pilot test the feasibility of using Digium Enterprises internet-based information collection and feedback management software service for distributing evaluative surveys and for collecting and analysing information.

Context of the study

Nursing education in New Zealand

In order to become a Registered Nurse in New Zealand students must complete a three year Bachelor of Nursing (BN) programme. Currently there are 17 approved programmes in New Zealand: 14 at polytechnics and three at universities. Regulation of nursing in New Zealand is undertaken by the Nursing Council of New Zealand (NCNZ). All Bachelor of Nursing programmes are approved and subsequently audited by the NCNZ. BN programmes include

theory and related practice experiences, with all students entitled to 1500 practice hours. Nurses are awarded a Bachelor of Nursing by the educational institution from which they graduate, but must also pass a national examination set by the NCNZ to gain registration, and meet practice requirements to be issued with an Annual Practicing Certificate (APC) by the NCNZ. There are approximately 1200 newly registered nurses in New Zealand each year (Nursing Council of New Zealand, 2009).

The BN curriculum and clinical practice placements at CPIT

The BN curriculum at CPIT provides students with clinical courses which include a range of practice experiences designed to meet the requirements of the NCNZ Education Programme Standards for the Registered Nurse Scope of Practice (2005) and the Competencies for Registered Nurses (2007). These practice components must occur in both hospital and community settings. Minimum and maximum clinical hours, consistent with NCNZ requirements, are offered for each course. The learning outcomes and competencies for each clinical course, based on the NCNZ competencies, are assessed by clinical lecturers employed by CPIT in conjunction with registered nurses employed in the specific clinical area. There is an expectation that students will demonstrate an increase in independent behaviour related to the application of knowledge, skills and attitudes over the three year programme.

Year One students begin their clinical practice in Continuing Care settings. These placements are in institutions that have a mostly older adult population who require different levels of care ranging from assisted independent living to hospital level care. Year One (Part A)¹ students begin with three half-day visits to these placements to meet and introduce themselves to their allocated patients/residents and primarily focus on communication skills as a beginning health professional. In Year One (Part B) the students progress to 14 eight hour clinical days which mostly occur in a clinical block². The focus at this time is on developing clinical nursing and health assessment skills with their allocated patients/residents. Year One students are allocated in groups of six to eight students to each clinical placement and have a clinical lecturer present for all their shifts.

Year Two (Part A) students undertake a Mental Health placement in either a community or inpatient area. They have 30 clinical days over a seven week period with most weeks being four day clinical weeks. These students work eight hour shifts Monday to Friday, as rostered by the placement staff. The clinical lecturer is present for the equivalent of 0.5 hrs per student per day which equates to approximately two hours per student per week. It follows

¹ Each year of the programme is divided in Part A and Part B. Each part represents one semester of the academic year. Thus, a student in Year 1 Part A is undertaking the first semester of their programme, in Year 1 Part B the second semester of their programme.

² A clinical block denotes days that are grouped together rather than spread. This may be four or five days in a week depending on the course requirements.

that the more students in a particular area the greater amount of time the clinical lecturer is present.

Year Two (Part B) students undertake a Medical/Surgical placement. This may be combined in one ward/unit that is able to provide this experience, or in two different wards/units, one with a medical and one with a surgical specialty focus. These students have 45 days over a 10-week period with a combination of four and five day weeks. Again these students work eight hour shifts Monday to Friday, as rostered by the ward/unit. The clinical lecturer contact hour allocation is the same as Year Two (Part A).

Year Three (Part A) students have a six week (30 day) Community Health placement. Examples of possible placements are an urban or rural medical practice, district nursing, child health nursing, correctional health and public health nursing. With Year Three students the clinical lecturer supervision is decreased to the equivalent of 1.5 hrs per student per week (or nine hours over the six week placement).

Year Three (Part B) students complete their final placement(s) in an area of practice in which they are interested. This may be influenced by their future career plans or may be due to a need to consolidate or extend their skills in a particular area. This placement requires rostered shifts (including night shift and weekends if appropriate). During the period of data collection in this study CPIT was transitioning between two curricula. Respondents from the outgoing curriculum had two five week transition to practice placements and students in the incoming curriculum had one 8-11 week clinical block (duration depends on the number of clinical hours the student needs to meet the NCNZ requirements). The clinical lecturer visits the students for the equivalent of one hour per week over the placement block. This decrease in clinical lecturer contact reflects the expectation for the student to integrate and become part of the nursing team in this final placement.

CPIT clinical teaching and learning models utilised within the Bachelor of Nursing programme

CPIT School of Nursing currently endorses two clinical teaching and learning models to support students during their clinical placement: preceptorship and the Dedicated Education Unit (DEU). Preceptorship is based on an individualised teaching/learning method whereby each student is assigned to a specific preceptor for the duration of the placement. This allows the student to experience daily practice with a role model and resource person immediately available within the clinical setting. The student 'mirrors' the preceptor's roster. The student is allocated a CPIT clinical lecturer who visits them for short periods each week to check on their progress and undertake their clinical assessment with assistance from the student's preceptor.

The DEU is a model of clinical teaching and learning which expands upon the concept of one-on-one preceptorship. All staff within the specific clinical practice area offer support

and learning opportunities to undergraduate nursing students. Within this environment, academics and clinicians work together in partnership to facilitate student learning. In this model while the student is 'preceptored' by a nurse for each shift, an additional resource person is also available to the student, staff and preceptor. This Clinical Liaison Nurse (CLN) is a designated DEU staff member who oversees the undergraduate nursing students during their clinical placement in the DEU. The CLN is a RN who is a permanent staff member of the DEU. The CLN promotes and facilitates student learning by providing consistent and accessible support for both clinicians and undergraduate nursing students for the duration of the clinical placement. They are rostered to ensure maximum contact and availability for students throughout the duration of the clinical placement. Specific supernumerary time is allocated to the CLN to provide an orientation programme for students, to facilitate learning opportunities and, following discussions with all staff, to complete CPIT student assessments, in conjunction with the Academic Liaison Nurse (ALN). The ALN is a RN who is a tenured member of the CPIT academic teaching staff. They are assigned to a specific DEU to provide clinical teaching and support learning for students. The ALN helps link theory to practice for all nursing students in the DEU as well as providing support to all DEU staff, in particular the CLN. This enhances the relationship between clinical and academic staff and facilitates ALN integration into the DEU team.

The Clinical Learning Environment, Supervision and Nurse Teacher Scale (CLES+T)

The CLES+T consists of 34 items and has five components. The components and their associated number of items are: (i) *Supervisory relationship* - 8 items; (ii) *Pedagogical atmosphere on the ward* - 9 items; (iii) *Role of the nurse teacher* - 9 items; (iv) *Leadership style of the ward manager* - 4 items; (v) *Premises of nursing on the ward* - 4 items (see Table 1). Respondents are asked to indicate the extent of their agreement to each of the 34 items on a 5-point Likert scale, with higher values representing higher agreement. The items are all positively phrased to illustrate an optimal state. The alternatives on the five-step Likert scale are: (1) fully disagree; (2) disagree to some extent; (3) neither agree nor disagree; (4) agree to some extent; and (5) fully agree. Using the CLES+T scale, a nursing student evaluates his or her recent clinical placement experience. The psychometric development of the CLES+T has not progressed to developing scores for each component other than by calculating the mean score of the items in the component from the raw data. Thus, scores of five represent optimal clinical learning environments and lower scores represent less than optimum clinical learning environments.

Study design

The process of establishing the validity and reliability of the CLES+T in the New Zealand context was divided into three phases. The first two phases, referred to in this report, were

undertaken by five nurse educators and researchers from the School of Nursing and Human Services at CPIT and involved an international research and education collaboration with Mikko Saarikoski from the Department of Health Care, Turku University of Applied Sciences, Finland.

The three phases for establishing the validity of the CLES+T in the New Zealand context were separate, but interrelated. Phase one sought to establish the face validity of the CLES+T in both hospital and community settings in New Zealand. Phase two investigated the construct validity and reliability of the CLES+T in hospital settings in New Zealand. Phase three investigated the validity and reliability of the CLES+T in community settings in New Zealand. The third phase will be reported to Ako Aotearoa separately. All three phases used questionnaires to elicit information from respondents. The majority of these were completed online, with only a small number of respondents using paper questionnaires.

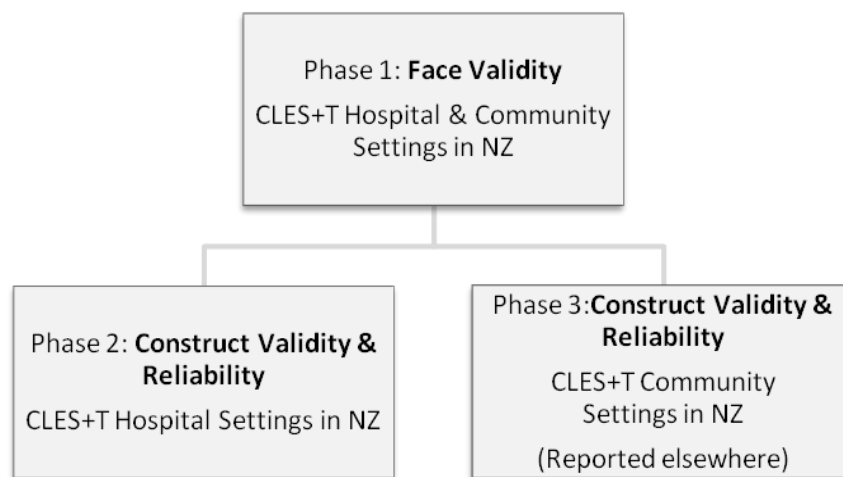


Figure 1 Project design

Ethical considerations

This study was approved by the CPIT Ethics Committee and the CPIT Nursing & Human Services Research Committee.

Ethical considerations were common to all three phases of the project and are discussed together in this section, with mention made of any issue specific to a particular phase of the study. Appendices 1 to 4 contain invitation to participate emails and information sheets. Further details of sampling and data collection methods are explained in detail in the methods sections of phases 1 and 2 of the study.

(1) Contact with potential participants

- Potential participants were emailed an invitation to participate (Appendices 1 & 2). Clicking the link on the invitation directed the participants to the online survey. The first page of the survey contained the information sheet (Appendices 3 & 4). The information sheet outlined participant's rights including the right not to participate and the right not to answer questions. Participants were advised that as the survey was submitted anonymously it was not possible to withdraw from the study once the survey was submitted. Submitting the completed survey implied participants had read and understood the information sheet, and gave their consent to participate in the study. Participants were assured of confidentiality.
- While specific steps were taken to strive for anonymity in responses, consideration was given to the possible circumstances in which participants may not be anonymous to members of the research team. This was potentially an issue in relation to ethnicity and other demographic details (for example; if there was only one student of a particular ethnicity in a class), and was also potentially an issue in situations where a student was the only student at a particular placement and a member of the research team was aware that the student was at that placement. Consequently, the section of the information sheets related to 'Will my taking part in this study be kept confidential?' informed students that no assurance could be given that their response would be anonymous to all members of the research team, and advised them of the circumstances in which this might occur. This enabled the students to make an informed decision about whether to participate in full knowledge that their response may not be anonymous to all members of the research team. All participants were assured of confidentiality.
- Brief information sessions (5 minutes) advising that the study was being undertaken were provided to each class of students by the research team. To promote the voluntary nature of the students' participation, these information sessions were given by research team members who were not associated with the specific class in a teaching capacity.
- While in most instances emailed invitations and online surveys were used, there were some occasions when paper copies were used. At these times the surveys were distributed to students by a research team member who was not involved with teaching that student group and the data was entered by the research assistant who was independent from the students.

(2) The following steps were taken to ensure digital security and the confidentiality of the online survey.

- There was no way to link respondents' answers to their email address as following submission of the questionnaire the link to the respondent's email address was automatically severed. However, the email address was marked as "has answered" to enable one automatic reminder to be sent to those who had not responded after one week.
- The survey was located on a secure encrypted web page managed by Digium Enterprises (a company specialising in providing secure online survey services).
- The data was sent to the secure server using 128-bit encryption.
- Access to the data was limited to the researchers and research assistant who had access via specific user names and passwords, and a statistician who assisted with the analysis. In addition, there was a small group of Digium Enterprises staff who had access to the server for maintenance purposes only.
- The results are reported in a summary form that does not allow individuals to be identified.
- The data will be stored on a secure server for five years after which the data will be destroyed.

(3) Incentives

- In order to increase participation in Phase 2 of the study, the opportunity to win a monetary incentive was offered to students who completed the survey. The information sheet (Appendix 4) informed participants that at the end of the survey they would find instructions for entering a prize draw for \$100. Contact information to enter the prize draw was submitted separately to the completed survey ensuring there was no connection between the two sets of information. Three weeks after each clinical course finished one name was chosen randomly from those who had entered the prize draw. This person was sent a cheque for \$100. Details of all prize draw participants were then destroyed.

Phase 1: Establishing the face validity of the CLES+T in hospital and community settings in New Zealand

Aim

The aim of Phase 1 of the study was to establish the face validity of the Clinical Learning Environment, Supervision and Nurse Teacher Scale (CLES+T) in both hospital and community settings in New Zealand.

Sample

An expert panel was used to determine the face validity of the 34 items on the CLES+T scale for assessing students' perceptions of the quality of the clinical learning experience in both hospital and community settings. The expert panel was purposively selected to include nursing students who had completed placements in hospital and community settings, and clinical supervisors, managers, and nurse teachers from both hospital and community settings. These groups were chosen because the components of the CLES+T (Supervisory relationship, Pedagogical atmosphere, Role of the nurse teacher, Leadership style of the manager, and Premises of nursing) asked students' perceptions of supervisors, managers, and nurse teachers. The aim was to have an expert panel that included people from each of these groups from both hospital and community settings and to have the panel dominated by students whose perceptions are the focus of the CLES+T. The larger group of students would also effectively act as a small group on which the items were pilot tested before conducting phase two.

Twenty-five third year nursing students from the Bachelor of Nursing Programme at CPIT were randomly selected and invited by email to participate in this phase of the study. Third year nursing students were sampled because they had experience of clinical placements in both hospital and community settings. Purposive sampling was used to recruit managers, clinical supervisors and nurse teachers for the expert panel. Sampling aimed to include respondents from a range of clinical placements in both hospital and community settings. The School of Nursing Clinical Leader selected six managers, (three from community placements and three from hospital placements) and six nursing lecturers employed by CPIT (three who teach in community placements and three who teach in hospital placements) all of whom were invited by email to participate. Each nursing lecturer was also asked to approach two registered nurses who supervise nursing students either in community or hospital placements for their permission to pass on their email address to the researcher. However, the emails of only six nurses who supervise students were passed on to the researchers, four of the supervisors were from hospital settings (two from general hospitals and two from mental health hospitals) and two were from community settings. The six supervisors were emailed an invitation to participate in the study.

Data collection

Changes to the CLES+T items

To facilitate international comparison minimal changes were made to the wording of the CLES+T items as published by Saarikoski et al. (2008). With the approval of the author of the CLES+T minor alterations were made to some items in the CLES+T to reflect the New Zealand context. Minor changes made to the wording are detailed in Table 1. Changes to the wording of items were made for three reasons. Firstly, corrections were made to some minor errors in English grammar. Secondly, as the third phase of the project involved evaluating the CLES+T in community settings references to the word 'ward' were removed and replaced with the more general term 'placement'. Thirdly, as the items were being randomly ordered without reference to the components for phase 2 of this study, it was necessary to clarify who was being referred to in some of the nurse teacher items.

In New Zealand practising in a culturally safe manner is a required competency for all registered nurses (NZNC, 2007), and is mandatory in nursing education programmes leading to registration as a nurse (NZNC, 2005). The research team consulted CPIT Te Ropu Kawa Whakaruruhau, which has a mandate in relation to cultural safety in nursing education at CPIT, about whether it was appropriate to include an item related to cultural safety. Te Ropu Kawa Whakaruruhau recommended inclusion of the following item, *I felt my own cultural perspective was acknowledged and valued in the placement*. Therefore the questionnaire used consisted of the 34 items from the CLES+T plus one item related to cultural safety.

Table 1 New Zealand adaptations to CLES+T items

Saarikoski et al. (2008) Version	New Zealand Version
1. My supervisor showed a positive attitude towards supervision.	No change
2. I felt that I received individual supervision.	No change
3. I continuously received feedback from my supervisor.	No change
4. Overall I am satisfied with the supervision I received.	No change
5. The supervision was based on a relationship of equality and promoted my learning.	No change
6. There was mutual interaction in the supervisory relationship.	No change
7. Mutual respect and approval prevailed in the supervisory relationship.	No change
8. The supervisory relationship was characterised by a sense of trust.	No change
9. The staff were easy to approach.	No change
10. I felt comfortable going to the ward at the start of my shift.	10. I felt comfortable going to the placement at the start of my shift.
11. During staff meetings (e.g. before shifts) I felt comfortable taking part in discussions.	11. During staff meetings (e.g. patient handover) I felt comfortable taking part in discussions.

12. There was a positive atmosphere on the ward .	12. There was a positive atmosphere at the placement .
13. The staff were generally interested in student supervision.	No change
14. The staff learned to know the students by their personal names.	14. The staff learnt to know the students by their personal names.
15. There were sufficient meaningful learning situations on the ward .	15. There were sufficient meaningful learning situations on the placement .
16. The learning situations were multidimensional in terms of content.	No change
17. The ward can be regarded as a good learning environment.	17. The placement can be regarded as a good learning environment.
18. In my opinion the nurse teacher was capable of integrating theoretical knowledge and the everyday practice of nursing.	No change
19. The nurse teacher was capable of operationalising the learning goals of this placement.	No change
20. The nurse teacher helped me to reduce the theory-practice gap.	No change
21. The nurse teacher was like a member of the nursing team.	No change
22. The nurse teacher was able to give her or his expertise to the clinical team.	No change
23. The nurse teacher and the clinical team worked together in supporting my learning.	No change
24. The common meetings between myself, mentor and nurse teacher were comfortable experience.	24. The common meetings between the supervisor , nurse teacher and myself were comfortable experiences.
25. In common meetings I felt that we are colleagues.	25. In common meetings between the supervisor, nurse teacher and myself I felt that we were colleagues.
26. Focus on the meetings was my learning needs.	26. My learning needs were the focus of the meetings between the supervisor, nurse teacher and myself.
27. The ward manager regarded the staff on her/his ward as a key resource.	27. The manager regarded the staff in the placement as a key resource.
28. The ward manager was a team member.	28. The manager was a team member.
29. Feedback from the ward manager could easily be considered a learning situation.	29. Feedback from the manager could easily be considered a learning situation.
30. The effort of individual employees was appreciated.	No change
31. The wards nursing philosophy was clearly defined.	31. The placement's nursing philosophy was clearly defined.
32. Patients received individualised nursing care.	32. People received individualised nursing care.
33. There were no problems in the information flow related to patients' care.	33. There were no problems in the information flow related to people's care.
34. Documentation of nursing (e.g. nursing plans, daily recordings of nursing procedures, etc.) was clear.	No change
	35. I felt my own cultural perspective was acknowledged and valued in the placement.

Questionnaire to establish the face validity of the CLES+T

For each of the 35 items in the New Zealand version of the CLES+T participants were asked to evaluate its relevance for evaluating student nurses' perceptions of clinical learning environments, supervision and teaching in hospital and community health settings. Respondents were asked to indicate the relevance of each statement to each setting on a 4-point Likert scale. The scale used was based on Lynn (1986): (1) not relevant; (2) item is in need of major revision; (3) relevant but needs minor alteration; (4) very relevant succinct. If participants selected (2) needs major revision or (3) minor alterations are required they were invited to make suggestions of what these alterations should be. For the purposes of the face validity testing in phase one, the items in the CLES+T scale were presented in the same order as the original instrument in the Saarikoski et al. study (2008).

Online data collection

The questionnaire was administered online using the Digium Enterprises Research System, an internet-based information collection service. It enables users to design an internet survey; provides a secure URL link to the anonymous survey; allows for scheduling of email invitations, email reminders and thank you messages; provides secure storage of data; and offers a variety of reporting options. Data can be exported into Excel for further analysis.

The email (Appendix 1) inviting participation in the study included a link to the information sheet (Appendix 3) and the anonymous online questionnaire (Appendix 5). Another email reminder was sent to potential respondents one week later. It became apparent following distribution of the invitations that there may have been an issue of email capture in spam filters. This problem may also have applied to the nursing managers, lecturers and clinical nurse supervisors. Therefore a follow-up email was sent asking the potential participants to check their spam folders. Respondents completed the questionnaire online and data was directly entered into the Digium system from their response, thus decreasing the potential for data entry errors.

Analysis

Simple descriptive statistics were used to report the level of consensus regarding the face validity of each item on the CLES+T and suggested alterations to items were recorded as written by respondents. There is no clear rule about what degree of consensus is required by an expert panel in order for an item or the total instrument to be considered valid. Given the degree of psychometric development the CLES+T scale had already been through, and the diversity within the expert panel, the research team decided that if 70% of the panel agreed that the items were relevant and required no alterations then those items would be accepted as valid.

Results

The targeted and actual composition of the expert panel who responded to the email requests to assess the face validity of the CLES+T items is given in Table 2. Eleven respondents formed the panel that evaluated the face validity of the items. The panel consisted of students, supervisors, managers, and nurse educators from both hospital and community settings.

Table 2 Target and actual composition of expert panel to assess face validity of CLES+T items

Stake holder groups in expert panel	Number approached	Actual composition of expert panel
Bachelor of Nursing students (3 rd year)	25	3*
Nurse Manager	6	3
Nurse Lecturers	6	3
Registered Nurses who supervise students	6	2
Total	44	11

* Five students responded however the open ended responses of two of the five students appear to indicate they completed the questionnaire as an evaluation of a clinical placement rather than evaluating the relevance of the items to student nurses' perceptions of the clinical learning environment. The data from those two student respondents was deleted from the data set prior to analysis.

One nurse lecturer and one supervisor from the community only responded to items in relation to community settings and one student only responded to items in relation to hospital settings. The remainder of the participants responded in relation to both settings. The percentage of valid respondents who rated each item 1 (not relevant); 2 (unable to assess relevance without revising statement); 3 (relevant but needs minor alteration); and 4 (relevant no alterations required) for hospital and community settings are presented in Table 3 and 4 respectively. Thirty two of the 34 items were rated as relevant to hospital settings with no alterations required by at least 70 % of respondents. Two items (item 6, *There was mutual interaction in the supervisory relationship* and item 21, *The Nurse Teacher was like a member of the nursing team*) were only rated as relevant to hospital settings with no alterations required by 66.7% of respondents. All items were rated as relevant to community settings with no alterations required by at least 70 % of respondents. Eleven of the 34 items were rated as relevant to community settings with no alterations required by 100% of respondents. Eight of the 34 items were rated as relevant to hospital settings with no alterations required by 100% of respondents. Useful suggestions regarding minor alterations to some items were made by some respondents.

Table 3 Face validity of CLES+T items for hospital settings

CLES+T Items	n =	% not relevant	% Unable to assess relevance	% Relevant needs minor alterations	% Relevant no alterations required
1. My supervisor showed a positive attitude towards supervision.	10	10	0	20	70
2. I felt that I received individual supervision.	10	0	0	20	90
3. I continuously received feedback from my supervisor.	10	10	0	10	80
4. Overall I am satisfied with the supervision I received.	10	10	0	10	80
5. The supervision was based on a relationship of equality and promoted my learning.	10	0	0	20	80
6. There was mutual interaction in the supervisory relationship.	9	11.1	0	22.2	66.7
7. Mutual respect and approval prevailed in the supervisory relationship.	9	0	0	22.2	77.8
8. The supervisory relationship was characterised by a sense of trust.	10	0	0	10	90
9. The staff were easy to approach.	9	0	0	11.1	88.9
10. I felt comfortable going to the placement at the start of my shift.	9	0	0	0	100
11. During staff meetings (e.g. patient handover) I felt comfortable taking part in discussions.	10	10	0	10	80
12. There was a positive atmosphere at the placement.	9	0	11.1	11.1	77.8
13. The staff were generally interested in student supervision.	10	10	0	10	80
14. The staff learnt to know the students by their personal names.	9	0	0	11.1	88.9
15. There were sufficient meaningful learning situations on the placement.	9	0	0	0	100
16. The learning situations were multidimensional in terms of content.	9	0	0	0	100
17. The placement can be regarded as a good learning environment.	9	0	0	0	100
18. In my opinion the Nurse Teacher was capable of integrating theoretical knowledge and the everyday practice of nursing.	9	0	0	11.1	88.9
19. The Nurse Teacher was capable of operationalising the learning goals of this placement.	9	0	11.1	11.1	77.8
20. The Nurse Teacher helped me to reduce the theory-practice gap.	9	0	0	11.1	88.9
21. The Nurse Teacher was like a member of the nursing team.	9	22.2	0	11.1	66.7
22. The Nurse Teacher was able to give her or his expertise to the clinical team.	9	11.1	0	11.1	77.8
23. The Nurse Teacher and the clinical team worked together in supporting my learning.	9	0	0	0	100
24. The common meetings between the supervisor, nurse teacher and myself were comfortable experiences.	9	0	0	22.2	77.8
25. In common meetings between the supervisor, nurse teacher and myself I felt that we were colleagues.	9	0	11.1	11.1	77.8
26. My learning needs were the focus of the meetings between the supervisor, nurse teacher and myself.	9	0	0	0	100
27. The manager regarded the staff in the placement as a key resource.	9	0	0	0	100
28. The manager was a team member.	9	0	0	11.1	88.9
29. Feedback from the manager could easily be considered a learning situation.	9	0	0	11.1	88.9
30. The effort of individual employees was appreciated.	9	0	0	11.1	88.9
31. The placement's nursing philosophy was clearly defined.	10	10	10	10	70
32. People received individualised nursing care.	9	0	0	11.1	88.9
33. There were no problems in the information flow related to people's care.	9	0	0	22.2	77.8
34. Documentation of nursing (e.g. nursing plans, daily recordings of nursing procedures, etc.) was clear.	9	0	0	0	100

Table 4 Face validity of CLES+T items for community settings

CLES+T Items	n =	% not relevant	% Unable to assess relevance	% Relevant needs minor alterations	% Relevant no alterations required
1. My supervisor showed a positive attitude towards supervision.	9	0	0	22.2	77.8
2. I felt that I received individual supervision.	9	0	0	11.1	88.9
3. I continuously received feedback from my supervisor.	9	0	0	11.1	88.9
4. Overall I am satisfied with the supervision I received.	9	0	0	0	100
5. The supervision was based on a relationship of equality and promoted my learning.	9	0	0	11.1	88.9
6. There was mutual interaction in the supervisory relationship.	9	0	0	22.2	77.8
7. Mutual respect and approval prevailed in the supervisory relationship.	9	0	0	22.2	77.8
8. The supervisory relationship was characterised by a sense of trust.	9	0	0	0	100
9. The staff were easy to approach.	9	11.1	0	11.1	77.8
10. I felt comfortable going to the placement at the start of my shift.	9	11.1	0	0	88.9
11. During staff meetings (e.g. patient handover) I felt comfortable taking part in discussions.	9	11.1	0	0	88.9
12. There was a positive atmosphere at the placement.	9	0	11.1	11.1	77.8
13. The staff were generally interested in student supervision.	9	11.1	0	11.1	77.8
14. The staff learnt to know the students by their personal names.	9	0	0	11.1	88.9
15. There were sufficient meaningful learning situations on the placement.	9	0	0	0	100
16. The learning situations were multidimensional in terms of content.	9	0	0	0	100
17. The placement can be regarded as a good learning environment.	9	0	0	0	100
18. In my opinion the Nurse Teacher was capable of integrating theoretical knowledge and the everyday practice of nursing.	9	0	0	22.2	77.8
19. The Nurse Teacher was capable of operationalising the learning goals of this placement.	9	0	0	22.2	77.8
20. The Nurse Teacher helped me to reduce the theory-practice gap.	9	0	0	11.1	88.9
21. The Nurse Teacher was like a member of the nursing team.	9	11.1	0	11.1	77.8
22. The Nurse Teacher was able to give her or his expertise to the clinical team.	9	11.1	0	11.1	77.8
23. The Nurse Teacher and the clinical team worked together in supporting my learning.	9	0	0	0	100
24. The common meetings between the supervisor, nurse teacher and myself were comfortable experiences.	9	0	0	11.1	88.9
25. In common meetings between the supervisor, nurse teacher and myself I felt that we were colleagues.	9	0	11.1	11.1	77.8
26. My learning needs were the focus of the meetings between the supervisor, nurse teacher and myself.	9	0	0	0	100
27. The manager regarded the staff in the placement as a key resource.	9	0	0	0	100
28. The manager was a team member.	9	0	0	0	100
29. Feedback from the manager could easily be considered a learning situation.	9	0	0	11.1	88.9
30. The effort of individual employees was appreciated.	9	0	0	0	100
31. The placement's nursing philosophy was clearly defined.	9	0	11.1	11.1	77.8
32. People received individualised nursing care.	9	0	0	11.1	88.9
33. There were no problems in the information flow related to people's care.	9	0	0	11.1	88.9
34. Documentation of nursing (e.g. nursing plans, daily recordings of nursing procedures, etc.) was clear.	9	0	0	0	100

Discussion

Although the response rate from those selected to participate in the expert panel was low the final panel comprised 11 people and included representatives from each of the key stakeholder groups targeted: Bachelor of Nursing students, nurse managers, nurse lecturers and clinical nurse supervisors from hospital and community settings. One strength of this expert panel is that it included the views of stakeholders from both hospital and community settings. Saarikoski (2002) used nine experienced nurse teachers as the expert panel in assessing the face validity of the CLES scale and did not seek the views of other stakeholders. Normally the number of experts is low because the analysis is not statistical, however at least five experts are recommended (Lynn, 1986) so the size of the expert panel in this study was adequate. The face validity process was also limited by the fact that the 'expert' panel did not include experts from across New Zealand. Furthermore, because the research was focussed on validating an existing tool the panel was not asked whether the range of items was adequate.

In the opinion of most of the panel (77.8%) all the items on the CLES+T have face validity for evaluating student nurses' perceptions of clinical learning environments, supervision and teaching in community settings in New Zealand. In the hospital setting only two items had just less than 70 % of respondents rating the item as relevant with no alterations required. Given the high level of agreement about relevance of all items in the instrument to the community context, and 32 of the 34 items in the hospital context, the potential contribution of the phase 2 construct validity and reliability results to the psychometric development of the instrument, and the study aim of making international comparisons, the research team decided to include all 34 items in the next phase of the study and made no further changes to items in the instrument (other than those listed in Table 1). The decision about making further alterations to any items based on the face validity feedback will be informed by the results of phase two which assesses the construct validity and internal reliability of the CLES+T.

Conclusion

The 34 items in the CLES+T have face validity for assessing students' perceptions of clinical learning environments, supervision, and teaching in hospital and community health settings in New Zealand. Further psychometric testing to assess the construct validity and internal reliability of the CLES+T in hospital and community settings in New Zealand is warranted.

Phase 2: Establishing the construct validity and reliability of the CLES+T in hospital settings in New Zealand

Sample

Recruitment

First, second, and third year students in the Bachelor of Nursing programme at the Christchurch Polytechnic Institute of Technology (CPIT) who were completing hospital placements between July 2008 and December 2009 were invited to participate in the study. Students were made aware of the research project in class before the commencement of each clinical course by members of the research team who were not directly involved in teaching them in the classroom or clinical workplace. They were invited to participate in the research by email (Appendix 2). The same invitation was also posted on each clinical course's intranet homepage (Moodle). The invitation contained a direct URL link to the online survey.

At the beginning of semester one 2009, following some concerns regarding a low response rate and students' lack of familiarity with Moodle, ethical approval was obtained to make paper copies of the questionnaire available to students completing clinical courses. The paper copies were individually produced with each questionnaire presenting the items in a different random order and were made available to students in class after completion of the clinical course. This was discontinued in semester two as the rate of response to the online survey increased.

Sample size

Sample size in exploratory factor analysis is determined by participant to item ratio. An early and still prevalent rule-of-thumb for determining a priori sample size is a participant to item ratio of 10:1 (Costello & Osborne, 2005). Saarikoski et al. (2008) have reported all items on the CLES+T having adequate factor loadings of between 0.511 and 0.835, with 21 of the 34 items having moderate to strong factor loadings greater than 0.7. Studies have revealed that when factor loadings are consistently high (such as those in the CLES+T) a ratio of less than 10:1 may be adequate (Costello & Osborne, 2005). While Costello and Osborne have shown that larger sample sizes with a 20:1 participant to item ratio tend to produce solutions that are more accurate they did not find statistically significant differences between sample sizes of 10:1 and 20:1. Given the previously reported strength of the factor loadings on items in the CLES+T a subject to item ratio of 10:1 is likely to produce replicable results. There are 34 items in the CLES+T plus an additional item related to cultural safety for the New Zealand context. Therefore, a minimum of 350 respondents from hospital

placements was required to explore and confirm the construct validity of the CLES+T in hospital settings in New Zealand.

Data collection

As with phase 1, data collection was undertaken using the Digium system. In phase 2 some data collection was also undertaken using paper-based questionnaires as outlined above.

Questionnaire to establish the construct validity and reliability of the CLES+T

The questionnaire, with the amendments made as part of phase 1 of this study (Table 1), was also used for phase 2. To address the potential weakness identified in Saarikoski et al.'s (2008) principal component analysis of presenting items to respondents already divided into components (and thus suggesting a particular structure), the 35 items were randomly ordered for each respondent in this study without reference to the original components. This avoided any chance of respondents having preconceptions that items in each component should be related. Respondents were asked to indicate their extent of agreement to each item on a 5-point Likert scale, with higher values representing higher agreement. The choices were: fully disagree, disagree to some extent, neither agree nor disagree, agree to some extent, and fully agree.

Data analysis

Statistical analysis was performed using SPSS 17.0. The few responses to demographic and placement questions that were clearly erroneous were classified as missing and omitted from the analysis. No responses to the CLES+T items were clearly erroneous. There was only a small amount of missing data in the responses which did not adversely affect analysis of any of the variables.

The construct validity of the CLES+T (NZ) in hospital settings in New Zealand was analysed using exploratory factor analysis. Principal Axis Factoring (PAF) was used to identify the factor models. The Principal Axis Factoring was conducted in two stages, firstly with the original 34 items, and secondly with the addition of the 35th item related to cultural safety. To determine the most appropriate number of factors to extract, a balance of the following criteria suggested by Costello and Osborne (2005), Fabrigar et al. (1999) and Pett, Lackey and Sullivan (2003) were considered:

- Eigenvalues from the reduced correlation matrix > 1
- Examination of the scree plot of the eigenvalues from the reduced correlation matrix for a distinct break in the slope of the plot
- Maximising the percent of variance explained by the extracted factors

- A clean factor structure with item loadings $> .3$ and no or few items cross-loading
- Each factor containing at least 3 items with loadings $> .3$
- Factor interpretability and relevance to previous theory and research on the CLES+T and quality workplace learning environments.

To clarify and simplify the data structure the data was rotated (Costello & Osborne, 2005). A direct oblimin rotation (with delta set at 0) was chosen as the method most likely to produce an accurate and reproducible solution (Costello & Osborne, 2005). The direct oblimin is an oblique rotation which allows factors to correlate. In an oblique rotation a factor pattern matrix and a factor structure matrix are generated. The factor pattern matrix represents the effect on the items of the factor on which the item loads while controlling for the effect of other factors. The loadings in the factor structure matrix represent the effect of all the factors on the item. Consequently the loadings in the factor pattern matrix and the factor structure matrix in oblique (direct oblimin) rotations are not equivalent. Therefore, both matrices were considered in interpreting the factors: the factor pattern matrix to determine the extent to which a simple structure was achieved (Pett, Lackey, & Sullivan, 2003) and the factor structure matrix to interpret the factors.

The internal reliability of the components of the CLES+T (NZ) was ascertained by calculating Cronbach's alpha coefficient and by examining correlations between components. Internal reliability refers to how well the items in the questionnaire that make up the factor fit together (Pett et al., 2003).

To establish whether the CLES+T had the same factor structure in hospital settings in New Zealand as the unpublished factor structure in Finland the 'eyeballing' method was used (Cattell, 1949 as cited in Teel & Verran, 1991). Eyeballing involves comparing the number of factors extracted, and the similarities and differences in the items loading on each factor.

Nursing students' perceptions of the quality of their clinical learning experiences in hospital clinical settings in New Zealand were analysed using descriptive statistics. The relationship between demographic and placement variables and students' perceptions of the CLES+T factors that determine the quality of their learning experiences in hospital clinical settings were determined using correlation coefficients and ANOVA.

Results

1014 invitations to participate in the research were distributed to students and 416 valid responses were received, giving a response rate of 41%. When n does not equal 416 it is due to missing data. In addition, a few items that were clearly erroneous were classified as missing and omitted from the analysis when necessary.

The demographic profile of respondents is presented in Table 5. The student nurse respondents ranged in age from 18-57 (median age 23). They were predominantly female (95.6 %), New Zealand Europeans (76.5 %). The respondents were somewhat evenly distributed across the three years of the BN programme. The population from which the sample was drawn included first, second, and third year students covering five intakes of students from July 2008 to December 2009. Although there will be slight variations in the demographic profile of each intake of students from which the sample was drawn the demographic profile of CPIT's 1st year BN student intake in February 2009 is included in Table 5. This provides an indication of the representativeness of the study sample. In addition, the students were somewhat evenly distributed across the three years of the BN.

Table 5 Demographic profile of respondents

	Respondents		CPIT BN 1 st year student intake Feb 2009 (n = 110)
Characteristic	n =		
Age in years	404		
mean (SD)		26.75 (8.65)	24.7
Median		23	
minimum – maximum		18-57	17-51
Gender (valid %)			
Female	395	95.6 %	94.5%
Male	18	4.4 %	5.5%
Ethnicity (valid %)			
New Zealand European	315	76.5 %	78%
Maori	23	5.6 %	5.5%
Pacifica	4	1.0 %	0%
Asian	20	4.9 %	4.5%
Other	50	12.1 %	12%
Year of study in the Bachelor of Nursing (valid %)			
1 st Year	142	34.3 %	
2 nd Year	166	40.1 %	
3 rd Year	106	25.6 %	

The characteristics of the clinical placements attended by respondents are presented in Table 6. The student nurses completed the CLES+T following placement in a range of hospital settings. The duration of placements ranged from 8 to 56 days with approximately 50% being less than 25 days. During the clinical placements the student nurses met with a nurse teacher on average 11.2 times and the number of visits with a nurse teacher ranged from 0 – 66. As can be seen in Table 6, there is considerable variation in the way first year students answered the question related to the number of meetings with the nurse teacher. This is because first year students have a clinical teacher present for their entire shift and the nurse teacher's time is shared between 6-8 students. Consequently, this has an effect on the mean number of visits for all students. Therefore, Table 6 also shows the number of meetings with the nurse for each year of the BN programme.

Table 6 Characteristics of respondents' clinical placements

Characteristic	<i>n</i> =	%	mean (SD)(min–max)
Placement type %			
Continuing Care	134	34.3 %	
Child & Family Health	15	3.8 %	
Medical	48	12.3 %	
Surgical	52	13.3 %	
Medical & Surgical	68	17.4 %	
Maternal Infant	2	0.5 %	
Mental Health	72	18.4 %	
Duration of placement in days			
All students	402*		23.86 (11.4) (8-56)
1 st year students	138		11.74 (2.1) (10-25)
2 nd year students	159		31.07 (8.8) (8- 50)
3 rd year students	103		28.84 (8.5) (15-56)
Meetings with nurse teacher			
All students	385*		11.2 (9.6) (0-66)
1 st year students	123		16.3 (12.25) (2-66)
2 nd year students	155		12.7 (6.29) (2-40)
3 rd year students	105		3.15 (2.2) (0-8)

*Two respondents entered the duration of their placement and the number of meetings with the nurse teacher but did not enter their year in the BN.

As described earlier, at CPIT the duration of the placement increases across the years of the BN programme. However, the mean duration of the placement for third year students is slightly lower than second year students. This is because third year respondents from the outgoing curriculum had two five week placements in comparison to the students from the incoming curriculum who had one 8-11 week placement. Nonetheless there is a significant relationship between the duration of the placement and the student's year in the BN programme, $r = .63$, $p < .01$. The level of input from the nurse teacher in the clinical placements decreases across the years of the BN programme, consequently there is a significant inverse relationship between the number of meetings with the nurse teacher and the student's year in the BN programme, $r = -.14$, $p < .01$.

Exploratory factor analysis of CLES+T

Factor analysis was performed to determine the nature and number of factors that could effectively represent quality learning environments and explain the correlations among the responses to the 34 items on the CLES+T scale. The analysis was conducted using principal axis factoring (PAF) followed by Direct Oblimin rotation.

Evaluation of the correlation matrix

Prior to conducting the factor analysis, the correlation matrix was checked for multicollinearity and singularity. No inter-item correlations exceeded $r = .8$, thus indicating no problems with multicollinearity. All items correlated $\geq .30$ with at least 25 other items in

the matrix (range 25 - 33). Twenty seven of the 34 items (90 %) had 31 or more shared correlations that exceeded $\geq .30$ and all correlations were statistically significant, confirming that exploratory factor analysis was appropriate. The correlation matrix is available from the first author on request. Bartlett's test of sphericity χ^2 (df = 561) = 9444.99, $p < .001$, indicated that correlations between items were sufficiently large. Consequently, no items were eliminated from the factor analysis.

A total of 416 Bachelor of Nursing students completed the CLES+T scale. This represents a 12:1 participant to item ratio (on the 34 CLES+T items) which exceeds the 10:1 ratio recommended for exploratory factor analysis (Costello & Osborne, 2005). The Kaiser-Meyer-Olkin (KMO) measure verified the sampling adequacy for analysis, KMO = 0.958 ('superb' according to Hutcheson & Sofroniou, 1999, as cited in Field, 2009).

Selecting the number of factors to extract

The analysis was conducted using Principal Axis Factoring (PAF) with Direct Oblimin rotation (an oblique rotation, allowing factors to correlate with one another). Three, four, and five factor models were compared balancing the criteria outlined in the analysis section. Principal axis factoring identifies three factors with reduced eigenvalues over Kaiser's (1960) criterion of one (See Table 7). This suggests a three factor model although this is better seen in the scree plot. Table 7 also shows the cumulative percent of variance explained by successive factors. Factor one accounts for over 45% of the variance, factor two accounts for just over 6% of the variance, and factor three accounts for almost 4% of the variance. The addition of a fourth and fifth factor contributes < 4% to the cumulative percent of variance. There are no definitive guidelines for determining what the maximum variance extracted should be particularly in PAF (Pett et al., 2003). However, it is clear that the addition of a fourth and fifth factor would each only contribute about 2% to the cumulative percent of variance extracted.

Table 7 Eigenvalues and percent of variance from the reduced correlation matrices

	Factor number				
	1	2	3	4	5
Reduced Eigenvalues	15.593	2.222	1.353	0.721	0.63
% if variance per factor	45.863	6.536	3.981	2.121	1.853

Scree plot

Fitting a straight line to the tail of the scree plot (Figure 2), although slightly ambiguous, suggests a three factor solution could represent the data adequately.

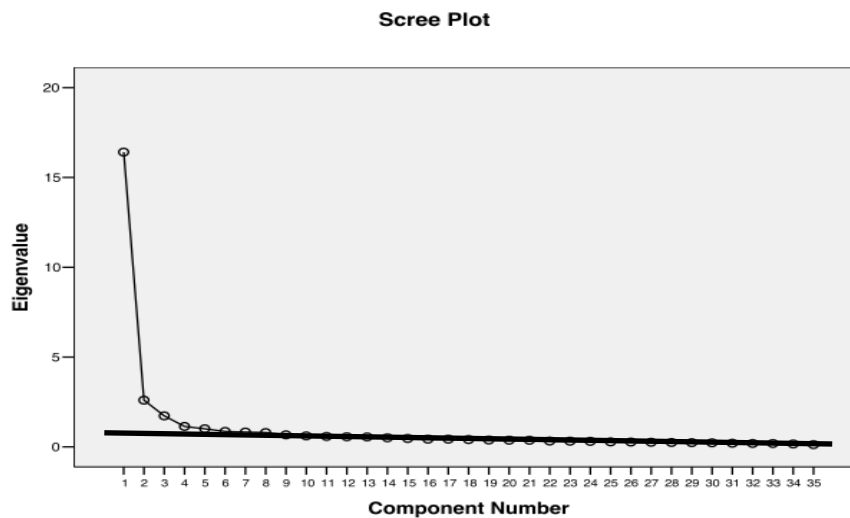


Figure 2 Scree plot

Comparing three, four, and five factor interpretability and usefulness

In general the factor analysis results are very clear. In the three, four, and five factor models items 1-8 that correspond to Saarikoski et al.'s (2008) *Supervisory relationship* component maintain their distinct structure, and items 18-26 that correspond to Saarikoski et al.'s (2008) *Nurse teacher* component also maintain their distinct structure.

In the three factor model, items 9-17, 27-30, and 31-34 are combined as one factor. These items are a combination of the *Pedagogical atmosphere*, *Leadership style of the manager*, and *Premises of nursing* components identified by Saarikoski et al. (2008). Combining these items in one factor limits the model's ability to explain the factors that contribute to quality learning environments.

In the four factor model items 9-17 and 30-34 remain combined as one factor. These items are a combination of the *Pedagogical atmosphere* and *Premises of nursing* components identified by Saarikoski et al. (2008) plus item 30. In the four factor model items 27-29 are a distinct factor with factor loadings $>.5$. These items are identical to the *Leadership style of the manager* component identified by Saarikoski et al. (2008) except they do not include item 30 (*The effort of individual employees was appreciated*). Item 30 is the only item in the leadership style of the manager component that does not specifically use the term manager in the text of the item. In this study the items were randomly ordered rather than presented under the component headings thus it is not surprising that item 30 has maximal loading elsewhere. The four factor model has improved ability to explain the factors that contribute to quality learning environments because it splits the nurse manager items from items 9-17 and 30-34. To see if there was any statistical evidence for a distinction between items 9-17 and 30-34 principal axis factoring was conducted on those items. There was no evidence for splitting these items into two factors. This suggests the two components are not distinct but rather one factor that requires definition.

There was no evidence for a fifth factor. In the five factor model only one item (item 15, *There were sufficient meaningful learning situations at the placement*) had maximal loadings on the fifth factor but this item also loaded strongly on the first factor. Item 16 (*The learning situations were multidimensional in terms of content*) loaded strongly on the fifth factor but its maximal loading was on the first factor. Balancing the statistical and theoretical criteria for deciding how many factors to extract the most coherent model turned out to be that of four factors. Having determined how many factors to extract the factors were rotated to improve their meaningfulness and assist with interpretation.

Internal reliability of the four factors in the CLES+T

Once the four factors were identified and rotated, reliability analysis was undertaken using Cronbach's alpha as a measure of internal consistency (Cronbach, 1951, 1984). The results indicate that the factors were internally consistent. As can be seen at the bottom of Table 8 three of the four factors had alpha values $> .9$ which according to George and Mallery (2003) is excellent. The alpha for the fourth factor was $> .8$ which is good, particularly given that it only has three items (George & Mallery, 2003). This demonstrates that the CLES+T is a reliable tool to measure student nurses' perceptions of their clinical learning environments, supervision, and nurse teachers in hospital settings in New Zealand. In all the factors, the alpha when any item is deleted from the factor is lower than the alpha for the factor when all the items are included. This finding suggests that all the items in each factor are contributing to the high reliability of that factor. It is also apparent that none of the items if deleted from a factor would seriously reduce the alpha value for that factor. This suggests that any one item could be deleted from any of the factors without seriously affecting the reliability of the factor. However, none of the inter-item correlations are so high ($> .8$) as to suggest that items duplicate each other. This means that the interpretation and naming of the factors can proceed with all the items included in the analysis.

Interpretation and naming of the factors

Table 8 shows the factor loadings from the rotated factor structure matrix (principal axis factoring with oblimin rotation), eigenvalues, % of variance, and Cronbach's alpha. The loadings in the factor structure matrix represent the effect of all the factors on the item.

In selecting names for the factors, consideration was given to the number of items with high loadings and the strength of the loadings of the items with the factors (Pett et al., 2003). The purity of the item loadings on a particular factor helps in naming the factor (Comrey & Lee, 1992). Inspection of the high loading items indicates that each factor has at least three items with loadings $> .71$ which Comrey and Lee (1992) regard as excellent. Factor four has only three items, all of which have loadings $> .71$. In the remaining factors that have a greater number of items: each factor has at least five items with loadings $> .71$ (excellent); eight or more items $> .63$ which Comrey and Lee regard as very good. All items load $> .55$ which Comrey and Lee rate as good. Thus, in factor one all item loadings rate as good, very good or excellent; in factors two and three all item loadings are very good or excellent; and in factor four all item loadings are excellent.

Table 8 Factor loadings from the rotated factor structure matrix for the CLES+T: Principal axis factoring with oblimin rotation (n = 416)

Items	Factor 1	Factor 2	Factor 3	Factor 4
12. There was a positive atmosphere at the placement.	.791	.464	-.601	.559
13. The staff were generally interested in student supervision.	.788	.393	-.553	.527
9. The staff were easy to approach.	.774	.369	-.498	.444
17. The placement can be regarded as a good learning environment.	.767	.481	-.644	.603
30. The effort of individual employees was appreciated.	.712	.393	-.549	.484
10. I felt comfortable going to the placement at the start of my shift.	.678	.439	-.629	.481
16. The learning situations were multidimensional in terms of content.	.673	.489	-.636	.584
32. People received individualised nursing care.	.670	.413	-.571	.485
15. There were sufficient meaningful learning situations on the placement.	.654	.439	-.628	.591
14. The staff learnt to know the students by their personal names.	.650	.327	-.404	.320
34. Documentation of nursing (e.g. nursing plans, daily recordings of nursing procedures, etc.) was clear.	.623	.373	-.545	.531
11. During staff meetings (e.g. patient handover) I felt comfortable taking part in discussions.	.615	.350	-.413	.439
31. The placement's nursing philosophy was clearly defined.	.607	.484	-.518	.540
33. There were no problems in the information flow related to people's care.	.601	.461	-.551	.504
23. The nurse teacher and the clinical team worked together in supporting my learning.	.450	.829	-.539	.427
20. The nurse teacher helped me to reduce the theory-practice gap.	.441	.808	-.520	.339
21. The nurse teacher was like a member of the nursing team.	.238	.795	-.431	.396
22. The nurse teacher was able to give her or his expertise to the clinical team.	.313	.788	-.450	.361
18. In my opinion the nurse teacher was capable of integrating theoretical knowledge and the everyday practice of nursing.	.433	.784	-.510	.319
19. The nurse teacher was capable of operationalising the learning goals of this placement.	.456	.772	-.552	.370
24. The common meetings between the supervisor, nurse teacher and myself were comfortable experiences.	.525	.712	-.564	.387
26. My learning needs were the focus of the meetings between the supervisor, nurse teacher and myself.	.627	.693	-.648	.462
25. In common meetings between the supervisor, nurse teacher and myself I felt that we were colleagues.	.458	.683	-.590	.387
6. There was mutual interaction in the supervisory relationship.	.595	.589	-.844	.486
8. The supervisory relationship was characterised by a sense of trust.	.563	.524	-.837	.451
4. Overall I am satisfied with the supervision I received.	.513	.499	-.818	.394
5. The supervision was based on a relationship of equality and promoted my learning.	.563	.492	-.814	.468
7. Mutual respect and approval prevailed in the supervisory relationship.	.567	.492	-.814	.464
1. My supervisor showed a positive attitude towards supervision.	.516	.497	-.804	.402
2. I felt that I received individual supervision.	.577	.474	-.747	.427
3. I continuously received feedback from my supervisor.	.342	.419	-.637	.324
28. The manager was a team member.	.442	.317	-.399	.782
27. The manager regarded the staff in the placement as a key resource.	.607	.453	-.524	.780
29. Feedback from the manager could easily be considered a learning situation.	.511	.477	-.490	.724
Rotated Eigenvalues	15.57	2.19	1.34	.71
Rotated % of variance	45.80	6.44	3.94	2.10
Cronbach's α	.93	.92	.93	.82

Note: loadings shaded and highlighted in bold indicate the factor on which the item was placed.

Table 9 Rotated factor pattern matrix for CLES+T: Principal axis factoring with oblimin rotation

Items	Factor 1	Factor 2	Factor 3	Factor 4
9. The staff were easy to approach.	.775	.014	.016	.004
13. The staff were generally interested in student supervision.	.702	-.013	-.049	.107
14. The staff learnt to know the students by their personal names.	.695	.064	.043	-.083
12. There was a positive atmosphere at the placement.	.636	.059	-.086	.125
30. The effort of individual employees was appreciated.	.581	.010	-.120	.086
11. During staff meetings (e.g. patient handover) I felt comfortable taking part in discussions.	.543	.070	.047	.123
17. The placement can be regarded as a good learning environment.	.521	.044	-.178	.193
32. People received individualised nursing care.	.474	.030	-.192	.101
10. I felt comfortable going to the placement at the start of my shift.	.438	.026	-.294	.065
34. Documentation of nursing (e.g. nursing plans, daily recordings of nursing procedures, etc.) was clear.	.380	-.022	-.195	.222
31. The placement's nursing philosophy was clearly defined.	.355	.183	-.056	.227
16. The learning situations were multidimensional in terms of content.	.352	.078	-.243	.221
33. There were no problems in the information flow related to people's care.	.339	.127	-.164	.169
15. There were sufficient meaningful learning situations on the placement.	.323	.002	-.282	.259
21. The nurse teacher was like a member of the nursing team.	-.246	.843	.014	.173
22. The nurse teacher was able to give her or his expertise to the clinical team.	-.092	.816	.024	.067
20. The nurse teacher helped me to reduce the theory-practice gap.	.111	.784	-.007	-.073
23. The nurse teacher and the clinical team worked together in supporting my learning.	.056	.781	.003	.053
18. In my opinion the nurse teacher was capable of integrating theoretical knowledge and the everyday practice of nursing.	.119	.757	-.018	-.091
19. The nurse teacher was capable of operationalising the learning goals of this placement.	.097	.690	-.084	-.033
24. The common meetings between the supervisor, nurse teacher and myself were comfortable experiences.	.218	.568	-.095	-.037
25. In common meetings between the supervisor, nurse teacher and myself I felt that we were colleagues	.064	.507	-.237	.003
26. My learning needs were the focus of the meetings between the supervisor, nurse teacher and myself.	<u>.301</u>	.440	-.184	5.478E-5
4. Overall I am satisfied with the supervision I received.	-.015	.009	-.845	-.045
1. My supervisor showed a positive attitude towards supervision.	-.001	.016	-.810	-.030
8. The supervisory relationship was characterised by a sense of trust.	.029	.015	-.807	.005
5. The supervision was based on a relationship of equality and promoted my learning.	.043	-.022	-.775	.046
7. Mutual respect and approval prevailed in the supervisory relationship.	.054	-.021	-.772	.038
6. There was mutual interaction in the supervisory relationship.	.057	.105	-.731	.024
3. I continuously received feedback from my supervisor.	-.140	.060	-.681	.021
2. I felt that I received individual supervision.	.158	.010	-.640	-.003
28. The manager was a team member.	.005	-.035	.000	.795
27. The manager regarded the staff in the placement as a key resource.	.208	.071	-.020	.619
29. Feedback from the manager could easily be considered a learning situation.	.079	.161	-.029	.593

Note: loadings shaded and highlighted in bold indicate the factor on which the item was placed. The lightly shaded and underlined value indicates cross loading onto two factors.

In addition to examining the factor loadings, consideration was given to previous conceptualisations of the CLES+T by Saarikoski et al. (2008) and to extant theories and conceptualisations of workplace learning. In the interpretation of the factors, this study describes a significant conceptual shift from the earlier work of the Finnish studies (see Figure 3).

Interpreting and naming factor one

<i>Saarikoski et al.(2008) Unreported 4 factors</i>	<i>Saarikoski et al. (2008) Principal component analysis</i>	Conceptual shift	<i>Hospital settings in New Zealand</i>
Factor 4	Supervisory relationship		Supervisory relationship (Factor 3)
Factor 2	Nurse teacher		Nurse teacher (Factor 2)
Factor 3 Item 27-30	Leadership style of the ward manager Item 27-30.		Leadership style of the manager Item 27-29 (Factor 4)
Factor 1 Items 9-17 & Items 31-34	Pedagogical Atmosphere Items: 9-17. Premises of nursing Items: 31-34.		Item 30 Connecting with and learning in communities of clinical practice (Factor 1)

Figure 3 Comparisons of Finnish factors and components with New Zealand factors

Factor one explained the greatest percent of variance and is therefore important in the hierarchy of factors to interpret correctly. The items in factor one correspond to the items Saarikoski et al. (2008) in their principal component analysis named the *Pedagogical atmosphere* component (items 9-17) plus the *Premises of nursing* component (items 31-34) and item 30³. Factor one does appear to be a broad and complex factor which is perhaps

³ Not surprisingly item 30 (*The effort of individual employees was appreciated*) loaded on this combined factor because in this study the items were randomly ordered and the item itself makes no reference to the ward manager

too broad and complex to interpret confidently based on this exploratory factor analysis alone. Then again, the four factor model Saarikoski et al. (2008) did not report, but found to be statistically the most coherent model, also combined items 9-17 and items 31-34 in one factor. Thus, two studies on independent samples from different countries have shown that the most robust factor model combines items 9-17 and items 31-34 in one factor. However, when a factor analysis is conducted exclusively on items 9-17 and 31-34 from the Finnish data set (Saarikoski et al., 2008) items 9-17 and 31-34 split into two distinct factors consistent with Saarikoski et al.'s components (2008). The fact that the Finnish data could be split in this way, and the New Zealand data could not, may be attributable to the Finnish items being presented to respondents already in the components, while in the New Zealand data the items were randomised. The findings from these two studies support the idea that items 9-17 previously named *Pedagogical atmosphere* and items 31-34 previously named *Premises of nursing* may not be distinct components but rather together represent one factor, and suggests the need to at least consider how the factor is interpreted and named.

The factor structure matrix (Table 8) which represents the effect of all the factors on each item shows that 10 items in factor one have loadings $>.63$ and five of them have loadings $>.71$ (very good and excellent respectively according to Comrey & Lee, 1992). Furthermore, the remaining four items have factor loadings $>.6$ which suggest all items make some important contribution to what the factor represents. Social interaction or participation and learning seem to be common themes in the ten high loading items. Nursing practice seems to be a common theme in the remaining four items. This suggests the factor might have something to do with learning through social participation in nursing practice.

The factor pattern matrix (Table 9), which represents the effect on the items of the factor on which the item loads while controlling for the effect of other factors, shows that four items in the factor have loadings $>.63$ and two of them have loadings $>.71$. Keeping in mind the unique contribution of the top four items in the pattern matrix to the meaning of the factor and looking for a common theme in those four items further emphasises the social aspects of the factor.

The social organisation of learning has been explored in Wenger's (1998) model of social learning in which learning is based on social participation in communities of practice. Wenger's ideas are being applied to workplace learning of students in a variety of health professions: nursing (Grealish & Ranse, 2009; Grealish & Trevitt, 2005), medicine (Egan & Jaye, 2009; Lyon, 2003, 2004), and physiotherapy (Skoien, Vagstol, & Raaheim, 2009). Based on Wenger's theory, Egan and Jaye (2009) develop the notion of communities of practice into communities of clinical practice in healthcare workplaces. It is from participating and learning in these communities that students develop their professional practice (Egan & Jaye, 2009). Egan and Jaye's framework provides a basis for interpreting and naming not only factor one, but also the remaining three factors. Interpretation of the latent variable

underlying factor one was informed by this framework, and named *Connecting with, and learning in, communities of clinical practice*.

Interpreting and naming factors two, three, and four

The items in factor two correspond exactly to the items Saarikoski et al. (2008) identified in the *Nurse teacher* component. The items in factor three correspond exactly to the items Saarikoski et al. (2008) identified in the *Supervisory relationship* component. The items in factor four correspond to the items Saarikoski et al. (2008) identified in the *Leadership style of the ward manager* component except that item 30 loads on factor one. The high factor loadings in the pattern and structure matrices, the purity of the factor loadings and the similarity with the loadings in Saarikoski et al. (2008) support the naming of three of the factors in the same way as Saarikoski et al. (2008). Thus, there is a *Nurse teacher* factor comprising items 18-26, a *Supervisory relationship* factor comprising items 1-8, and a *Leadership style of the nurse manager* factor comprising items 27-29. The supervisory relationship, the nurse teacher role, and the leadership style of the manager all contribute to the social organisation of clinical learning. There is no compelling evidence suggesting that the names of factors two, three and four should be changed.

Correlations between the factors

Table 10 shows the strength of the correlations between the factors. These correlations suggest strong relationships between the community of clinical practice, the nurse teacher, the supervisor, and the manager. The negative correlations are an artefact of the oblique rotation, they do not reflect an inverse or negative relationship; it is the size of the r value rather than the negative sign that is meaningful.

Table 10. Factor correlation matrix from principal axis factoring with direct oblimin rotation

Factor	Connecting with, and learning in, communities of clinical practice	Nurse teacher	Supervisory relationship	Leadership style of the manager
Connecting with, and learning in, communities of clinical practice	1.000			
Nurse teacher	.469**	1.000		
Supervisory relationship	-.650**	-.611**	1.000	
Leadership style of the manager	.570**	.440**	-.525**	1.000

**Significant correlation ($p < 0.01$)

Additional New Zealand item

Item 35 (*I felt my own cultural perspective was acknowledged and valued in the placement*) was added to the CLES+T because cultural safety is important in nursing education in New Zealand. For the purpose of testing the validity and reliability of the CLES+T the analysis was done excluding item 35. When item 35 is analysed with the other items it has a factor

loading of .307 on factor one which is just above the threshold of .3 for inclusion. However it had the lowest factor loading of all the items in this factor, and did not appear to add anything to the interpretation of the factor. Therefore, including or excluding this item is a moot point.

This item was not included in the interpretation of factors above as the intention of the study was to use the CLES+T instrument as initially developed to allow for the possibility of international comparisons to support the psychometric testing. However, the additional cultural question is theoretically consistent with the concepts found within the literature about the social organisation of learning (Wenger, 1998) and communities of clinical practice in healthcare workplaces (Egan & Jaye, 2009) that underpin the conceptual shift made in the interpretation and naming of the factors above.

Student's perceptions of their clinical learning environments

Data analysis

Descriptive statistics were calculated on each item. The effects of demographic and placement factors on students' perceptions of their clinical learning environment were determined using ANOVA and *t*-tests. A small number of responses to demographic and placement variables that were clearly erroneous were classified as missing and omitted from the analysis when necessary.

Results

Overall, students' perceptions of their clinical learning environments as measured by the CLES+T were overwhelmingly positive. Although all items attracted responses across the spectrum (from 1 fully disagree to 5 fully agree) the most frequent response to every question was the highest score (5). Consequently, the mean for each item is skewed up against the highest value of 5. Item 18, *"In my opinion the Nurse Teacher was capable of integrating theoretical knowledge and the everyday practice of nursing"* had the highest mean score (4.64). Item 25, *"In common meetings between the supervisor, nurse teacher and myself I felt that we were colleagues"* had the lowest mean score (3.92). The CLES+T items are presented in Table 11 in descending order of the item mean.

Table 11 CLES+T items sorted in descending order by mean

Item	<i>n</i> =	Median	Mean	Std Dev
18. In my opinion the nurse teacher was capable of integrating theoretical knowledge and the everyday practice of nursing.	414	5	4.64	0.829
17. The placement can be regarded as a good learning environment.	414	5	4.57	0.877
1. My supervisor showed a positive attitude towards supervision.	415	5	4.55	0.866
4. Overall I am satisfied with the supervision I received.	415	5	4.47	0.97
15. There were sufficient meaningful learning situations on the placement.	415	5	4.46	0.905
19. The nurse teacher was capable of operationalising the learning goals of this placement.	413	5	4.46	0.92
30. The effort of individual employees was appreciated.	411	5	4.46	0.853
32. People received individualised nursing care.	415	5	4.46	0.9
6. There was mutual interaction in the supervisory relationship.	413	5	4.44	0.889
2. I felt that I received individual supervision.	416	5	4.42	0.925
7. Mutual respect and approval prevailed in the supervisory relationship.	414	5	4.42	0.963
10. I felt comfortable going to the placement at the start of my shift.	415	5	4.42	0.979
34. Documentation of nursing (e.g. nursing plans, daily recordings of nursing procedures, etc.) was clear.	416	5	4.42	0.872
8. The supervisory relationship was characterised by a sense of trust.	414	5	4.4	0.935
20. The nurse teacher helped me to reduce the theory-practice gap.	410	5	4.4	0.972
27. The manager regarded the staff in the placement as a key resource.	412	5	4.38	0.953
16. The learning situations were multidimensional in terms of content.	412	5	4.37	0.877
5. The supervision was based on a relationship of equality and promoted my learning.	416	5	4.35	0.978
12. There was a positive atmosphere at the placement.	416	5	4.35	0.973
24. The common meetings between the supervisor, nurse teacher and myself were comfortable experiences.	414	5	4.29	1.042
22. The nurse teacher was able to give her or his expertise to the clinical team.	412	5	4.28	1.134
23. The nurse teacher and the clinical team worked together in supporting my learning.	412	5	4.28	1.066
9. The staff were easy to approach.	415	5	4.27	0.991
26. My learning needs were the focus of the meetings between the supervisor, nurse teacher and myself.	414	5	4.25	1.043
3. I continuously received feedback from my supervisor.	415	5	4.23	1.045
35. I felt my own cultural perspective was acknowledged and valued in the placement.	414	5	4.22	1.067
33. There were no problems in the information flow related to people's care.	414	4	4.17	1.005
29. Feedback from the manager could easily be considered a learning situation.	414	4	4.16	1.035
14. The staff learnt to know the students by their personal names.	413	5	4.14	1.24
28. The manager was a team member.	413	5	4.13	1.114
11. During staff meetings (e.g. patient handover) I felt comfortable taking part in discussions.	413	5	4.1	1.093
13. The staff were generally interested in student supervision.	413	4	4.07	1.061
31. The placement's nursing philosophy was clearly defined.	413	4	4.01	1.079
21. The nurse teacher was like a member of the nursing team.	410	4.5	3.97	1.314
25. In common meetings between the supervisor, nurse teacher and myself I felt that we were colleagues.	415	4	3.92	1.132

The students evaluated connecting with, and learning in, communities of clinical practice, their nurse teacher, supervisory relationship, and the leadership style of the manager very highly. There was little variation in the means of the factors which ranged from a low of 4.22 to a high of 4.42 (on a 1-5 scale). The means, standard deviations, minimums and maximums of the four factors are shown in Table 12.

Table 12 Means, standard deviation

Factor	Mean	Standard deviation	Minimum	Maximum
Connecting with, and learning in, communities of clinical practice	4.31	0.709	4.02	4.59
Nurse teacher	4.28	0.825	3.92	4.64
Supervisory relationship	4.42	0.766	4.23	4.56
Leadership style of the manger	4.22	0.889	4.13	4.38

International Comparisons

Having used the same items and essentially the same design (other than randomly ordering the variables) on a population of student nurses outside Europe it is possible to make some limited comparison between New Zealand and Finnish nursing students' perceptions of their *Supervisory relationships* and their *Nurse teachers*.

Supervisory relationship

The New Zealand nursing students from CPIT rated the supervisory relationship higher ($M = 4.42$, $SE = 0.04$) than Finnish nursing students ($M = 3.17$, $SE = 0.04$) reported in Saarikoski et al. (2007). This difference was significant $t = 23.44$, $p < .001$, which shows that New Zealand nursing students from CPIT rate their relationship with their supervisor significantly higher than do Finnish students.

Nurse teacher

The New Zealand nursing students rated the nurse teacher higher ($M = 4.28$, $SE = 0.04$) than Finnish nursing students ($M = 3.74$, $SE = 0.05$) reported in Saarikoski et al. (2009). This difference was significant $t = 8.55$, $p < .001$. This result shows that New Zealand nursing students from CPIT rate their nurse teacher significantly higher than do students from Finland.

Relationship between students' age and their perceptions of the clinical learning environment

There were no significant correlations between the students' age and the four factors. This suggests the age of the student does not play a role in their perceptions of the clinical learning environment.

Relationship between duration of placement and students' perceptions of the clinical learning environment

Table 13 shows that there were significant correlations between the duration of placement and students' perceptions of *Connecting with, and learning in, communities of clinical practice*, the *Nurse teacher*, and the *Supervisory relationship*.

Table 13 Relationship between duration of placement and students' perceptions of the clinical learning environment

	Connecting with, and learning in, communities of clinical practice	Nurse teacher	Supervisory relationship	Leadership style of the manager
Duration of placement Pearson coefficient <i>r</i>	.245**	-.168**	.141**	.051
Significance	.000	.001	.007	.331

** . Correlation is significant at the .001 level (2-tailed)

Relationship between the number of meetings with the nurse teacher and students' perceptions of the clinical learning environment

Table 14 shows that there were significant correlations between the number of meetings with the nurse teacher and students' perceptions of *Connecting with, and learning in, communities of clinical practice*, and the *Nurse teacher*.

Table 14 Relationship between the number of meetings with the nurse teacher and students' perceptions of the clinical learning environment

	Connecting with, and learning in, communities of clinical practice	Nurse teacher	Supervisory relationship	Leadership style of the manager
Number of meetings with nurse teacher Pearson coefficient <i>r</i>	-.175**	.165**	.025	.008
Significance	.001	.002	.644	.883

** . Correlation is significant at the .001 level (2-tailed)

Effect of year in the BN on students' perceptions of the clinical learning environment

To compare first, second, and third year students' perceptions of the clinical learning environment an ANOVA was performed. There was a significant effect of year in the BN programme on students' perceptions of the *Connecting with, and learning in, communities of clinical practice* $F(2, 394) = 7.646, p = .001$. There was a significant effect of year in the BN programme on students' perceptions of the *Nurse teacher*, $F(2, 400) = 3.048, p = .049$. There was a significant effect of year in the BN programme on students' perceptions of the

Supervisory relationship, $F(2, 404) = 4.990$, $p = .007$. There was a no significant effect of year in the BN programme on students' perceptions of the *leadership style of the manager*, $F(2, 405) = 1.925$, $p = .147$.

The ANOVA reveals significant difference between the groups on three of the four factors. Thus, a comparison of means was performed pairwise for independent samples across the three years of the BN programme. Table 15 shows the statistically significant comparisons; all other comparisons were not statistically significant. Third year students perceived *Connecting with, and learning in, communities of clinical practice* as significantly better than both second and first year students. Second year students perceived *Connecting with, and learning in, communities of clinical practice* as significantly better than first year students. Thus, there is an increasingly positive perception of *Connecting with, and learning in, communities of clinical practice* as students' progress through the three years of the programme. First year students perceived their nurse teacher significantly better than both second and third year students. On average third year students perceived significantly better supervisory relationships than second year students.

Table 15 Comparison of first, second, and third year students' perceptions of the clinical learning environment

Factor	Year in the BN programme						comparison	t-test		
	1 st year <i>n</i> = 139		2 nd year <i>n</i> = 165		3 rd year <i>n</i> =105			<i>t</i>	<i>df</i>	<i>p</i>
	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>				
Connecting with, and learning in, communities of clinical practice	4.15	0.06	4.33	.06	4.51	0.06	1 to 2* 2 to 3** 1 to 3**	-2.079 -2.046 -4.307	295 259 234	.039 .042 .000
Nurse teacher	4.42	0.06	4.20	.07	4.22	0.08	1 to 2* 1 to 3*	2.347 2.007	300 237	.020 .043
Supervisory relationship	4.45	0.06	4.28	0.07	4.58	0.06	2 to 3**	-3.215	266	.001

Effect of placement type on students' perceptions of the clinical learning environment

Seven placement types were divided into three groups based on similarity of placement type. Group one consisted of continuing care placements; group two combined medical, surgical, medical & surgical combined, child and family, and maternal infant, all of which occurred in the context of general hospital settings; group three consisted of mental health hospital placements. To compare the three different placement types an ANOVA was performed for the three groups. The ANOVA revealed a significant effect of placement type on students' perceptions of the pedagogical atmosphere, $F(2, 371) = 8.437$, $p = .000$.

Thus, a comparison of means was performed pairwise for independent samples across the three placement types. Table 16 shows the statistically significant comparisons; all other

comparisons were not statistically significant. Students perceived *Connecting with, and learning in, communities of clinical practice* to be significantly better in both general hospital and mental health placements than in continuing care placements. Students in continuing care placements perceived their *Nurse teacher* to be significantly better than students in general hospital placements. Students in mental health placements perceived the *Leadership style of the manager* to be significantly better than the leadership style of the manager in continuing care placement

Table 16 Comparison of placement type on students' perceptions of the clinical learning environment

Factor	Placement type						Comparison	t-test		
	Group 1 Continuing care <i>n</i> = 131		Group 2 General hospital <i>n</i> =185		Group 3 Mental Health <i>n</i> =72					
	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>		<i>t</i>	<i>df</i>	<i>p</i>
Connecting with, and learning in, communities of clinical practice	4.11	0.06	4.39	0.05	4.46	0.07	1 to 2** 1 to 3**	-3.458 -3.433	303 195	.001 .001
Nurse teacher	4.41	0.06	4.21	0.06	4.26	0.10	1 to 2*	2.255	308	.025
Leadership style of the manager	4.08	0.08	4.25	0.07	4.33	0.10	1 to 3*	-2.025	198	.044

Effect of practice education models on students' perception of the clinical learning environment

Preceptorship has long been regarded as the gold standard model of supporting students in clinical learning environments (Budgen & Gamroth, 2008). However, in recent times there has been growing interest in the Dedicated Education Unit (DEU) model (Callaghan, Watts, McCullough, Moreau, Little, Gamroth et al., 2009; Edgecombe, Wotton, Gonda, & Mason, 1999; Jamieson, Hale, Sims, Casey, Whittle & Kilkenny, 2008). In this study, it was hypothesised that students' perceptions of the factors of the CLES+T would be the same in both the DEU and Preceptorship model. To compare DEU placements with placements using the Preceptorship model an ANOVA was performed for the two groups. The ANOVA revealed no significant effect by model on students' perceptions of the factors of the CLES+T, allowing acceptance of the hypothesis that students' perceptions of their learning environment is the same in both placements that use either the DEU or Preceptorship model. To confirm the findings of the ANOVA a comparison of means was conducted. Table 17 shows that none of the comparisons were statistically significant.

Table 17 Comparison of practice education models

Factor	Practice Education Model				t-test		
	Dedicated Education Unit <i>n</i> = 62		Preceptorship Model <i>n</i> = 336				
	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>	<i>t</i>	<i>df</i>	<i>p</i>
Connecting with, and learning in, communities of clinical practice	4.29	0.10	4.32	0.04	-0.276	385	.783
Nurse teacher	4.30	0.11	4.29	0.04	0.075	391	.940
Supervisory relationship	4.27	0.11	4.45	0.04	-1.716	395	.087
Leadership style of the manager	4.24	0.05	4.21	0.04	0.233	396	.816

Discussion and recommendations

Validity of the CLES+T

The results of Principal Axis Factoring (factor analysis) cannot be extrapolated beyond the sample from which the data were collected unless the same factor structure is obtained using a different sample (Field, 2009). Saarikoski et al.'s (2008) exploratory factor analysis of the CLES+T provided statistical support for a

four factor structure. Our exploratory factor analysis of the CLES+T using principal axis factoring with an oblimin rotation also found the strongest statistical support for a four factor model. Both four factor models structured the items into the same factors except for one item. The fact that the same factor structure was produced from two independent samples from nursing students in different parts of world, and that in the New Zealand sample the items were presented in random order, is a conservative test that confirms the validity of the four factor model presented in this report and increases confidence in the ability to generalise the findings.

The work of Wenger (1998) and Egan and Jaye (2009) provide a new framework that has value in explaining the latent variables that underpin the CLES+T scale. The factor structure is similar to the principal components previously published by Saarikoski et al. (2008). However, it has some significant differences. Principally, in the factor structure reported here the supervisory relationship is of much less importance than previously thought, and connecting with, and learning in, communities of clinical practice is identified as a new and important variable. Undoubtedly the supervisory relationship plays an important part in connecting with the community of clinical practice as can be seen in the high correlation between these two factors presented in Table 10. However, the breadth of the items that load with this factor suggests there is much more to connecting with and learning in the community of clinical practice than just the supervisory relationship. The high correlations between the factors suggests that the social organisation of student nurses' workplace learning within communities of clinical practice warrants further empirical research and theoretical development.

Even though *Connecting with, and learning in, communities of clinical practice* is a complex factor it is also a prominent factor in students' experience of their clinical learning environments. However, it cannot be assumed that all the key components of the factor have been represented by the items in the factor.

The CLES+T has proven sensitive enough to detect differences in students' perceptions of the factors between students in different stages of the programme, and in different placement types.

Reliability of the CLES+T

Reliability refers to how consistently the questionnaire measures the constructs it claims to measure. The reliability of questionnaires is most commonly measured using Cronbach's α . A value above .7 is generally accepted as an acceptable value for Cronbach's α . All four factors were found to have Cronbach's $\alpha > .8$. Furthermore, the reliability of the factors of the CLES+T has been consistently high across a variety of studies. Given the high internal reliability of the factors and the fact that deleting any one item has little impact on the reliability it is possible that some highly correlated items could be removed without affecting the overall validity and reliability of the tool.

Students experiences

Our findings show that there is a relationship between the duration of clinical placements and students' perceptions of *Connecting with, and learning in, communities of clinical practice*. There has been some discussion in New Zealand about the need for longer clinical placements as a way to enhance student learning in clinical environments. There is a need for further research to determine the optimal duration of clinical placements.

Historically much emphasis has been placed on the supervisory relationship underpinned by the preceptorship model of clinical teaching and learning (Billay & Myrick, 2008) which advocates that nurses learn best when they work one-on-one with a nurse preceptor. More recently partnership models of clinical teaching and learning, such as the Dedicated Education Unit (DEU) (Edgecombe, Cotton, Gonda, & Mason, 1999; Grealish & Kaye, 2004), have been established whereby the student learns by working with several nursing staff. The results indicate that students' perception of their learning environment is not significantly different in placements that use either the DEU or preceptorship model. This confirms that students are neither disadvantaged nor advantaged by one model or the other.

Study limitations

The response rate for this survey was low (41%) which limits the ability to generalise the findings to the population sampled. However, the sample was representative of the wider population which increases the likelihood that the results could be generalised to the wider population. Furthermore, the findings are almost identical to those in the Finnish sample which further support the ability to generalise the findings beyond the sample.

Recommendations

- Schools of Nursing in Tertiary teaching institutions in New Zealand could use the CLES+T and the four factor structure reported here as a tool to evaluate the quality of clinical learning environments in hospital settings.
- Given the strength of the internal reliability of the CLES+T it may be possible to further refine the number of items in each factor.
- *Connecting with, and learning in, a community of clinical practice* appears to be an important factor in students' perceptions of hospital clinical placements that warrants further theoretical and empirical research.
- Future research should include a search for other items that may help to give a more complete representation of *Connecting with, and learning in, communities of clinical practice*.
- Research into the relationship between the duration of clinical placements, the amount of nurse teacher input and students' perceptions of their clinical learning environments is warranted.

Conclusion

Construct validity and reliability data from this study support the use of the CLES+T to evaluate students' clinical learning environments in hospital settings in New Zealand. The CLES+T appears to have sufficient validity and reliability to be used by researchers, educators, and clinicians who wish to monitor the quality of clinical learning environments.

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Dissemination

Presentations

Watson, P., Seaton, P., Sims, D., Whittle, R., Jamieson, I., & Mountier, J. (2009). Evaluating the quality of workplace learning for student nurses in hospital settings. Presentation to Ako Aotearoa Regional Research Colloquium 4 November [Presenter: P. Watson]

Watson, P., Seaton, P., Sims, D., Whittle, R., Jamieson, I. (2009). Evaluating the quality of workplace learning for student nurses in hospital settings. Paper presented at the 14th Australasian Nurse Educators Conference. Christchurch, NZ, 30 September – 2 October. [Presenter: R. Whittle]

Watson, P., Seaton, P., Sims, D., Whittle, R., Jamieson, I. (2009). Evaluating the quality of workplace learning for student nurses in hospital settings. Christchurch Polytechnic Institute of Technology Research Week. Christchurch, NZ, 9 September. [Presenter: P. Watson]

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Appendices

Appendix 1

Subject: Important research project related to student nurses' clinical practice experience

Hello

We would like to ask for your help in filling out an online survey for an important research project being conducted by the School of Nursing and Human Services at Christchurch Polytechnic Institute of Technology. The research is to determine the validity in the New Zealand context of statements in a questionnaire designed in Finland to evaluate the quality of student nurses' clinical learning experiences.

You can find more information about what completing the survey involves by clicking on the link below.

[Insert URL Link to information sheet and questionnaire here](#)

Thank you for your time and consideration. It's only with the generous help of people like you that our research can be successful.

Yours sincerely

Dr Paul Watson
Primary Researcher
Senior Lecturer
School of Nursing and Human Services
Christchurch Polytechnic Institute of Technology
Phone: 940-8707
Email watsonp@cpit.ac.nz

Appendix 2

Subject: Clinical placement evaluation and an important research project

Hello

We would like to give you an opportunity to evaluate the quality of your clinical learning experience and ask for your help in filling out an online survey for an important research project being conducted by the School of Nursing at Christchurch Polytechnic Institute of Technology. The research is to determine the validity and reliability of the Clinical Learning Environment Supervision and Nurse Teacher (CLES+T) Scale for hospital settings in New Zealand.

Why do this survey?

You could win \$ 100. Once you have completed the survey you will see a message telling you how to enter the prize draw. There is one draw for each class.

You can find more information about what completing the survey involves by clicking on the link below.

[Insert URL Link to information sheet and questionnaire here](#)

Thank you for your time and consideration. It is only with the generous help of people like you that we can monitor student's perceptions of the quality of their clinical learning experience, give quality feedback to clinical placements, and our research can be successful.

Yours sincerely

Dr Paul Watson
Primary Researcher
Senior Lecturer
School of Nursing and Human Services
Christchurch Polytechnic Institute of Technology
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Appendix 3

Establishing the face validity of the Clinical Learning Environment, Supervision and Teacher Scale for hospital and community settings in New Zealand

Information Sheet

You are invited to take part in a survey to assess whether the questions in the Clinical Learning Environment, Supervision and Teacher Scale (CLES+T) are relevant for the New Zealand context. The CLES+T scale was developed in Finland to assess nursing students' perceptions of clinical learning environments, supervision and teaching in hospital settings. The CLES+T has the potential to be a valid indicator of the quality of clinical learning experiences for student nurses in New Zealand. However, it is important to first establish the relevance of questions in the CLES+T to the New Zealand context in both hospital and community settings.

A team of researchers at the School of Nursing and Human Services CPIT is conducting this study with a co-researcher Dr Mikko Saarikoski from Turku University in Finland. The researchers in the team at CPIT are: Dr Paul Watson, Dr Philippa Seaton, Rose Whittle, Isabel Jamieson and Deb Sims. The Southern Regional Hub of Ako Aotearoa, the National Centre for Tertiary Teaching Excellence, is funding our research.

What are the aims of the study?

The study aims to assess the relevance of each of the 34 questions in the CLES+T scale for evaluating student nurses' perceptions of their clinical learning environments, supervision and teaching in both hospital and community settings in New Zealand. This study is the first phase in a three phase project to establish the validity and reliability of the CLES+T in the New Zealand context.

How were participants selected for this study and who selected them?

In this first phase we are seeking the opinion of 25 nursing students, 6 nurse lecturers, 12 nurses who supervise student nurses and 6 managers of clinical placements. The third year nursing students from the Bachelor of Nursing Programme at CPIT have been randomly selected for this study. The School of Nursing and Human Services Clinical Leader has selected 6 managers, 3 from community placements and 3 from hospital placements for this study. The Clinical Leader has also selected 6 Nursing lecturers employed by the Polytechnic, 3 who teach in community placements and 3 who teach in hospital placements. Each nursing lecturer was asked to select 2 nurses who supervise nursing students either in community or hospital placements for this study. The managers, nursing lecturers, and nurses who supervise students were selected to cover as wide a range of clinical placements as possible.

What will the survey involve?

You are invited to complete an anonymous survey online, which will take approximately 20 minutes to complete. There are 34 questions in the CLES+T scale, for each question you will be asked to indicate the relevance of each statement for hospital **and or** community settings. There will also be an opportunity to suggest alterations to questions if you think some revision is necessary for the New Zealand context. Finally you will be asked to identify whether you are a nursing student, manager, nurse lecturer, or nurse who supervises students.

What are the benefits of the survey?

This survey will help to establish whether the CLES+T is a valid tool for assessing nursing students' perceptions of clinical learning environments, supervision, and teaching in hospital and community placements in New Zealand. The clinical environments in which students learn make an important contribution to the education of nurses. If the survey questions prove to be valid they may be used to monitor and help improve the quality of clinical teaching and learning environments for student nurses.

What are the inconveniences of this study?

The survey will take about 20 minutes of your time to complete. Thank you for your time and consideration. It is only with the generous help of people like you that our research can be successful.

Do I have to take part?

No, your participation is entirely voluntary (your choice). If you are a student and you choose not to take part this will not affect your academic progress or future clinical placements. We hope that you will participate because we need to obtain as many responses as possible to test the validity of the survey questions in the New Zealand context. If you agree to take part **please note that submitting the completed survey will indicate that you have read and understood this information sheet, and give your consent to participate in the study.** You do not have to answer all the questions, and you may stop answering questions at any time. However, answering all the questions will provide the best information about the survey. The survey is anonymous so once you have submitted the survey online it is not possible to withdraw from the study. If you have any queries or concerns about your rights as a participant, you may wish to contact your students association or your professional organization.

Will my taking part in this study be kept confidential?

Yes, the following steps have been taken to ensure the confidentiality of the online survey. (1) The survey is anonymous. There is no way to link your answers to your email address because after you submit your answers, the link to your email address is automatically cut. However, your email address is marked as "has answered" this enables one reminder to be sent to those who have not responded after one week. (2) The survey is on a secure encrypted web page, you can tell you are on a secure page when the address begins with "https" or there is a padlock icon in the address bar. (3) The data is sent to Digium Enterprises secure server using 128-bit encryption. (4) Access to the data is limited to the researchers named above who will have access via specific user names and passwords, a statistician who will assist with the analysis will be authorised to access the data. In addition, there is a small group of Digium Enterprises staff who have access to the server for maintenance purposes only. (5) We will report the results in a summary form that will not allow individuals to be identified. (6) The data will be stored on a secure server for five years after which the data will be destroyed.

What will happen to the results of this study?

The results of this study will be used in conjunction with the results of the other two phases of the project to decide whether the CLES+T is a valid tool for evaluating student nurses' perceptions of their clinical learning environments, supervision and teaching in both hospital and community settings in New Zealand. The results of this survey will be reported as part of the other two phases of the project in journal publications, conference presentations, and via the internet on the Ako Aotearoa web site and the CPIT research repository. If you would like a copy of the results of this survey you may contact Paul Watson the principal researcher.

Who has approved this study?

This study has received ethical approval from the CPIT ethics committee. The Head of the School of Nursing and Human Services at CPIT has given permission for this study to be carried out.

Please feel free to contact Paul Watson the principal researcher if you have any questions about this study. Paul can be contacted by phone 03-940-8707 or email watsonp@cpit.ac.nz

You may want to print a copy of this information sheet for your records before you begin the survey by clicking "Next" below.

Appendix 4

CPIT School of Nursing and Human Services Research Project

Evaluating Clinical Learning Experiences in Hospital Settings in New Zealand

Information Sheet

You are invited to take part in an online survey.

What is the online survey about?

The online survey is about evaluating the quality of your clinical learning experience in a hospital setting. The survey uses the CLES+T scale which was developed and validated in Finland. The study will establish whether the CLES+T is a valid and reliable measure of nursing students' perceptions of the quality of their clinical learning experience in hospital settings in New Zealand.

A team of researchers at the School of Nursing and Human Services CPIT is conducting this study with a co-researcher Dr Mikko Saarikoski from Turku University in Finland. The CPIT researchers are Dr Paul Watson, Dr Philippa Seaton, Rose Whittle, Isabel Jamieson and Deb Sims. The study is funded by the Southern Regional Hub of Ako Aotearoa, the National Centre for Tertiary Teaching Excellence.

Why do this survey?

We know the clinical environments in which students learn can make or break their learning in practice. This study will tell us if the CLES+T survey is a valid and reliable measure of nursing students' perceptions of the quality of their clinical learning experience. The CLES+T survey could then be used to monitor and help improve the quality of clinical teaching and learning environments for student nurses.

What do I get out of doing this survey?

You will be invited to go in a draw to win \$100. Details of how to do this are at the end of the survey. One name will be chosen randomly three weeks after each clinical course has finished.

How are participants selected for this study?

All current students in the Bachelor of Nursing programme at CPIT are being invited to complete the CLES+T online at the end of each of their hospital placements.

What will the survey involve?

Completing the survey online will take 10-15 minutes of your time.

Do I have to take part?

No, your participation is entirely your choice. If you choose not to take part this will not affect your academic progress or future clinical placements. We hope you will participate because we need to obtain as many responses as possible. **If you agree to take part please note that submitting the survey will indicate that you have read and understood this information sheet, and give your consent to take part.** You do not have to answer all the questions, and you may stop answering questions at any time. However, answering all the questions will provide the best information about the survey. The survey is anonymous so once you have submitted the survey online it is not possible to withdraw from the study. If you have any queries or concerns about your rights as a participant, you can contact your students association or your professional organization.

Will my taking part in this study be kept confidential?

Yes, **however, please note** that while the survey does not include your name, if you are the **only** student at a placement **and** a member of the research team knows you were at that placement they would be able to identify your response. They may also be able to identify your response if you are a member of a less common gender, age group, or ethnicity. Therefore, we cannot assure you that your response will be anonymous to members of the research team. We **can** assure you that your participation and response to the survey will be kept **confidential**. There is no way to link your answers to your email address because after you submit your answers, the link to your email address is automatically cut and marked as "has answered". This enables reminders to be automatically sent after one and two weeks to those who have not responded.

What will happen to the results of this study?

The results of this study will be used to decide whether the CLES+T is a valid and reliable tool for evaluating student nurses' perceptions of the quality of their clinical learning experiences in hospital settings in New Zealand. The findings of the research project will be reported in journal publications, conference presentations, and via the internet on the Ako Aotearoa web site and the CPIT research repository. If you would like a copy of the results of this survey you may contact Paul Watson the principal researcher.

Who has approved this study?

This study has received ethical approval from the CPIT ethics committee. The Head of the School of Nursing at CPIT has given permission for this study to be carried out.

Please feel free to contact Paul Watson the principal researcher if you have any questions about this study. Paul can be contacted by phone 03-940-8707 or email watsonp@cpit.ac.nz

You may want to print a copy of this information sheet for your records before you begin the survey by clicking 'Next' below.

Appendix 5

Face validity of the CLES+T for hospital and community settings in New Zealand

The first section of the CLES+T relates to the relationship student nurses have with their supervisor at the placement. The term 'supervisor' refers to registered nurses employed by the placement who supervise the student nurses; this could be an individual nurse (preceptor, clinical liaison nurse) or a group (or team) of nurses. The concept of 'supervision' refers to guiding, supporting and assessing the student nurse by registered nurses employed by the placement.

For each statement please choose the option that best describes your opinion about **the relevance of the statement** for evaluating the quality of student nurses' clinical practice learning experience.

1. My supervisor showed a positive attitude towards supervision.

	not relevant	unable to assess relevance without revising statement	relevant but needs minor alterations	relevant no alterations required
Hospital Settings	()	()	()	()
Community Settings	()	()	()	()

2. If you have chosen revisions or alterations please type your suggestions here:

3. I felt that I received individual supervision.

	not relevant	unable to assess relevance without revising statement	relevant but needs minor alterations	relevant no alterations required
Hospital Settings	()	()	()	()
Community Settings	()	()	()	()

4. If you have chosen revisions or alterations please type your suggestions here:

5. I continuously received feedback from my supervisor.

	not relevant	unable to assess relevance without revising statement	relevant but needs minor alterations	relevant no alterations required
Hospital Settings	()	()	()	()
Community Settings	()	()	()	()

6. If you have chosen revisions or alterations please type your suggestions here:

7. Overall I am satisfied with the supervision I received.

	not relevant	unable to assess relevance without revising statement	relevant but needs minor alterations	relevant no alterations required
Hospital Settings	()	()	()	()
Community Settings	()	()	()	()

8. If you have chosen revisions or alterations please type your suggestions here:

9. The supervision was based on a relationship of equality and promoted my learning.

	not relevant	unable to assess relevance without revising statement	relevant but needs minor alterations	relevant no alterations required
Hospital Settings	()	()	()	()
Community Settings	()	()	()	()

10. If you have chosen revisions or alterations please type your suggestions here:

11. There was mutual interaction in the supervisory relationship.

	not relevant	unable to assess relevance without revising statement	relevant but needs minor alterations	relevant no alterations required
Hospital Settings	()	()	()	()
Community Settings	()	()	()	()

12. If you have chosen revisions or alterations please type your suggestions here:

13. Mutual respect and approval prevailed in the supervisory relationship.

	not relevant	unable to assess relevance without revising statement	relevant but needs minor alterations	relevant no alterations required
Hospital Settings	()	()	()	()
Community Settings	()	()	()	()

14. If you have chosen revisions or alterations please type your suggestions here:

15. The supervisory relationship was characterised by a sense of trust.

	not relevant	unable to assess relevance without revising statement	relevant but needs minor alterations	relevant no alterations required
Hospital Settings	()	()	()	()
Community Settings	()	()	()	()

16. If you have chosen revisions or alterations please type your suggestions here:

The second section of the questionnaire relates to the student nurses perception of the teaching and learning atmosphere at the placement.

For each statement please choose the option that best describes your opinion about **the relevance of the statement** for evaluating the quality of student nurses' clinical practice learning experience.

17. The staff were easy to approach.

	not relevant	unable to assess relevance without revising statement	relevant but needs minor alterations	relevant no alterations required
Hospital Settings	()	()	()	()
Community Settings	()	()	()	()

18. If you have chosen revisions or alterations please type your suggestions here:

19. I felt comfortable going to the placement at the start of my shift.

	not relevant	unable to assess relevance without revising statement	relevant but needs minor alterations	relevant no alterations required
Hospital Settings	()	()	()	()
Community Settings	()	()	()	()

20. If you have chosen revisions or alterations please type your suggestions here:

21. During staff meetings (e.g. patient handover) I felt comfortable taking part in discussions.

	not relevant	unable to assess relevance without revising statement	relevant but needs minor alterations	relevant no alterations required
Hospital Settings	()	()	()	()
Community Settings	()	()	()	()

22. If you have chosen revisions or alterations please type your suggestions here:**23. There was a positive atmosphere at the placement.**

	not relevant	unable to assess relevance without revising statement	relevant but needs minor alterations	relevant no alterations required
Hospital Settings	()	()	()	()
Community Settings	()	()	()	()

24. If you have chosen revisions or alterations please type your suggestions here:**25. The staff were generally interested in student supervision.**

	not relevant	unable to assess relevance without revising statement	relevant but needs minor alterations	relevant no alterations required
Hospital Settings	()	()	()	()
Community Settings	()	()	()	()

26. If you have chosen revisions or alterations please type your suggestions here:**27. The staff learnt to know the students by their personal names.**

	not relevant	unable to assess relevance without revising statement	relevant but needs minor alterations	relevant no alterations required
Hospital Settings	()	()	()	()
Community Settings	()	()	()	()

28. If you have chosen revisions or alterations please type your suggestions here:**29. There were sufficient meaningful learning situations on the placement.**

	not relevant	unable to assess relevance without revising statement	relevant but needs minor alterations	relevant no alterations required
Hospital Settings	()	()	()	()
Community Settings	()	()	()	()

30. If you have chosen revisions or alterations please type your suggestions here:**31. The learning situations were multidimensional in terms of content.**

	not relevant	unable to assess relevance without revising statement	relevant but needs minor alterations	relevant no alterations
Hospital Settings	()	()	()	()
Community Settings	()	()	()	()

32. If you have chosen revisions or alterations please type your suggestions here:

33. The placement can be regarded as a good learning environment.

	not relevant	unable to assess relevance without revising statement	relevant but needs minor alterations	relevant no alterations required
Hospital Settings	()	()	()	()
Community Settings	()	()	()	()

34. If you have chosen revisions or alterations please type your suggestions here:

The third section of the questionnaire relates to student nurses' perception of the role of the nurse teacher. The term 'nurse teacher' refers to a lecturer (or academic liaison nurse) employed by the Polytechnic or University who visits the clinical placement.

For each statement please choose the option that best describes your opinion about **the relevance of the statement** for evaluating the quality of student nurses' clinical practice learning experience.

35. In my opinion, the nurse teacher was capable of integrating theoretical knowledge and the everyday practice of nursing.

	not relevant	unable to assess relevance without revising statement	relevant but needs minor alterations	relevant no alterations required
Hospital Settings	()	()	()	()
Community Settings	()	()	()	()

36. If you have chosen revisions or alterations please type your suggestions here:

37. The nurse teacher was capable of operationalising the learning goals of this placement.

	not relevant	unable to assess relevance without revising statement	relevant but needs minor alterations	relevant no alterations required
Hospital Settings	()	()	()	()
Community Settings	()	()	()	()

38. If you have chosen revisions or alterations please type your suggestions here:

39. The nurse teacher helped me to reduce the theory-practice gap.

	not relevant	unable to assess relevance without revising statement	relevant but needs minor alterations	relevant no alterations required
Hospital Settings	()	()	()	()
Community Settings	()	()	()	()

40. If you have chosen revisions or alterations please type your suggestions here:

41. The nurse teacher was like a member of the nursing team.

	not relevant	unable to assess relevance without revising statement	relevant but needs minor alterations	relevant no alterations required
Hospital Settings	()	()	()	()
Community Settings	()	()	()	()

42. If you have chosen revisions or alterations please type your suggestions here:

43. The nurse teacher was able to give her or his expertise to the clinical team.

	not relevant	unable to assess relevance without revising statement	relevant but needs minor alterations	relevant no alterations required
Hospital Settings	()	()	()	()
Community Settings	()	()	()	()

44. If you have chosen revisions or alterations please type your suggestions here:

45. The nurse teacher and the clinical team worked together in supporting my learning.

	not relevant	unable to assess relevance without revising statement	relevant but needs minor alterations	relevant no alterations required
Hospital Settings	()	()	()	()
Community Settings	()	()	()	()

46. If you have chosen revisions or alterations please type your suggestions here:

47. The common meetings between the mentor, nurse teacher and myself were comfortable experiences.

	not relevant	unable to assess relevance without revising statement	relevant but needs minor alterations	relevant no alterations required
Hospital Settings	()	()	()	()
Community Settings	()	()	()	()

48. If you have chosen revisions or alterations please type your suggestions here:

49. In our common meetings I felt that we were colleagues.

	not relevant	unable to assess relevance without revising statement	relevant but needs minor alterations	relevant no alterations required
Hospital Settings	()	()	()	()
Community Settings	()	()	()	()

50. If you have chosen revisions or alterations please type your suggestions here:

51. My learning needs were the focus of the meetings.

	not relevant	Unable to assess relevance without revising statement	relevant but needs minor alterations	relevant no alterations required
Hospital Settings	()	()	()	()
Community Settings	()	()	()	()

52. If you have chosen revisions or alterations please type your suggestions here:

The fourth section of the questionnaire relates to nursing students' perception of the leadership style of the manager at the placement.

For each statement please choose the option that best describes your opinion about **the relevance of the statement** for evaluating the quality of student nurses' clinical practice learning experience.

53. The manager regarded the staff in the placement as a key resource.

	not relevant	unable to assess relevance without revising statement	relevant but needs minor alterations	relevant no alterations required
Hospital Settings	()	()	()	()
Community Settings	()	()	()	()

54. If you have chosen revisions or alterations please type your suggestions here:

55. The manager was a team member.

	not relevant	unable to assess relevance without revising statement	relevant but needs minor alterations	relevant no alterations required
Hospital Settings	()	()	()	()
Community Settings	()	()	()	()

56. If you have chosen revisions or alterations please type your suggestions here:

57. Feedback from the manager could easily be considered a learning situation.

	not relevant	unable to assess relevance without revising statement	relevant but needs minor alterations	relevant no alterations required
Hospital Settings	()	()	()	()
Community Settings	()	()	()	()

58. If you have chosen revisions or alterations please type your suggestions here:

59. The effort of individual employees was appreciated.

	not relevant	unable to assess relevance without revising statement	relevant but needs minor alterations	relevant no alterations required
Hospital Settings	()	()	()	()
Community Settings	()	()	()	()

60. If you have chosen revisions or alterations please type your suggestions here:

The fifth section of the questionnaire relates to nursing students' perceptions of the nursing care at the placement.

For each statement please choose the option that best describes your opinion about **the relevance of the statement** for evaluating the quality of student nurses' clinical practice learning experience.

61. The placement's nursing philosophy was clearly defined.

	not relevant	unable to assess relevance without revising statement	relevant but needs minor alterations	relevant no alterations required
Hospital Settings	()	()	()	()
Community Settings	()	()	()	()

62. If you have chosen revisions or alterations please type your suggestions here:

63. People received individualised nursing care.

	not relevant	unable to assess relevance without revising statement	relevant but needs minor alterations	relevant no alterations required
Hospital Settings	()	()	()	()
Community Settings	()	()	()	()

64. If you have chosen revisions or alterations please type your suggestions here:**65. There were no problems in the information flow related to peoples' care.**

	not relevant	unable to assess relevance without revising statement	relevant but needs minor alterations	relevant no alterations required
Hospital Settings	()	()	()	()
Community Settings	()	()	()	()

66. If you have chosen revisions or alterations please type your suggestions here:**67. Documentation of nursing (e.g. nursing plans, daily recordings of nursing procedures, etc.) was clear.**

	not relevant	unable to assess relevance without revising statement	relevant but needs minor alterations	relevant no alterations required
Hospital Settings	()	()	()	()
Community Settings	()	()	()	()

68. If you have chosen revisions or alterations please type your suggestions here:**69. I am a:**

- ☐ Nursing Student
- ☐ Clinical Nurse who supervises nursing students
 - ☐ Community setting
 - ☐ Hospital setting
- ☐ Nurse Teacher employed by the polytechnic who teaches nursing students
 - ☐ Community setting
 - ☐ Hospital setting
- ☐ Manager of a placement that hosts nursing students
 - ☐ Community setting
 - ☐ Hospital setting

Appendix 6

Establishing the construct validity and reliability of the Clinical Learning Environment, Supervision and Nurse Teacher Scale (CLES+T) in hospital settings in New Zealand

In this questionnaire the following terms have the following meanings:

Supervisor refers to registered nurses employed by the placement who supervised you; this could be an individual nurse (preceptor, clinical liaison nurse) or a group (or team) of nurses.

Supervision refers to guiding, supporting and assessing the student nurse by registered nurses employed by the placement.

Nurse teacher refers to a lecturer (or academic liaison nurse) employed by the Polytechnic who visits the clinical placement.

For each statement below, please choose the option that best describes your opinion.

		fully disagree	disagree to some extent	neither agree nor disagree	agree to some extent	fully agree
1	My supervisor showed a positive attitude towards supervision.	()	()	()	()	()
2	I felt that I received individual supervision.	()	()	()	()	()
3	I continuously received feedback from my supervisor.	()	()	()	()	()
4	Overall I am satisfied with the supervision I received.	()	()	()	()	()
5	The supervision was based on a relationship of equality and promoted my learning.	()	()	()	()	()
6	There was mutual interaction in the supervisory relationship.	()	()	()	()	()
7	Mutual respect and approval prevailed in the supervisory relationship.	()	()	()	()	()
8	The supervisory relationship was characterised by a sense of trust.	()	()	()	()	()
9	The staff were easy to approach.	()	()	()	()	()
10	I felt comfortable going to the placement at the start of my shift.	()	()	()	()	()
11	During staff meetings (e.g. patient handover) I felt comfortable taking part in discussions.	()	()	()	()	()

12	There was a positive atmosphere at the placement.	()	()	()	()	()
13	The staff were generally interested in student supervision.	()	()	()	()	()
14	The staff learnt to know the students by their personal names.	()	()	()	()	()
		fully disagree	disagree to some extent	neither agree nor disagree	agree to some extent	fully agree
15	There were sufficient meaningful learning situations on the placement.	()	()	()	()	()
16	The learning situations were multidimensional in terms of content.	()	()	()	()	()
17	The placement can be regarded as a good learning environment.	()	()	()	()	()
18	In my opinion the nurse teacher was capable of integrating theoretical knowledge and the everyday practice of nursing.	()	()	()	()	()
19	The nurse teacher was capable of operationalising the learning goals of this placement.	()	()	()	()	()
20	The nurse teacher helped me to reduce the theory-practice gap.	()	()	()	()	()
21	The nurse teacher was like a member of the nursing team.	()	()	()	()	()
22	The nurse teacher was able to give her or his expertise to the clinical team.	()	()	()	()	()
23	The nurse teacher and the clinical team worked together in supporting my learning.	()	()	()	()	()
24	The common meetings between the supervisor, nurse teacher and myself were comfortable experiences.	()	()	()	()	()
25	In common meetings between the supervisor, nurse teacher and myself I felt that we were colleagues.	()	()	()	()	()
26	My learning needs were the focus of the meetings between the supervisor, nurse teacher and myself.	()	()	()	()	()
27	The manager regarded the staff in the placement as a key resource.	()	()	()	()	()
28	The manager was a team member.	()	()	()	()	()
29	Feedback from the manager could easily be considered a learning situation.	()	()	()	()	()
30	The effort of individual employees was appreciated.	()	()	()	()	()

31	The placement's nursing philosophy was clearly defined.	()	()	()	()	()
32	People received individualised nursing care.	()	()	()	()	()
33	There were no problems in the information flow related to peoples' care.	()	()	()	()	()
		fully disagree	disagree to some extent	neither agree nor disagree	agree to some extent	fully agree
34	Documentation of nursing (e.g. nursing plans, daily recordings of nursing procedures, etc.) was clear.	()	()	()	()	()
35	I felt my own cultural perspective was acknowledged and valued in the placement	()	()	()	()	()

If you would like to make any comment about the quality of your clinical practice learning experience please type it in the box below.

This section of the questionnaire collects some information about the placement and about you.

What type of placement were you at?

- ☐ Child & Family Health
- ☐ Continuing Care
- ☐ Maternal Infant
- ☐ Medical
- ☐ Medical & Surgical
- ☐ Mental Health
- ☐ Surgical

What was the duration of your placement in days?

How many times did your nurse teacher (lecturer/academic liaison nurse employed by the polytechnic) meet with you during the placement?

Which year of the Bachelor of Nursing programme are you in?

- ☐ First year
- ☐ Second year
- ☐ Third year

What gender are you?

- ☐ Female
- ☐ Male

What is your age (in years)? _____

Which ethnic group do you belong to? Select the ethnicity or ethnicities that apply to you.

- ☐ New Zealand European
 - ☐ Maori
 - ☐ Pacifica
 - ☐ Asian
 - ☐ Other such as DUTCH, JAPANESE, TOKELEAUAN. Please specify
-

Select the option or options you give consent for the information you have provided in this survey being used for:

- ☐ Feedback to the clinical placement
- ☐ Research as outlined in the information sheet