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**The implementation of a  
collaborative peer learning 2:1 model of  
practice placement education within dietetics  
pre-registration training in Ireland**

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This thesis is submitted to Trinity College Dublin, The University of Dublin in fulfilment of the requirements for the degree of Doctor of Philosophy.

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*Ann-Marie Lynam*

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## **List of Abbreviations**

CSP – Chartered Society of Physiotherapists

CL – Collaborative Learning

HEI – Higher Education Institution

INDI – Irish Nutrition and Dietetic Institute

HSCP – Health and Social Care Professional

HSE – Health Service Executive

PAL – Peer-assisted learning

PE – Practice Educator

PF – Peer Feedback

PL – Peer Learning

PO – Peer Observation

PPB – Practice Placement B

PPC – Practice Placement C

PPE – Practice Placement Education

## **Summary Abstract**

The educational approach towards practice education in health-related disciplines has changed in recent years. The use of collaborative peer learning models of practice education has increased, associated with positive effects on desired outcomes such as self-directed (adult) learning, problem-solving skills and reflective practice. These collaborative learning models most frequently consist of a ratio of two students to one educator (2:1). At present, there is little published literature on the impact of collaborative peer learning models on the attainment of professional competence or on the development of professional skills in students during practice education. Furthermore, there is a need for an evidence base for the implementation of this model within the discipline of dietetics. The aim of this study therefore, was to examine the perceived impact of a collaborative peer learning 2:1 model on the attainment of professional competence, the development of professional skills and the overall practice education experience of students and practice educators from an undergraduate dietetics programme.

A longitudinal study following a cohort of dietetic students over three years, with data collection at three time points (Timepoints A, B and C) was conducted. A mixed methods research approach was used following a sequential explanatory design, consisting of two separate phases, quantitative followed by qualitative. All students who participated in a 2:1 model were invited to complete a questionnaire at the three time points. Practice educators were invited to complete a questionnaire at the time point at which they facilitated a 2:1 model. The quantitative data were analysed descriptively and inferentially, using non-parametric paired and unpaired comparison tests. Purposeful sampling was undertaken following analysis of the questionnaires at Timepoint B and Timepoint C, in order to identify student and practice educator interviewees with diverse opinions who were then

interviewed at the relevant time point. Inductive content analysis, using a thematic approach was used to describe the qualitative data.

The response rate for student completion of the questionnaire was high at all three time points, with a final number of 15/16 (93.8%) of those included at Timepoint A remaining at Timepoint C. The response rate for Placement B educator completion of the questionnaire was 25/135 (18.5%) (Timepoint B) and for Placement C educators was 23/134 (17.2%) (Timepoint C). Six students and seven Placement B educators were interviewed at Timepoint B and five students and seven Placement C educators were interviewed at Timepoint C.

Students and practice educators reported that a 2:1 model helped students to attain the five professional competencies and develop the six professional skills investigated, during Placement B and the initial stages of Placement C. From the interview data, a number of themes emerged. Careful planning and preparation, and strong practice educator facilitation skills, were found to be essential for successful implementation of a 2:1 model. The 2:1 model was perceived by students and practice educators to be most useful during Placement B and the initial stages of Placement C. Having a peer during practice education was highly regarded both for social and emotional support and to avail of peer learning opportunities. Practice educators perceived that support from colleagues with their caseload may be required in early stages of practice education, but efficiencies were made as students progressed. Students perceived that the time with their peer, independent of the practice educator, was valuable for developing their autonomy.

The use of a collaborative peer learning approach within practice education has increased over the past decade and has been associated with many advantages. Despite this, it is not widely used within health-related disciplines, primarily due to perceived challenges to its implementation. This research supports the use of a collaborative peer learning 2:1 model during the early and midway practical components of professional programmes in health-related disciplines, with benefits outweighing any challenges which may need to be overcome. Adequate preparation for students and training for practice educators is essential for the successful implementation of this type of collaborative peer learning 2:1 model.

# **CHAPTER 1: INTRODUCTION**

## **1.1 Practice education in healthcare professional education**

Practice education is an integral component of all professional programmes in health and social care, nursing and medical professions (DeClute & Ladyshevsky, 1993). It represents a significant proportion of undergraduate health and social care professional (HSCP) programmes, at one thousand hours, or approximately one quarter of the duration of these degree programmes (Barrett, Belton, & Alpine, 2019; CORU, 2019a). Students are required to demonstrate competence in accordance with prescribed standards of proficiency, in order to gain a professional qualification (CORU, 2019b). The development of professional skills including the ability to engage in reflective practice, self-directed (adult) learning and problem-solving is also required (Boud, Cohen, & Sampson, 2016; Connolly & Donovan, 2002; Mann, Gordon, & MacLeod, 2009).

Learning during practice education is a complex process requiring students to successfully put theory into practice and learn empirically, i.e. through observation and practise (Boud & Walker, 1998). Education models underpinning the practice education component of professional programmes vary, and opinion differs on which model is superior (Lekkas et al., 2007). Models of practice education can be broadly divided into those which are based on a collaborative approach and those which are not. A 1:1 or individual model, which consists of a ratio of one student to one practice educator, is based on a traditional, apprenticeship-style approach. It remains the most widely used model of practice education (Barrett et al., 2019; Lekkas et al., 2007). An

alternative to this approach is a collaborative peer learning model, the most common of which is a 2:1 model, which consists of a ratio of two students to one practice educator. A collaborative peer learning 2:1 model is underpinned by the theory of collaborative learning, which may be defined as “indirect teaching in which the instructor identifies the task and organises the students to work out a solution, independently of the educator” (CSP, 2002) (p. 22).

Collaborative peer learning 2:1 models (hereafter, 2:1 models) are well established, with research published on the use of these approaches in a variety of educational settings over the past three decades (Beveridge & Pentland, 2020; DeClute & Ladyshevsky, 1993; Ladyshevsky, Barrie, & Drake, 1998; Tai, Molloy, Haines, & Canny, 2016). 2:1 models have been described most commonly in the disciplines of physiotherapy and occupational therapy (Sevenhuysen, Thorpe, Molloy, Keating, & Haines, 2017). The use of a 2:1 model within practice education encourages students to direct their own learning, engage in the feedback process and utilise reflective practice. This improves the quality of the student and practice educator experience, while achieving desirable trends in patient care, practice education and professional development (Briffa & Porter, 2013; DeClute & Ladyshevsky, 1993; Secomb, 2008). In conjunction with some reports of increased efficiency of educators with students as a group, rather than individually, this has resulted in an increased interest in 2:1 models within some disciplines (Baldry Currens & Bithell, 2003; Rodger et al., 2008; Sevenhuysen, Farlie, Keating, Haines, & Molloy, 2015). A more comprehensive review of this literature is presented in Chapter Two.



The requirement for an educational structure to support practice educators in the facilitation of peer learning within a 2:1 model is also evident in the literature (Baldry Currens, 2003; Dawes & Lambert, 2010). Insufficient information on, and support for, implementing a 2:1 model have been reported as barriers to implementing the model (Briffa & Porter, 2013; Roberts et al., 2009b). To address this challenge, independent of this research, a framework to provide a structure for the implementation of a 2:1 model within practice education was developed by the researcher, under the supervision of the research supervisors (Lynam, Corish, & Connolly, 2015) (Appendix 1). The framework is further described in Section 1.5.

The impact of a 2:1 model on the attainment of professional competence and the development of professional skills within health-related disciplines remains under-researched (DeClute & Ladyshevsky, 1993; Sevenhuysen et al., 2014). This is particularly apparent within dietetics education (Reidlinger, Lawrence, Thomas, & Whelan, 2017; Roberts et al., 2009b). Research is required to provide an evidence base for all models of practice education including the use of a 2:1 model in the discipline of dietetics.

## **1.2 BSc (Hons) Human Nutrition and Dietetics (TCD/TU Dublin)**

The BSc (Hons) Human Nutrition and Dietetics programme is a joint programme between the University of Dublin, Trinity College (TCD) and Technological University Dublin (TU Dublin), formerly Dublin Institute of Technology (DIT). It is the only undergraduate dietetics programme in the

Republic of Ireland. The introduction of legislation (The HSCP Act, 2005) that made registration mandatory for all practising HSCPs in Ireland in 2005, included an approval process for all HSCP programmes (CORU, 2019a). Students are required to complete a minimum of one thousand hours of practice placement education (hereafter, practice education) and demonstrate competence in accordance with prescribed standards of proficiency, in order to gain a professional qualification (CORU, 2019c). Similar to the standards of proficiency, competency criteria set down by the professional bodies for the CORU-registered professions were previously used to assess students during practice education (Appendix 3). The term competency criteria, in place when this research was carried out, has been used throughout this thesis.

In 2012, the duration of the undergraduate dietetic programme was reduced from four-and-a-half years to four years, in line with other HSCP programmes. The practice education component of the programme was integrated into a spiral curriculum, with three distinct periods of practice education over the course of a four-year programme. This was to replace a single twenty-six week placement in the final year of the old programme. A spiral curriculum is based on a modified Kolb approach (1984), combining theory, rehearsal, reflection and practice with each aspect revisited and expanded upon as a student progresses (Harden & Stamper, 1999; Parker & Kersner, 1998).

Practice Placement A, is completed at the end of Year 1. This is a four-week (140 hour) placement. The focus is institutional food service and students are supervised by the catering manager within a catering department of a healthcare setting.

Practice Placement B (hereafter, Placement B), is completed following Year 2. This is a 10-week (370 hour) practice placement. The focus is on primary care, public health/health promotion (including behavioural change strategies) and care of those with chronic disease. Students are facilitated in smaller regional hospital and primary care community dietetics departments. The 10-week period is usually divided up over two to three locations, with students spending a number of weeks in each. Students are usually facilitated by a number of practice educators within each location, often referred to as a multiple mentoring model (Copley & Nelson, 2012). While there may be one overall student coordinator, all practice educators share responsibility for student practice education. The Placement B assessment form (Appendix 3) is completed every 1-2 weeks depending on the placement schedule, mainly to coincide with change of practice educator or setting. To successfully complete Placement B and proceed to Practice Placement C (hereafter, Placement C) the following year, students must meet the competency criteria for this stage of practice education, as described in Appendix 3.

Placement C is completed at the beginning of Year 4. This is a 12-week (444 hour) practice placement. The focus is on acute clinical care. Students are facilitated in dietetics departments of large teaching hospitals and do not change location during the placement period. Most settings allocate students to one practice educator per two-week period to enable experiential learning in a variety of areas in which dietitians normally practise within the acute clinical care environment. The Placement C assessment form (Appendix 3) is usually completed every two weeks, except in the case of change of practice educator after one week, when it is completed weekly.

In 2008, prior to the introduction of the spiral curriculum, practice education learning outcomes and performance indicators, along with staged competency criteria and practice education assessment forms, were developed. This was undertaken by university-based dietetics academic staff in collaboration with practice educator representatives from INDI and supported by the university teaching and learning staff (Bowles, 2008; Crehan, Moloney, Bowles, & Corish, 2010). These were informed by the INDI entry-level professional competencies published in 2005 (INDI, 2005) (Appendix 3). The five professional competencies established at that time were ‘knowledge and practice’, ‘professionalism’, ‘communication’, ‘team working’ and ‘service delivery’.

The practice education assessment forms were modified in 2012 by the practice education coordinator (PEC) and programme director, to coincide with the introduction of the spiral curriculum of practice education (Appendix 3). This was done in collaboration with experienced practice educators from the INDI, having reviewed the assessment forms used by dietetics programmes in the UK and Australia. As is recommended in healthcare professional education, students led the completion of their own assessment forms in both Placement B and Placement C, to encourage student-directed learning and assessment and reflective practice (Boud et al., 2016; Ibarra-Sáiz, Rodríguez-Gómez, & Boud, 2020; Morris & Moore, 2006). Assessment forms which were initially completed by students were reviewed by the supervising dietitian (practice educator) and amended as necessary in consultation with the student. The practice educator then made the decision as to whether the student had met the standards required to achieve the professional competencies required for the stage of practice placement.

The appointment of a full-time practice education post funded by the Health Service Executive (HSE), indicated the value the HSE gives to practice education and permitted

the BSc Human Nutrition and Dietetics programme team to review the long-standing model of practice education used within the programme. This was in keeping with the recommendations of the HSCP Office Review of the Practice Education System in 2011, that HSCP programmes should consider different models of student supervision within practice education and to align the practice education component of the dietetics programme with that of other HSCP programmes in Ireland and dietetics programmes based in the UK and internationally (HSE, 2011).

### **1.3 A review of practice education within the BSc Human Nutrition and Dietetics Programme**

The practice education component of the dietetics programme was reviewed in the context of incoming HSCP registration requirements; the skill set identified by the profession and academic dietitians required by graduate dietitians to work in a changing healthcare environment; a change in approach to student education and supervision; and the provision of adequate practice education capacity (CORU, 2019a; HSE, 2011; Rodger et al., 2008).

An international report from a group of HSCP educators in audiology, occupational therapy, physiotherapy and speech and language therapy, as part of the 'Universitas 21 Health Sciences Research Network', outlined the challenges of educating HSCPs in an "increasingly complex and changing environment" (Rodger et al., 2008) (p. 56). Hospital patients are often acutely ill with complex needs. HSCPs have significant responsibilities and workloads and there are staff shortages and many part-time and less experienced staff. This has resulted in an increasing reliance on diverse settings such as nursing homes, schools and private practice for facilitation of practice education, as well as role-emerging

practice education, which have been reported both internationally and within Ireland (Barrett et al., 2019; O'Connor, Cahill, & McKay, 2012; Rodger et al., 2008).

Within dietetics, the European Federation of the Associations of Dietitians (EFAD) has conducted much work on improving education and training standards within the profession across Europe. Professional competencies were developed for the profession at a European level, from work within two extensive EU-funded projects entitled Dietitians Improving Education and Training Standards – DIETS 1 and 2 (DIETS, 2009), within which Ireland undertook a leading role. Also within an Irish context, research was conducted on the practice education component of the BSc Human Nutrition and Dietetics (TCD/TU Dublin) programme in which recommendations were made that professional skills including self-directed learning, self-assessment and reflective practice required greater consideration within the prescribed competency criteria of practice education for the professional programme (Bowles, 2008). This was in keeping with similar findings from research on other HSCP programmes within Ireland, regarding the preparation of students during practice education for working in the healthcare setting (Barrett et al., 2019; HSE, 2015; O'Connor et al., 2012; Reed, Walsh, & Lyons, 2015).

Regarding practice education capacity, within dietetics, at the time of conducting this research, only one undergraduate dietetics programme (joint programme between the University of Dublin, Trinity College and Dublin Institute of Technology) and no postgraduate programmes existed in the Republic of Ireland. However, there was still a perceived lack of capacity within the profession, despite the small number of students requiring practice education placements annually. Insufficient practice education capacity has been reported across the professions in Ireland for decades, with increasing student

numbers and the introduction of new professional programmes in order to meet workforce demands. This is reflective of the international situation (Barrett et al., 2019; O'Connor et al., 2012; Reed et al., 2015).

The review of practice education within the context described led to the exploration of different models of practice education. A narrative review of the literature was undertaken to examine different models of practice education that might be suitable to use within dietetics in the Irish setting. The review findings will be presented in Chapter Two.

#### **1.4 Preliminary study of the introduction of a collaborative peer learning 2:1 model**

In 2010, four out of forty-four dietetics practice education sites in the Republic of Ireland were approached to trial a 2:1 model, with a view to wider implementation of the model, depending on the outcome of the study. The sites were mixed, incorporating two large urban teaching hospitals, one primary care-based (community) dietetics department, and one smaller regional hospital. These sites were chosen so that dietitians who were experienced practice educators would be able to act as key informants or an advisory group, on whether the higher education institution (HEI) should implement a 2:1 model within dietetics practice education in Ireland. Educators at each site were supplied with literature on a collaborative, peer learning approach and given guidelines for facilitating collaborative learning, peer observation and the peer feedback process within a 2:1 model. No additional preparation over that normally provided was undertaken with the students, who were in the penultimate year of the BSc Human Nutrition and Dietetics programme.

All four sites which trialled the 2:1 model reported that they would use it again. The strongest recommendation from the advisory group which included the experienced practice educators who facilitated the model, was that specific guidelines on how to optimally facilitate two students during patient consultations were required. This recommendation in conjunction with challenges reported in the literature regarding the process of applying a 2:1 model, suggested that practical information on how to implement the model was required. As the number of weeks spent in each clinical site providing practice education in the Irish setting varies, along with the type of dietetic service provided, a framework with a broad scope to guide students and practice educators through the process was required.

### **1.5 Development of a framework to facilitate a collaborative peer learning 2:1 model**

In keeping with feedback from the advisory group on the level of support required, the structure to support the facilitation of peer learning, particularly peer feedback and reflective practice, was quite prescriptive. Similar needs have been reported in the literature (Baldry Currens & Bithell, 2003; Dawes & Lambert, 2010) with many practice educators citing difficulties with having to ‘unlearn’ previously learnt methods of giving feedback and learn new facilitation techniques (Roberts et al., 2009a). Insufficient detail within the published research, on how to implement a collaborative model across the health-related disciplines, has previously been reported as a barrier to implementing the model (Briffa & Porter, 2013; Roberts et al., 2009a).

To satisfy this requirement, the Lynam framework describes in a step-wise manner the organisation of the two students and the practice educator using a 2:1 collaborative peer



learning model (Lynam et al., 2015). A structured peer observation, scripting and feedback process is integrated into the sequential process of a patient consultation. Three different scenarios are described, incorporating both inpatient and outpatient consultations and the framework as developed was used to introduce a collaborative peer learning 2:1 model of practice education universally to the undergraduate dietetics programme (Lynam et al., 2015).

### **1.6 Preparation of students and practice educators for a collaborative peer learning 2:1 model**

In keeping with the recommendations generated by the preliminary study and extensive reports in the literature on the importance of the underlying skills to facilitate a 2:1 model, (Baldry Currens, 2003; Dawes & Lambert, 2010; DeClute & Ladyshevsky, 1993; Roberts et al., 2009a), a series of interactive education training sessions were developed for students in preparation for using the 2:1 model during practice education. These training sessions were delivered as part of the Professional Practice Studies Module in Year 2 of the BSc programme (Appendix 2) by the dietetics teaching staff and the practice education coordinator.

The training sessions provided students with the opportunity to actively learn about theories underpinning collaborative peer learning (Parker & Kersner, 1998), behavioural change (Johnson, Onwuegbuzie, & Turner, 2007) and reflective practice (Fade, 2004). Students were facilitated in role-play sessions throughout the module to gain practical experience in using the required skills including collaborative learning, peer observation (including scripting), the peer feedback process, evaluative judgement and integrated reflective practice skills. These skills were practised by students working in triads or trios,

assuming the roles of patient, dietitian and observer, while rehearsing various elements of patient consultations, as described in the development of the framework (Lynam et al., 2015). Students then practised completing practice education assessment forms and reflection logs based on their performance during the role plays within these training sessions.

All practice educators due to facilitate a 2:1 model for Placement B with this cohort of students received training on how to use the model. The training sessions developed were similar in content to those developed for the students. This was in response to feedback from the preliminary study into the use of the 2:1 model, when educators reported that a similar level of training was required for both students and practice educators. The content of these training sessions is described in more detail in Appendix 9. Training sessions began with brief discussion of the rationale and benefits of a spiral curriculum and the use of learning outcomes, performance indicators and competency criteria within this. Reflective practice was discussed with a practical exercise on completing a reflection log. The concept of and rationale for student-led completion of assessment forms was introduced and participants practised completion of an excerpt of an assessment form based on a role-play scenario. A collaborative peer learning 2:1 model was introduced, incorporating collaborative learning, peer observation and peer feedback and these types of learning were practised using role play scenarios based on the Lynam Framework (Lynam et al., 2015). A further workshop on facilitating feedback during practice education was held together with a review of some concepts from the behavioural change training courses which had been completed or were due to be completed by the practice educators.

The training sessions were delivered to educators in small groups at 18 locations countrywide by the practice education coordinator (AML). This provided the opportunity

for optimal learning and participation, including practise and role play, incorporating peer observation, peer feedback and reflective practice skills.

Prior to undertaking Placement C, all students participated in a single refresher training session on the peer learning skills used in the 2:1 model. All practice educators due to facilitate a 2:1 model for Placement C with this cohort of students also received training. The training sessions developed were very similar to those developed for Placement B educators and were delivered to educators in small groups at 11 locations countrywide by the practice education coordinator (AML).

As part of the pre-planning for the 2:1 model, a process was undertaken by the practice education coordinator (AML) and programme director (CC) to optimally match students. The interaction of students in role play scenarios within the Professional Practice Studies Module was used as a basis for the pairing process (Lynam et al., 2015). This was in line with evidence reporting the use of academic achievement and development of practical skills as factors in the consideration of pairing students (Briffa & Porter, 2013; Roberts et al., 2009b).

## **1.7 Background and role of the researcher**

The researcher (AML) is a qualified dietitian who commenced in the newly-appointed role of practice education coordinator for the BSc Human Nutrition and Dietetics Programme (TCD/TU Dublin) in late 2009. As part of this role, AML managed the implementation of the newly introduced spiral curriculum of practice education and received some support in this role from the programme director (CC). This included the preparation of students and

practice educators for participation in a 2:1 model of practice education, as described in Section 1.6.

Prior to conducting this research study, AML had, under the supervision of the research supervisors, developed a framework to inform the implementation of a collaborative peer learning model of practice education within a dietetics undergraduate setting (Lynam et al., 2015).

In the role of researcher, AML designed this research study, with guidance from the research supervisors. This included the development of the student and practice educator questionnaires and interview schedules for students and practice educators.

## **1.8 Aims and objectives of the research study**

The aim of this research was to explore the opinions and perceptions of dietetic students and practice educators using a collaborative peer learning 2:1 model to facilitate the attainment of professional competence during practice education in an Irish setting. The following objectives were set to achieve this aim:

- To establish students' and practice educators' opinions on the impact of peer learning (collaborative learning, peer observation and peer feedback) within a 2:1 model on attainment of professional competence during practice education
  
- To identify students' and practice educators' opinions on whether a 2:1 model facilitated the development of professional skills required of dietetic students during practice education

- To gain insight into students' and practice educators' perceptions of the impact of a 2:1 model on their experience of practice education
- To explore students' and practice educators' perceptions of their preparation for, and implementation of, a 2:1 model during practice education

## **1.9 Overview of study design**

A mixed methods research design was used to address these research aims and objectives. Thus, the study followed a sequential explanatory design which consisted of two separate quantitative and qualitative phases (Creswell, 2010). The quantitative phase used a cross-sectional approach to investigate the role of the 2:1 model in the attainment of professional competence and the development of professional skills. The qualitative phase explored the experiences and perceptions of students and practice educators using the 2:1 model. In a sequential explanatory design the qualitative component of the research should also help to interpret the quantitative findings (Bazeley, 2010).

The study followed a cohort of students who were facilitated using a 2:1 model of practice education within the BSc Human Nutrition and Dietetics programme (TCD/TU Dublin) over three years, with data collected at three time points. All students who participated in a 2:1 model were invited to complete a questionnaire at the three time points. Practice educators were invited to complete a questionnaire at the time point at which they facilitated a 2:1 model. The quantitative data were analysed descriptively, using non-

parametric paired and unpaired comparison tests. Purposeful sampling was undertaken following analysis of the questionnaires at Timepoint 2 and Timepoint 3 in order to identify student and practice educator interviewees with diverse opinions who were then interviewed at the relevant time point. Inductive content analysis, using a thematic approach was used to describe the qualitative data.

## **1.10 Conclusion**

This study contributes to the literature on the use of a collaborative peer learning 2:1 model of practice education within a HSCP programme. Students' and practice educators' opinions were sought on the impact of the 2:1 model on the attainment of professional competence, the development of professional skills and the implementation of the model. Recommendations made in this study can be used to inform the implementation of a 2:1 model within other HSCP educational programmes.

## **CHAPTER 2: LITERATURE REVIEW**

### **2.1 Introduction**

This is a narrative literature review that describes the models of practice education, critically reviews their advantages and disadvantages and examines their effectiveness in facilitating the achievement of competence and professional skills in HSCP students. The concept of practice education and its role within HSCP programmes is discussed as an introduction to this review, which was conducted using targeted internet searches via PubMed, Web of Science and Google Scholar. Combinations of a number of key search terms were used, including practice education, clinical education, practice placement, fieldwork, clinical supervision model, collaborative learning, peer learning, peer-assisted learning, 2:1 model and group supervision, using a list of terms for students and practice educators of medical, nursing and HSCP programmes (Appendix 4). Articles were considered if they were written in English and available in full-text. Reference lists of articles retrieved were also reviewed. No time limit on retrieval of articles was set.

### **2.2 Practice education within health-related professional programmes**

Student education at university-level has traditionally been based on student knowledge in a particular domain, but over recent decades the emphasis has slowly shifted towards the skills and competencies that are required of students and the value of generic and transferrable learning skills (Ibarra-Sáiz et al., 2020). These skills include the ability to engage in reflective practice, take responsibility for own learning (adult learning) and

problem-solving skills (Boud & Walker, 1998; Mann et al., 2009; O'Donoghue, 2011). Many undergraduate programmes have introduced specific educational strategies, such as modules using a problem-based learning approach, to guide the development of problem-solving and critical reasoning skills (Barrett & Moore, 2010; Rodger et al., 2008). For students in health-related disciplines, there has been a particular focus on these learning skills, particularly within the practical component of these professional programmes (Connolly & Donovan, 2002; Copley & Nelson, 2012).

Practice education represents an integral component of professional programmes within health-related disciplines (Lekkas et al., 2007). Within the HSCP programmes, in order to meet CORU professional programme approval standards, students are required to complete a minimum of one thousand hours of supervised practice education (CORU, 2019a). In Ireland, this accounts for approximately one quarter of the undergraduate HSCP degree programme, which represents a significant component of the learning opportunities of the student (Barrett et al., 2019). Practice education may be defined as the supervised acquisition of professional skills and provides students with the opportunity to develop skills and experience in a variety of clinical settings (Dawes & Lambert, 2010; Lekkas et al., 2007). A significant advantage of the integration of practice education within professional programmes is the connection between the academic and practical components of the programme (CORU, 2019b). This is important due to the well-recognised difficulty that students have in assimilating and transferring knowledge and skills gained in college within the professional work environment (Pender and De Looy, 2004; Norman et al, 2000 & Spalding, 2000). In addition, HSCP students undertake practice education within a complex healthcare environment which requires professional skills including critical thinking, reflective practice, problem-solving, interprofessional



working, collaboration within complex and culturally diverse environments and lifelong learning. This is in preparation for working within this environment upon graduation (Ladyshevsky, 2010; Tai, Canny, Haines, & Molloy, 2017b).

Learning during practice education is a complex process requiring students to successfully put theory into practice and learn empirically, i.e. through observation and practice (Boud & Walker, 1998). An ability to engage in reflective practice is required. Reflection involves describing, analysing and evaluating our thoughts, assumptions, beliefs, theory base and actions to help us capture and understand practical learning experiences (Fade, 2004). It is essential for effective practice and helps students develop into reflective professionals (Schon, 1987). Reflection is an essential component of continuous professional development of the healthcare professional and can assist these professionals in analysing complex and challenging situations, considering the way in which they make decisions, putting what they have learned into practice, improving their problem-solving skills and identifying future learning needs (HSE, 2019). Related to this is the required ability to accurately assess one's own work (self) and the quality of others' work. This may be termed evaluative judgment or self or peer evaluation. Evaluative judgment has been defined as "the ability to critically assess a performance in relation to a predefined but not necessarily explicit standard, which entails a complex process of reflection" (Tai, Canny, Haines, & Molloy, 2016) (p. 661). It is underpinned by trust in judgement of self and others. Evaluative judgement is a key skill which has been shown to be directly related to development of competence, feedback skills and self-directed learning (Ibarra-Sáiz et al., 2020).

Problem-based learning may be defined as “the learning that results from the process of working towards the understanding of a resolution of a problem. The problem is encountered first in the learning process” (Barrows & Tamblyn, 1980) (p. 1). The focus is on how the students learn rather than what they learn and developing this skill in the HSCP student prepares them for working as a healthcare professional and engaging in lifelong learning (Barrett & Naughton, 2015; Connolly & Donovan, 2002). Students often engage in problem-based learning with fellow students or peers (Meo, 2013). Learning resulting from collaboration between peers, or collaborative learning, has been defined by the Chartered Society for Physiotherapy (UK) as “indirect teaching in which the instructor identifies the task and organises the students to work out a solution, independently of the educator” (CSP, 2002) (p. 22). The definition is similar to that of problem-based learning, which is reflective of the role of problem-based learning approach in the development of problem-solving skills in collaborative or peer learning between students.

Facilitating educational strategies such as self-directed learning, reflective practice, problem-based learning and peer learning encourages students to take responsibility for and direct their own learning as adult learners (Morris & Moore, 2006), while reflecting desirable trends in both practice education and professional development (Ääri, Elomaa, Ylönen, & Saarikoski, 2008; Briffa & Porter, 2013; Lerchenfeldt, Mi, & Eng, 2019; Mann et al., 2009; Meo, 2013; Morris & Moore, 2006; O'Donoghue, 2011). Recommendations have been made in the literature, national health service guidelines and health professional body statements for HEIs to explore alternative practice education models which facilitate these educational approaches, including the HSE HSCP 2011 report on the review of the practice education system (HSE, 2011). The present review investigates the different models of practice education primarily in the context of opportunities for student-directed

learning, reflective practice, problem-based learning and peer learning. The advantages and disadvantages of each model are discussed along with the challenges of their implementation.

## **2.3 Models of practice education**

Practice education can be generally divided into a number of different types of models of practice education, or models of supervision. These include individual, collaborative, non-collaborative, mixed-level, interdisciplinary and multiple-mentoring models. Both advantages and disadvantages are associated with each model of practice education, which are summarised in Table 2.1 (Lekkas et al., 2007).

### **2.3.1 Individual (1:1) model**

The individual or 1:1 model remains the most frequently used within practice education in health-related disciplines, despite a lack of evidence to promote it as a ‘gold standard’, which alternative models are required to equal in terms of the outcomes achieved (Lekkas et al., 2007). This model involves the supervision of one student by one practice educator. Advantages and disadvantages of this model are summarised in Table 2.1. A distinct advantage is that the practice educator does not have to divide supervision time between two or more students. Numerous disadvantages have been discussed in the literature, in particular, little opportunity for student autonomy, self-directed learning, reflective practice, peer learning and peer support (Lekkas et al., 2007; Martin, Morris, Moore, Sadlo, & Crouch, 2004; Moore, Morris, Crouch, & Martin, 2003). Concerns regarding the long-term viability of using a 1:1 model due to the over-reliance on the practice educator to

direct and closely supervise student learning and the resource intensive nature of the 1:1 ratio of the model have also been expressed (Rodger et al., 2008).

**Table 2.1 Advantages and disadvantages of 1:1, 2:1 and group models of practice education**

(Beveridge & Pentland, 2020; Lekkas et al., 2007; Martin et al., 2004; Moore et al., 2003; Sevenhuysen, Thorpe, Molloy, et al., 2017; Tai, Molloy, et al., 2016)

	1:1	2:1	Group (>2:1)
<b>Advantages</b>			
Increased opportunity for students to observe educator and be observed/assessed by educator	√		
Educators report 1:1 model is easier to implement and manage	√		
Less impact on ability of educator to maintain workload	√		
Facilitates student autonomy and self-directed learning		√	√
Encourages reflective practice, problem solving and evaluative judgment		√	√
Facilitates peer learning and discussion including peer observation and feedback		√	√
Facilitates peer support, development of confidence and more comfortable learning environment		√	√
Provides opportunities for rehearsal, technique demonstration, sharing, cooperation and teamwork		√	√
Students motivate each other		√	√
Students may increase educator/departments productivity as they gain experience	√	√	√
Educator likely to receive support from department with caseload, particularly earlier in practice education		√	√
<b>Disadvantages</b>			
Students are dependent on educator for learning, may foster passive dependence	√		
No opportunities for peer support, rehearsal, peer learning including peer observation and feedback	√		
Educator may spend more time facilitating learning due to absence of a peer for discussion or practice	√		
Educator may have to maintain a high workload as more educators in a department facilitate students singly	√		
Students and educators may feel that they are not be adequately supervised or observed		√	√
Peer learning may not be optimally facilitated		√	√
Difficulties with student compatibility, differing levels of ability, disruptive competitiveness		√	√
Requirement for increased planning and implementation considerations for educators and department		√	√
Requirement for training for students and educators in peer learning strategies prior to practice education		√	√
Educators may not have sufficient caseload to support increased number of students		√	√
Educators have increased stress and paperwork than for 1:1 model		√	√
Educators likely to require support from department with caseload, particularly earlier in practice education		√	√

### **2.3.2 Collaborative peer learning 2:1 model**

A collaborative peer learning 2:1 model of practice education involves two students working collaboratively under the supervision and guidance of one primary instructor and may be referred to as a 2:1 model (Rindflesch et al., 2009; Zavadak, Konecky-Dolnack, Polich, & van Volkenburg, 1995). The overall advantages of introducing a collaborative peer learning 2:1 model are manifold and are predominantly related to the opportunities for peer learning provided by the model, as summarised in Table 2.1 (Alpine, Caldas, & Barrett, 2019; Baldry Currens & Bithell, 2003; Dawes & Lambert, 2010; Ladyshevsky, 1993; Martin & Edwards, 1998; Martin et al., 2004; Moore et al., 2003; Morris & Stew, 2007; O'Connor et al., 2012; Roberts et al., 2009a; Rodger et al., 2008; Sevenhuysen, Thorpe, Barker, et al., 2017; Tai, Canny, Haines, & Molloy, 2017a; Triggs Nemshick & Shepard, 1996). These include improved student observation and feedback skills (Grundy, 1994; Sevenhuysen et al., 2015), increased opportunity for reflective practice (McPake, 2019; Morris & Stew, 2007; Stenberg, Bengtsson, Mangrio, & Carlson, 2020) and opportunity to practice skills on each other in a safe and supportive environment (Moore et al., 2003; Triggs Nemshick & Shepard, 1996). Self-assessment and peer assessment, or evaluative judgment skills, are also improved (Tai, Canny, et al., 2016). Increased efficiency in practice educator facilitation of students within a pair rather than separately has been reported, resulting in a reduction of repetition, which may address the issue of shortage of clinical placements (Baldry Currens & Bithell, 2003) and provides an opportunity for higher quality interactions between the student and practice educator (Sevenhuysen et al., 2015). Student autonomy is increased and there is a reduced reliance on the practice educator to answer superficial questions, provide social support and constant

supervision, even in the early stages of practice education (Parker & Kersner, 1998; Roberts et al., 2009b; Secomb, 2008).

Perhaps the most commonly reported advantage of a 2:1 model is the social and emotional support that peers may provide to each other during practice education, which is widely considered to be a stressful time for students (Grundy, 1994; Ladyshefsky, 1993; Moore et al., 2003; Roberts et al., 2009a; Stenberg & Carlson, 2015). The importance of this support in providing a safe and comfortable environment for students to learn in has also been reported (Alpine et al., 2019; Baldry Currens, 2003; Dawes & Lambert, 2010; Holst & Hörberg, 2013; Martin & Edwards, 1998; Martin et al., 2004; Moore et al., 2003; O'Connor et al., 2012; Stenberg & Carlson, 2015; Triggs Nemshick & Shepard, 1996). Overall the quality of the student and practice educator experience is improved, without compromising on learning outcomes or patient care (Dawes & Lambert, 2010; Roberts et al., 2009a; Sevenhuysen et al., 2015). The students are also prepared for lifelong learning and for teaching future students themselves when working as healthcare professionals (Tai et al., 2017b).

Disadvantages of the introduction of a 2:1 model include the requirement for increased planning and organisation pre-placement and for the completion of assessment forms for two students (Baldry Currens, 2003; Dawes & Lambert, 2010; O'Connor et al., 2012; Triggs Nemshick & Shepard, 1996). New skills are required of practice educators to work with two students simultaneously, including facilitation of peer learning (Baldry Currens, 2003), which may not always be used optimally (Martin et al., 2004). There is the potential for students being mismatched in personality or ability (Briffa & Porter, 2013; Grundy, 1994) and educator time and caseload must be shared between two students (Dawes & Lambert, 2010; O'Connor et al., 2012). Support from

other staff may also be required (Alpine et al., 2019; Dawes & Lambert, 2010). The political or hierarchical challenges of the introduction of new methods and the promotion of the student position have also been addressed in the literature, resulting in the development of process models in order to lead this change and address governance issues in medicine (Tai et al., 2017b) and occupational therapy (Hanson et al., 2019).

In summary, there are many advantages to using a collaborative peer learning 2:1 model including improved student observation, assessment and feedback skills; increased opportunity for reflective practice, practising of skills and student autonomy; increased educator efficiency and the opportunity for emotional and social peer support. The main disadvantages are related to the planning and implementation of the model. Training for practice educators and students in peer learning techniques are of key importance for the successful implementation of this model and a structured approach to peer learning is essential.

### **2.3.3 Collaborative peer learning group (3:1 or 4:1) model**

A collaborative group model of practice education involves more than two students working collaboratively under the supervision and guidance of one primary instructor and may be referred to as a 3:1 or 4:1 model depending on the number of students (Rindfleisch et al., 2009; Zavadak et al., 1995). Many of the advantages of a collaborative peer learning 2:1 model are also reported for a collaborative group model. A number of systematic reviews on peer learning during practice education do not differentiate between 2:1 and 3:1 student to educator ratios in their discussion of the experience, implementation and learning opportunities of collaborative peer learning



models (Briffa & Porter, 2013; Lekkas et al., 2007; Secomb, 2008; Sevenhuysen, Thorpe, Molloy, et al., 2017; Tai, Molloy, et al., 2016).

In studies which compared 2:1 and 3:1 models, the reported disadvantages of a 3:1 model, while similar to that for a 2:1 model, were more pronounced (Martin et al., 2004; Moore et al., 2003) (Table 2.1). Within a 3:1 model, from a student perspective there is less opportunity for observation by the practice educator; for accurate and detailed assessment and feedback from the practice educator; and greater competition for resources such as patients and physical space. From a practice educator perspective, it is more challenging to supervise three students, dividing time and resources between each student, and assessing, providing feedback and completing paperwork for three students individually (Martin et al., 2004; Moore et al., 2003).

It is already recognised that securing agreement from practice educators to facilitate collaborative models is challenging (Briffa & Porter, 2013; Huddleston, 1999; Sevenhuysen et al., 2014). The opportunities for peer support and peer learning offered by a 2:1 model do not seem to be increased by increasing the number of students in the student to educator ratio, while the challenges of implementation are reported to be increased (Martin et al., 2004; Moore et al., 2003).

#### **2.3.4 Non-collaborative 2:1 model**

There have been reports in the literature of the use of a 2:1 model in which collaborative learning within the student pair is not facilitated (Sevenhuysen et al., 2014). Some peer learning may occur opportunistically, but this is unstructured or unintentional (Tai, Haines, Canny, & Molloy, 2014). In a study comparing a collaborative 2:1 model with a non-collaborative 2:1 model, students and practice

educators considered that the peer learning element within the collaborative 2:1 model provided learning opportunities, but required more flexibility regarding structure and implementation. Because of this, both students and practice educators preferred the non-collaborative 2:1 model, despite the perceived advantages of collaborative learning (Sevenhuysen et al., 2015). The outcomes of this study are further described in Section 2.5.

Students and practice educators typically report lower satisfaction levels with peer models of practice education where peer learning has not been adequately facilitated within the model (Briffa & Porter, 2013; Martin et al., 2004). Within the literature, descriptions of the peer learning engaged in and the frequency of peer learning that was facilitated or occurred, often lack clarity, so it can be difficult to ascertain if a 2:1 model really was collaborative in approach (Sevenhuysen, Thorpe, Molloy, et al., 2017). To optimise learning opportunities, peer learning requires facilitation which provides students with opportunities for both structured (intentional) and unstructured peer learning (Baldry Currens, 2003; Sevenhuysen, Thorpe, Molloy, et al., 2017; Tai, Molloy, et al., 2016).

### **2.3.5 Mixed-level and interdisciplinary peer learning models**

Peer learning may be same-level, where students are in the same year of a professional programme, or mixed-level, also known as near-peer, peer tutoring or peer coaching, which usually involves students from different levels, with students further advanced in a professional programme teaching students in earlier years (Ladyshevsky, 1993, 2010).

Peer learning may also be interdisciplinary with students from different disciplines learning together, or with supervision from a practice educator from a different discipline, which is less commonly observed (Rodger et al., 2008). This type of peer learning is facilitated by similarities in the prescribed competencies and professional skills required by the different HSCPs (CORU, 2019c). Interprofessional working is promoted between students and practice educators of different professions (Dawes & Lambert, 2010). A significant barrier to the use of interdisciplinary peer learning during practice education is the requirement for alignment of the timetabling of practice education components of different HSCP programmes in a single placement setting (Rodger et al., 2008).

#### **2.3.6 Multiple-mentoring model**

Practice education models in which one student is facilitated by multiple practice educators have also been described in the literature (Copley & Nelson, 2012). Advantages include shared responsibility for provision of practice education and the opportunity for part-time professionals to participate. Students are exposed to the practice of multiple educators. Disadvantages include perceived interruption of the practice education experience for students, the requirement for students to adapt to many practice educator facilitation methods and the requirement for increased collaboration between the multiple practice educators for successful planning and assessment of practice education (Lekkas et al., 2007).

### **2.3.7 Summary**

In summary, significant anomalies exist within the literature unfortunately, in the terminology that is used to describe various education models used during practice education and their underlying theories or learning principles, which can make direct comparisons between studies difficult (Ladyshevsky, 2000). For example, the terms collaborative learning, group learning, cooperative learning, peer learning or peer-assisted learning may be used interchangeably, despite being inconsistent in their meaning. Observations may not be generalisable or consistent across practice education placements, models of student supervision or disciplines within the research (Lekkas et al., 2007).

Notwithstanding this, many advantages have been reported of a collaborative peer learning approach in particular, which warrants further investigation of collaborative peer learning models of practice education.

## **2.4 Principles underlying a collaborative peer learning approach**

Definitions of collaborative learning, peer learning, peer observation and peer feedback are presented in Table 2.2. Collaborative learning may also be referred to as cooperative learning and is based on the social interdependence theory (Johnson, Maruyama, Johnson, Nelson, & Skon, 1981). Social interdependence occurs when there is a common goal between group members and the accomplishments of each group member are affected by the others. Positive interdependence occurs when the goal is

shared, so that achievement of the goal is dependent on the actions of all members (Johnson & Johnson, 2005).

Collaborative learning provides the theoretical framework that underpins the concept of peer learning (Smith & MacGregor, 1993). Peer learning may be defined as “to get knowledge through study, experience or teaching of an equal” (Lincoln & McAllister, 1993) (p. 314) or as peers helping each other to learn (Martin et al., 2004). Peer learning may be used as an umbrella term for a learning approach incorporating three individual elements, collaborative learning, peer observation and peer feedback. Peer observation involves one student observing the other student and sharing those observations in an objective manner. Peer feedback involves formative feedback from one student to another. Having a peer to work through the reflective process with can be a very effective learning strategy (Boud & Walker, 1998). Integrating the practice of peer observation and peer feedback into practice education facilitates student-directed learning and evaluative judgement, or the judgment of self and others (Boud et al., 2016; Ladyshevsky, 2000). Peer learning may also be referred to in the literature as peer-assisted learning (PAL), small-group teaching or collaborative learning.

**Table 2.2 Definitions of terms associated with peer learning**  
(CSP, 2002; Lincoln & McAllister, 1993; Martin et al., 2004)

<i>Term</i>	<i>Definition</i>
<b>Collaborative learning</b>	‘indirect teaching in which the instructor identifies the task and organises the students to work out a solution, independently of the educator’ (CSP, 2002, p.22)
<b>Peer learning</b>	‘to get knowledge through study, experience or teaching of an equal’ or peers helping each other to learn (Lincoln & McAllister, p.314)
<b>Peer observation</b>	one student observing the other student and sharing those observations in an objective manner
<b>Peer feedback</b>	formative feedback from one student to another.

## **2.5 Use and implementation of a collaborative peer learning model**

The 1:1 model remains the predominant model of practice education primarily due to the challenges associated with the implementation of collaborative 2:1 or group models. Challenges that have been reported include increased placement pre-planning, increased student supervision, increased practice educator stress levels, potential for student dependency, reduced clinical productivity and decreased caseload management (Baldry Currens, 2003; Briffa & Porter, 2013; Dawes & Lambert, 2010). Persuading practice educators to try a collaborative model can be challenging and pre-conceived negative perceptions of the model are common (Myers, Davis, Thomas, & Bilyeu, 2019). A recent Irish study reported that over 75% of third and fourth year students of an undergraduate degree programme in physiotherapy were facilitated using a 1:1 model during practice education (Barrett et al., 2019). This was despite an initiative by the practice education team to develop and promote a structured approach to a 2:1 model in the years previously (Alpine et al., 2019). While it has been reported that many negative perceptions become positive after experiencing a collaborative model, these challenges require consideration by HEIs in order to encourage and increase facilitation of collaborative models (Myers et al., 2019).

Despite the dominance of the 1:1 model, a pedagogical shift towards a collaborative model in a number of health-related disciplines has become apparent particularly in Australia, Canada, UK and US. The research is predominantly in the disciplines of physiotherapy and occupational therapy (Alpine et al., 2019; DeClute & Ladyshefsky, 1993; Hanson et al., 2019; Ladyshefsky, 2000; Ladyshefsky et al., 1998; Martin et al., 2004; Moore et al., 2003; O'Connor et al., 2012; Sevenhuysen, Thorpe, Molloy, et

al., 2017), but also in speech and language therapy (Briffa & Porter, 2013; Dawes & Lambert, 2010; Held, Roberts, Daly, & Brunero, 2019) and dietetics (Reidlinger et al., 2017; Roberts et al., 2009b). HSCP research on collaborative models of practice education primarily focuses on same-level peer learning.

Within medical education, historically the focus of peer learning was on peer tutoring or peer coaching (mixed-level peer learning). However, in recent years, research has increasingly been published on same-level peer learning (Tai, Molloy, et al., 2016). The introduction of new methods to facilitate students which are perceived to alter the role of students within the hierarchy of the medical profession have been reported as challenging (Tai et al., 2017b). Similarly, in nursing, mixed-level peer learning has been described for over a decade (Holst, Ozolins, Brunt, & Hörberg, 2017; Secomb, 2008). Same-level peer learning has been introduced to education within the profession relatively recently, with much of the research coming from Sweden (Hellström-Hyson, Mårtensson, & Kristofferzon, 2012; Mamhidir, Kristofferzon, Hellström-Hyson, Persson, & Mårtensson, 2014; Stenberg et al., 2020; Stenberg & Carlson, 2015). In both medicine and nursing there has also been a significant increase in the use of simulation within practice education, consisting of specifically created learning environments in which practice education is facilitated and into which peer learning has been integrated (Stone, Cooper, & Cant, 2013; Tai et al., 2014).

One reason for the ongoing challenge of implementing a collaborative peer learning model is the lack of specific guidance for the implementation of the various models of practice education within the literature (Alpine et al., 2019; Briffa & Porter, 2013). Only recently have a small number of frameworks outlining how collaborative learning

within practice education should be implemented been published, with a view to making a collaborative approach more accessible for practice educators. Table 2.3 outlines the core features of these frameworks.

**Table 2.3 Frameworks for the implementation of collaborative peer learning models**

<b>Details</b>	<b>Principles of the framework</b>
<b>Roberts et al.</b> 2009, Australia Dietetics	<b><i>Framework based on 4 central tenets:</i></b> 1. Incremental exposure to tasks 2. Clinical reasoning framework (based on Nutrition Care Process) 3. Structured enquiry group discussion 4. Peer observation & feedback
<b>Sevenhuysen et al.</b> 2013 Australia Physiotherapy	<b><i>Framework consisting of a toolkit of activities for students to complete both with and without practice educator input:</i></b> - Peer feedback book (minimum 2/week) - Practice educator feedback book (minimum 2/week) - Peer observation form (minimum 2/week) - Verbal feedback triad (minimum 1/week) - Case presentation (minimum 3/week at beginning then reduced) - Risk identification (minimum 2/placement)
<b>Lynam et al.</b> 2015 Ireland Dietetics	<b><i>Structured framework for facilitating collaborative learning (2:1 model) in a stepwise manner during a patient consultation:</i></b> - Three scenarios with varying prescribed levels of peer observation and feedback for inpatients (ward-based) and outpatients (clinic-based) - Structured peer observation, scripting and feedback process integrated into the sequential process of a patient consultation
<b>Alpine et al.</b> 2018 Ireland Physiotherapy	<b><i>Supervision framework, adapted from Roberts et al. (2009) &amp; Lynam et al. (2014), based on 4 approaches to learning:</i></b> 1. Incremental exposure to tasks 2. Clinical reasoning framework (based on physiotherapy clinical practice) 3. Peer group discussion (one session per week) 4. Peer observation, scripting & feedback (adapted - Lynam et al. 2015)

One peer learning framework was published prior to the development of the framework used in the present study. It incorporates regular rotation of student pairs, with staged progression of dietetic tasks undertaken within one clinical setting, within the discipline



of dietetics in Australia (Roberts et al., 2009b). A clinical reasoning component is included, based on the nutrition care process model (Hakel-Smith & Lewis, 2004) (Table 2.3). However, a number of differences exist between the peer learning framework recommended and practice education in dietetics in Ireland including, rotation to geographical locations including hospital and primary care (community) settings, the prescriptive nature of the incremental exposure to tasks, a known requirement for a more structured feedback process and that the nutrition care process was not yet widely implemented into dietetic practice in Ireland. For these reasons, this model did not provide a feasible framework for implementing a 2:1 model in the Irish setting at the time. One example of this is that changing practice education site mid-placement has been reported to impact on student case-mix allocation (simple versus complex) requiring flexibility in approach to student task distribution (Hughes & Desbrow, 2010).

The outcomes of a pilot study using the framework (Roberts et al., 2009b) are reviewed in Table 2.4. In summary, the researchers concluded that it is possible to increase both efficiency & quality of student and practice educator experience during practice education, without affecting student attainment of professional competence. However, changes to the framework were recommended for consideration, including adaptation for students from a non-English speaking background, accelerated build-up of tasks, reduced frequency of presentations, more opportunity for practice educator observation, greater support of practice educator from the clinical department, and more comprehensive feedback on student progress to subsequent practice educators (Roberts et al., 2009a).

**Table 2.4 An existing framework for implementation of a collaborative peer learning 2:1 model (Roberts et al. 2009)**

Study details	Outcomes	Discussion/Commentary
<p>Historical control study Dietetics, Australia.</p> <p>Study Aim: To pilot &amp; evaluate a new model of clinical dietetics education to address the sustainability of dietetic placements in the clinical setting.</p> <p>Final year dietetics students of undergraduate &amp; MSc dietetics programmes (n=14) completed pilot programme 9 weeks PPE (data was 'snapshot' from final 4 weeks).</p> <p>2 services within a large tertiary referral teaching health service.</p> <p>Anonymous self-reported</p>	<p><i>Activity Analysis</i> Pilot study data compared with data from 3 previous years. Increased total student hours (24-36%) Decrease in student supervision hours (16%) – although significant difference between 2 services (linked to significant difference in number of non-English speaking background - NESB students)</p> <p><i>Student &amp; PE perceptions of quality of PPE - questionnaires</i> Students in pilot programme more positive in 14 statements, students in existing programme more positive in 1 statement. Overall positive trends in responses from PEs but not as marked as for students.</p> <p><i>Post placement debriefing sessions</i> PEs reported pilot programme was well structured &amp; planned. Students reported programme structure added pressure but helpful. PEs requested more advice on managing 2:1 supervision, closer to PPE period. PEs had mixed response to 2:1 supervision, with the advantage of a reduced supervision time earlier in PPE, but disadvantages of trying to observe/assess two students, provide enough patients, citing extra work was created for them when students were seeing patients from other dietitians caseloads. PEs reported difficulty managing unevenly matched students, advised considering pairing student by level of skill development. Students liked working in pairs, but</p>	<p>Researchers conclude that it is possible to increase both efficiency &amp; quality of student and PE experience during PPE, while still maintaining student outcomes.</p> <p>Author discusses the over-representation of NESB students (21% versus 8% in previous year), all of these students required extra placement time, whereas no other students did.</p> <p>Students in pilot programme noted to be more positive about key pedagogical aspects of their experience, including clarity of expectations, use of learning goals, encouragement of self-directed study, provision of feedback on progress, valuing of self-evaluation &amp; learning about clinical decision making.</p>

<p>surveys within one week of completion of PPE by PEs and students (Likert scale, statement of agreement).  13 students &amp; 33 PEs – pilot programme (2007)  13 students &amp; 34 PEs - existing programme (2006)  Staff &amp; student activity statistics  (from standard hospital records).  Student achievement outcomes, qualitative data from post-pilot debriefing sessions with students &amp; PEs.</p>	<p>recognised difficulties further on in placement, as caseloads increased, if there were differences in ability.  PEs reported that with the build-up of tasks students became comfortable talking to patients more quickly, but there were too few opportunities for students to manage the complete process, stronger students may be held back.  Students liked the build-up of tasks but some reported that it was too slow.  Students reported clinical reasoning framework case studies were useful.  PEs reported students were working more independently &amp; more able to self-directing their learning, but seemed to take longer developing their skills.  PEs &amp; students reported more opportunities for students to observe experts required.  Group discussions were reported to be useful overall for students &amp; PEs, but requirement of daily presentations in first 3 weeks was too time-consuming &amp; disruptive to PPE schedule. Usefulness was increased once students were given specific guidelines.  Students reported peer feedback to be as valuable as PE feedback, but that PE feedback is still essential. Some PEs reported deficiencies not identified in peer feedback.  PEs reported that weekly assessments were more stressful for students as they had fewer opportunities to demonstrate performance to their PE than in the traditional model.</p>	<p>Difficulties in implementing a change in PPE noted, particularly for PEs who had to ‘unlearn’ previous methods, but not for students, who had never experienced PPE before.  Considerations to be made on refining the model including consideration of NESB students, accelerated build-up of tasks, reduced frequency of presentations, more opportunity for expert observation, greater support of PE from department, enhanced feedback on student progress to PEs.  The researchers note that the specific approaches &amp; techniques relied on in the innovative model, particularly peer observation &amp; feedback, the clinical reasoning framework &amp; reflective group discussion should be further developed &amp; integrated into the university teaching programme.</p>
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Abbreviations: PE – practice educator, PPE – practice placement education, NESB - non-English speaking background

Two collaborative peer learning frameworks have been published subsequently to the development of the Lynam framework. The first of these consisted of six specific peer learning activities which were completed in addition to regular student activities (Sevenhuysen et al., 2014) (Table 2.3). Students were divided into one group using a collaborative 2:1 model and another group using a non-collaborative 2:1 model. In the second group peer learning was not facilitated. Interestingly, despite similar competency scores between the two groups, 81% of students preferred a non-collaborative 2:1 model and no practice educators agreed to facilitate the collaborative 2:1 model again without a review of the peer learning component. This may be due to the fact that the peer learning activities were essentially an ‘add-on’ rather than an integral part of the collaborative 2:1 practice education model. The researchers reported that use of the peer learning activities did not reduce access to other learning activities (there was no significant differences between the two groups in other elements of practice education measured), and suggested that students may have been completing the peer learning activities during their unsupervised time, for example while waiting for their practice educator for direction. The very marked preference for the non-collaborative 2:1 model may not have been seen if peer learning activities were refined and incorporated to a greater extent into the collaborative 2:1 practice education model, as was reported in a follow up qualitative study into the results of the original study (Sevenhuysen et al., 2015).

The latter 2:1 framework was developed by Alpine *et al.* (2019), to inform the introduction of a 2:1 collaborative peer learning model into practice education within physiotherapy in Ireland. It consists of components merged from the frameworks by Roberts *et al.* (2009a) and Lynam *et al.* (2014) and adapted to create a framework

suitable for use in the undergraduate physiotherapy programme (Table 2.3). The use of a 2:1 model using the framework was positively evaluated by participants, with no significant differences between students and practice educators. Advantages of the 2:1 model reported were shared learning experiences and peer support during practice education and the development of assessment and feedback skills in students. The peer observation scripting process, adapted from Lynam et al. (2015) represented a significant component of the framework, and was found to facilitate reflection, self-evaluation and peer review. The researchers recommended clear guidance for students and practice educators on the facilitated peer feedback process (Alpine et al., 2019; Barrett et al., 2019).

In summary, in order to address challenges reported to be associated with the implementation of collaborative 2:1 or group models, a small number of frameworks outlining how collaborative learning within practice education should be implemented have been published. One of these frameworks, by Roberts et al. (2009) was published prior to the development of the Lynam framework but did not provide a feasible framework for implementing a 2:1 model in the Irish setting at the time. Two subsequent frameworks have been published. The first was negatively evaluated overall by students and practice educators, thus requiring modification (Sevenhuysen et al., 2014). The second, which was based on a combination of the Roberts *et al.* (2009) framework and the Lynam *et al.* (2015) framework, was positively evaluated by students and practice educators (Alpine et al., 2019).

## **2.6 Outcomes from research into collaborative peer learning 2:1 models**

When examining models of practice education, it is vital to critically evaluate which model or models are most effective at achieving the required outcomes of practice education. The feasibility of the implementation of these models also requires consideration. This review of published outcomes using a collaborative peer learning approach was focused on studies examining same-level, same-discipline peer learning, with a student to educator ratio of two to one (2:1). Research within HSCPs, nursing and medicine were included. While little published literature is available in the dietetics setting (Reidlinger et al., 2017; Roberts et al., 2009a), it seems reasonable to extrapolate the findings from similar health-related disciplines to the dietetics setting. Some studies included may not have excluded mixed-level peer learning, but were included for their contribution to same-level peer learning research (Secomb, 2008). Similarly, while this research was focused on a collaborative peer learning 2:1 model (hereafter, a 2:1 model), some studies which may also have discussed outcomes of group collaborative models, for example 3:1 or 4:1, were included, in order not to exclude the outcomes from the 2:1 model component. (Briffa & Porter, 2013; Lekkas et al., 2007; Martin et al., 2004; Moore et al., 2003; Sevenhuysen, Thorpe, Molloy, et al., 2017; Tai, Molloy, et al., 2016).

Five systematic reviews have been published investigating 2:1 models within HSCP disciplines (Baldry Currens, 2003; Briffa & Porter, 2013; Lekkas et al., 2007; Secomb, 2008; Sevenhuysen, Thorpe, Molloy, et al., 2017) and one within medicine (Tai, Molloy, et al., 2016). All authors cited difficulties and limitations in drawing conclusions from the literature due to the overall heterogeneity of the evidence,

including study type and design, lack of detail about the intervention implemented and research participants and little standardisation of the research questions asked. Most studies used descriptive and qualitative research methods (Secomb, 2008). This is not surprising given the influence of human behaviour within educational research (Secomb, 2008). Most studies included a significant amount of self-reported data; such data are acknowledged to be subject to bias (Tai, Molloy, et al., 2016).

Very broadly, the findings of these reviews indicate that a 2:1 model appears to be an effective model of practice education, which is underpinned by recommended learning approaches. The model promotes the development of professional skills and competencies in students, including improved student observation, assessment and feedback skills. There is an increased opportunity for reflective practice, practising of skills, student autonomy and emotional and social peer support. There were no reports of students with specific learning styles or traits being more amenable to using a 2:1 model. Use of the model may result in practice educator efficiencies. Disadvantages seem to be predominantly related to the challenges of preparing students and practice educators and implementation challenges, with sub-optimal implementation of the model likely to decrease perceived advantages of and participant satisfaction with the model. Interestingly, the reviews reported varying levels of preparation of students and practice educators for using a 2:1 model, ranging from no extra preparation to a short preparation session. Many studies did not report on participant preparation, while with the exception of Sevenhusen *et al.* (2017), none gave significant details of preparation undertaken with participants for using the 2:1 model (Baldry Currens, 2003; Briffa & Porter, 2013; Lekkas et al., 2007; Secomb, 2008; Sevenhuysen, Thorpe, Molloy, et al., 2017; Tai, Molloy, et al., 2016). One of the aims of the current study was thus to

explore student and practice educator perceptions of their preparation for the the 2:1 model and ultimately the implementation of the model, as a result of the identification of this gap in the literature.

Baldry-Currens (2003) reviewed ten studies from disciplines of physiotherapy and occupational therapy. These were mostly cohort studies and case reports of same-level peer learning. In terms of attitude towards and practability of a 2:1 model, almost half of the studies included reported initial practice educator reluctance to use a 2:1 model and bias in favour of a 1:1 model. Within these, anticipated difficulties were not always realised and success depended on the ability and confidence of the practice educator. One study reported that 68% of educators believed that a 2:1 model offered a better learning experience, but 63% reported it was more difficult to implement and success was based on understanding and use of peer learning strategies rather than previous practice education experience. While managing student relationships was discussed in three studies, only one study reported a breakdown in one out of three student pairs (of note this was the only mixed-level peer learning pair in the study). Only two studies recommended matching students according to academic profile and compatability. In terms of service delivery issues and resource implications, half of the studies reported that caseload delegation increased quality of student supervision and learning; however, resourcing challenges of doing this were reported. This was very much related to student stage of placement with more external support required for students earlier in placement and educators seeking extra patients to add to their caseload for the two students to work with. Seven studies reported that students appreciated peer learning opportunities offered by a 2:1 model and the benefits of a shared learning experience, which were discussed in detail. Some disadvantages were also discussed, including



potential for favouritism and comparison, lack of individual assessment, sharing of scarce resources and the potential for one student to be waiting while the educator works with the other student. The author commented that while there was an overall lack of studies, with a limited number of authors and institutions, there was adequate evidence to promote a 2:1 model as a viable model of practice education.

The systematic review by Lekkas et al. (2007) included 61 studies, approximately half of which were on physiotherapy students, with the remainder on occupational therapy, speech and language therapy and social work students. Advantages reported included increased placement numbers, increased productivity, student preference, enhanced clinical competence, active learning, sharing, cooperation, teamwork and clinical independence and support and ownership of the learning experience. Disadvantages discussed included that students feared inadequate supervision, potentially not feasible in restricted areas (e.g. intensive care), limited availability or variety of patients, competition or compatibility issues between students, increased educator stress and more paperwork. Overall recommendations for implementation included organisation and planning pre-placement by the placement site and HEI and facilitation of peer learning strategies by educators to optimise students' collaborative learning experience. Educators need to share a majority of their caseload amongst the students and ensure equal time is given to each student, while care is required to provide both individual and collaborative learning experiences during practice education. The requirement to pre-match students should be considered. The authors of the review concluded that there was inconclusive evidence overall to support one model of practice education over another.

Twelve studies met the inclusion criteria for the systematic review by Secomb (2007), from the disciplines of nursing, physiotherapy and occupational therapy. Not all peer learning was same-level and studies were mostly descriptive qualitative research. The most reported outcomes, in descending order, were an increase in cognitive development, a positive impact on clinical skills development, satisfaction with the learning experience, with students reporting increased self-confidence, autonomy, clinical reasoning, self-evaluation and collaboration with their peer. Two studies reported student concerns with incompatibility of peer (one was mixed-level peer learning) and dislike of competition for learning opportunities and educator time. Three studies reported that pre-placement education on student and educator roles in peer learning increased students' learning outcomes from peer learning. The author of the review noted that a significant limitation of the review was the considerable heterogeneity within the studies, concluding that while the results are not statistically significant, every study reported that peer teaching and learning facilitated student achievement of learning outcomes. The author recommended serious consideration of a peer teaching and learning intervention during practice education.

The systematic review by Briffa and Porter (2013) included 17 studies within the disciplines of speech and language therapy, occupational therapy, physiotherapy, nutrition and dietetics, social work and psychology. Thirteen studies were based on a 2:1 model, while four were based on multiple models of up to 4:1. A significant finding of this review was that only five studies reported that participants received training in a collaborative learning model prior to its implementation. The overall finding was that educators and students perceived the collaborative model positively. A key theme reported was the requirement for support and training for educators to

facilitate students using a collaborative model, with disadvantages of the model likely to be perceived by students who did not experience appropriate supervisory strategies. The main advantages reported were that students were less dependent on the educator and saved more complex questions for them, the opportunity to practice clinical skills and techniques on each other, an enhanced learning environment due to the availability of peer support, the opportunity for peer learning, increased confidence and enhanced participation. Principle disadvantages reported included increased administrative workload for educators, insufficient time for educators to provide students with individual supervision and feedback, insufficient physical resources to accommodate an increased number of students, challenges for educators to manage unevenly matched students, a negative impact on the educator relationship development with individual students and the potential for negative competition or incompatibility between students. Advantages and disadvantages were consistent across disciplines. The author concludes that current evidence supports implementation of a collaborative model in this context and that findings are consistent with Baldry-Currens 2003 and Lekkas et al. 2007. However, conclusive evidence for the superiority of this model is lacking, due to the limitations of available research. Independent, rigorous research is required to provide a solid-evidence base for the implementation of the collaborative model in practice.

A more recent review by Sevenhuysen *et al.* (2017) included 28 studies, from occupational therapy, physiotherapy, speech and language therapy and nutrition and dietetics. While most studies referred to 2:1 models, a number included research on multiple student models up to 4:1. Nine studies were quantitative research. Key themes were related to educator (18 studies) and student (21 studies) perceptions of the collaborative model. Enhanced student autonomy and learning opportunities, including

reflection and feedback skills were reported, and also that mutual support from a peer increased confidence. Sixteen studies reported improved educator efficiency and productivity, with 12 of these also reporting increased time burden associated with duplicate feedback, documentation and assessment. Reduced time efficiency was reported by five studies and reduced opportunity for individual student supervision to each student and destructive peer relationship issues were reported by two studies. Similar to the Briffa and Porter (2013) review, only a quarter of studies reported that educators received any training in peer learning, while no study reported that students received training in peer learning or gave details of any training, despite previous recommendations that this training should be provided. The authors recommended training for students and educators in the theory and use of peer learning along with adequate placement planning and student orientation.

Finally, the systematic review by Tai (2016) included research from the discipline of medicine only, with 43 students meeting the inclusion criteria. Reported benefits for learning included increased ability to reflect, increased confidence in own abilities (self-efficacy), increased motivation to participate, greater problem-solving skills, greater evaluative judgement skills, increased, more immediate feedback from more perspectives, useful in navigating the practice education environment and maximising learning opportunities, development of sense of responsibility for peers development and progress, creation of a supportive environment for learning , improved communication and behaviour change strategy skills, improved procedural skills for peer in teaching role, improved feedback and teaching skills, development of empathy for patients (via role-play) and each other through sharing experiences and peer discussion and rapport-building between students in a non-threatening, non-competitive

environment (peer support). Reported benefits for educators included the development of education skills, e.g. facilitating discussion and feedback, availability of an alternative source of feedback on student performance. However, it was noted that with students likely to rate fellow student performance higher than educators, the role of the educator in assessment is not replaceable by peer assessment. Educator workload was found not to be reduced with educators still required to facilitate discussion or initially train the peer teachers; however, the educator role became more satisfying from an educational perspective. A number of caveats were included by the authors in forming strong conclusions based on the studies included in review. Firstly, clear guidelines for peer learning activities are required, including on peer assessment and provision of feedback. For peer feedback to be aligned with educator feedback, understanding of the standards by which they were marking their peers was required (i.e. competency criteria). A small proportion of students felt uncomfortable being assessed by their peers, or were hesitant to give negative feedback to their peers, or to themselves (self-assessment) in front of their peers. Expert or educator feedback was more highly regarded than peer feedback by some students. The author concluded that overall, there is an increased interest in same-level peer learning within medical education (53% of studies since 2010). There is clear evidence of benefits of peer learning beyond knowledge gain and technical skills. Educator efficiency may improve with increased familiarity with peer learning. A specific tool or framework for engaging in peer learning, particularly peer feedback is likely to make peer learning more accessible for students and to encourage the facilitation of peer learning. Ultimately, peer learning could be integrated across all practice education for medical students and for optimal learning outcomes, educators and students should be trained in peer learning prior to practice education and participation in peer learning included in student assessment.

In terms of research outcomes, surprisingly only two studies measured the impact of a 2:1 model on student attainment of professional competence. One early study compared a 2:1 model to a 1:1 model (DeClute & Ladyshevsky, 1993) while a more recent study compared a collaborative 2:1 model to a non-collaborative 2:1 model (Sevenhuysen et al., 2014). Both were within the discipline of physiotherapy.

In the earlier study, the outcome measures of clinical competence were reported as a weighted score from the Evaluation of Clinical Competence form used by the University of Toronto. Students in the 2:1 collaborative group received significantly higher scores for all seven clinical competencies measured, when compared to those in the 1:1 group ( $p < 0.05$ ). Of the seven clinical competencies, the four deemed to require a higher level of clinical judgement, i.e. patient evaluation, programme planning, implementation of treatment and professional behaviour, improved significantly. It is the only published study to compare attainment of competence between students using a 1:1 model and students using a 2:1 model (DeClute & Ladyshevsky, 1993).

The later study reported no significant difference in student attainment of competence between a collaborative and non-collaborative 2:1 model, as measured using the standard assessment form by a blinded assessor, the supervising practice educator and in self-assessment by the student (Sevenhuysen et al., 2014). The peer learning element of the collaborative 2:1 group comprised six peer learning activities as described in Table 2.3. Peer learning was not facilitated in the non-collaborative 2:1 model. The outcomes of this research have been previously described in Section 2.5. In summary, although the collaborative 2:1 model was reported to have merit, it requires

modification and was not well received by students or practice educators, with overwhelming preference for a non-collaborative 2:1 model. (Sevenhuysen et al., 2014).

A number of qualitative studies have also included findings that student competencies in team working (Baldry Currens & Bithell, 2003; Moore et al., 2003), communication (Lincoln & McAllister, 1993; Moore et al., 2003; Morris & Stew, 2007) and knowledge and practice (Lekkas et al., 2007; Triggs Nemshick & Shepard, 1996) were reported to be improved from a collaborative approach within a 2:1 model.

In summary, a 2:1 model appears to be an effective model of practice education, which is underpinned by recommended learning approaches. The model promotes the development of professional skills and competencies in students and may result in practice educator efficiencies. Disadvantages seem to be predominantly related to the challenges of preparing students and practice educators and implementation challenges (Baldry Currens, 2003; Briffa & Porter, 2013; Lekkas et al., 2007; Secomb, 2008; Sevenhuysen, Thorpe, Molloy, et al., 2017; Tai, Molloy, et al., 2016). Overall, there is a lack of robust, well-structured research to support the use of 2:1 models during practice education (Lerchenfeldt et al., 2019; Myers et al., 2019). Of note, there are only two studies evaluating the impact of a 2:1 model on student attainment of professional competence published.

## 2.7 Conclusion

Practice education represents an integral component of HSCP programmes. A number of models of practice education have been reviewed in the context of the opportunities that they provide for learning approaches such as student-directed learning, problem-based learning and reflective practice. A review of the literature suggests that a collaborative peer learning 2:1 model may be most effective at achieving the required outcomes of practice education. There are many advantages to using such a model, including improved student observation, assessment and feedback skills; increased opportunity for reflective practice, practising of skills and student autonomy; increased educator efficiency and the opportunity for emotional and social peer support. The main disadvantages are related to the challenges of planning and implementing the model. In order to address these challenges, a small number of frameworks outlining how collaborative learning within practice education should be implemented have been published. With careful planning, potential barriers to using a 2:1 model are reported to be surmountable, with the advantages making this effort worthwhile. More research on the use of 2:1 models is required, particularly to evaluate the impact of a 2:1 model on student attainment of professional competence.



## **CHAPTER 3: METHODS**

### **3.1 Purpose of the study**

The purpose of this study was to explore the implementation and use of a collaborative peer learning 2:1 model of practice education in dietetics education using a specifically developed framework. The perceived impact of the 2:1 model on the attainment of professional competence and professional skills required of dietetic students during practice education was examined, from both the practice educators' and students' perspectives.

### **3.2 Research aims and objectives**

The aim of this research was to investigate the use of a collaborative peer learning 2:1 model of practice education within the discipline of dietetics in an Irish setting. The following objectives were set to achieve this aim:

- To establish students' and practice educators' opinion on the impact of peer learning (collaborative learning, peer observation and peer feedback) within a 2:1 model on attainment of professional competence during practice education
  
- To identify students' and practice educators' opinions on whether a 2:1 model facilitated the development of professional skills required of dietetic students during practice education

- To gain insight into students' and practice educators' perceptions of the impact of a 2:1 model on their experience of practice education
  
- To explore students' and practice educators' perceptions of their preparation for, and implementation of, a 2:1 model during practice education

### **3.3 Mixed-methods study design**

This research is a longitudinal study with a mixed-methods research design (Creswell, 2010; Ivankova, Creswell, & Stick, 2006). This research design was deemed the most appropriate to answer the specific research question. As part of the planning of this research, a preliminary study was undertaken, which resulted in the development of a framework to guide the wider implementation of a 2:1 model (Lynam et al., 2015).

Within the longitudinal study, a cohort of students was followed over three years and data were collected at three time points. Thus the study followed a sequential explanatory design (Creswell, 2010), which consists of two separate phases, quantitative followed by qualitative as illustrated in Figure 3.1 and described by Bazeley (2010). The role of the qualitative component of the research was to explain the quantitative findings which could not otherwise be interpreted. Quantitative and qualitative data were given equal weighting, i.e. the qualitative data are equally important as the quantitative data in this study (Elo & Kyngäs, 2008). Quantitative data were collected using self-designed questionnaires at three time points for students and two time points for practice educators. Qualitative data were collected at two time points for practice educators and students.

Students

Practice Educators

Professional Practice Studies Module

Timepoint A

Questionnaire  
n=15

Practice Placement B

Timepoint B

Questionnaire  
n=15

Questionnaire  
n=25

Interview  
n=6

Interview  
n=7

Practice Placement C

Timepoint C

Questionnaire  
n=15

Questionnaire  
n=23

Interview  
n=5

Interview  
n=7

Figure 3.1 Study Design

### **3.4 Student and educator preparation for participation in a 2:1 model**

All students and educators due to participate in a 2:1 model of practice placement education received comprehensive training on the theory of peer learning within a collaborative model and the opportunity to rehearse the practical application of a 2:1 model, prior to the commencement of practice education using the model. The details of this training are described in Chapter 1, Section 1.6, while the schedule for the training of students and educators using the 2:1 model is available in Appendix 9.

### **3.5 Quantitative phase (questionnaire)**

#### **3.4.1 Questionnaire design**

The study questionnaires were designed to assess the impact of the three individual components of peer learning (collaborative learning, peer observation and peer feedback) on the attainment of five professional competencies and six professional skills during practice education. All five questionnaires are included in Appendix 7. The design of the questionnaires was based on that of the Practice Placement B and Practice Placement C assessment forms (Appendix 3). The questionnaires were divided into two parts:

Part one of the questionnaires consisted of a series of Likert-style questions divided into sections according to the performance indicators to which they referred, under each of the five professional competencies: ‘knowledge and practice’, ‘professionalism’, ‘communication’, ‘team working’ and ‘service delivery’ (Appendix 3). All questions under these five headings in part one of each questionnaire were taken directly from the

Placement B or Placement C assessment form, as appropriate. A five-point Likert scale was used, with the lowest score correlating with the strongest agreement. The professional competencies are defined within the competency criteria which must be met to successfully complete the practice education component of the undergraduate BSc Human Nutrition and Dietetics programme (Crehan et al., 2010). The final section in the first part of the questionnaires included questions on six professional skills required of dietetic students: ‘active listening’, ‘demonstrating empathy’, ‘clinical reasoning’, ‘developing confidence’, ‘rehearsal’ and ‘reflective practice’ at three time points. Unlike the questions for the five professional competencies, these questions are not taken from the assessment forms. Instead, they were developed by the PEC in conjunction with the programme director, based on previous research into professional competencies, desired learning outcomes from practice education and predicted development in professional competency criteria within the Dietetics profession (Bowles, 2008). All questions in the first part of the questionnaires were repeated for all three components of peer learning (collaborative learning, peer observation and peer feedback).

The second part of the questionnaires consisted of a series of Likert-style questions on the implementation of the 2:1 model. Similar to the process for the development of questions for the professional skills section of part one of the questionnaire, the questions in part two of the questionnaire were developed by the PEC and thesis supervisors based on the research question and a comprehensive literature review of 2:1 models of practice education across the healthcare disciplines. All questions in this section used the umbrella term of ‘peer learning’ to represent the three individual components of peer learning (collaborative learning, peer observation and peer

feedback); therefore, the questions were not repeated three times, as was the case in part one.

Questionnaires were piloted with three American students who had no prior knowledge or experience of peer learning, but who had undertaken the Professional Practice Studies Module, although they were not intended to proceed to Placement B. This was to establish face validity as is recommended in the literature (Gravetter & Forzano, 2012). The questionnaires were redrafted, to include definitions for peer learning, collaborative learning, peer observation and peer feedback. The three students were asked for feedback on the redrafted questionnaires. The inclusion of the definitions was positively received and the questionnaires were finalised.

Student questionnaire design was similar for all three time points to allow for comparison between the three time points. The design of the practice educator questionnaire was similar, with more of an emphasis on facilitation of the 2:1 model in part two of the questionnaire. Three practice educators from the pilot study, who were not going to be facilitating students that year, were asked to review the practice educator questionnaire and give feedback, in order to increase the rigour of the questionnaires by ascertaining content validity of the questionnaires (Lawshe, 1975). The design of the questionnaire, which closely follows the professional competencies outlined for the BSc programme, also increases the content validity of the questionnaires as a quantitative research tool (Gravetter & Forzano, 2012).

### **3.4.2 Data collection**

#### Timepoint A

Timepoint A of data collection involved inviting all students to complete a questionnaire following the Professional Practice Studies Module and prior to Placement B. All interested students were given a student participant information leaflet (Appendix 6). The first questionnaire was administered to student participants by a gatekeeper in a class setting, upon completion of the module and before embarking on Placement B. It was not possible to collect this type of baseline data from practice educators due to insufficient time between allocation of students to practice educators and commencement of Placement B.

#### Timepoint B

Timepoint B of data collection involved the administration of questionnaires after Placement B to students and practice educators willing to participate in the study, via a gatekeeper. All interested practice educators were given a practice educator participant information leaflet (Appendix 6).

#### Timepoint C

Timepoint C of data collection involved the administration of questionnaires after Placement C to students and practice educators willing to participate in the study, via a gatekeeper.

### Timeline for data collection

Timepoints A, B and C of data collection of this research work took place between September 2013 and April 2015. Data collected at Timepoint A preceded students undertaking Placement B, at Timepoint B was post Placement B and at Timepoint C was post Placement C, all within the undergraduate programme (Figure 3.2).



<b>Timepoint</b>	<b>Procedure</b>		<b>Product</b>
<b>Timepoint A</b>	<b>Students</b>	<b>Educators</b>	
<b>Quantitative Data Collection</b>	Pre-PPB Student Questionnaire Classroom-based survey n=24, Response Rate 100% Data Screening, Frequencies, comparisons IBM SPSS statistics for Windows	Not Applicable  Version 25 software	Numeric Data  Descriptive Statistics
<b>Timepoint B</b>			
<b>Quantitative Data Collection</b>	Post-PPB Student Questionnaire Classroom-based survey n=22, Response Rate 95.7% Data Screening, Frequencies, comparisons IBM SPSS statistics for Windows	Post-PPB Educator Questionnaire Email-based survey n=25, Response Rate 18.5% Version 25 software	Numeric Data  Descriptive Statistics
<b>Case Selection: Interview Protocol Development</b>	Purposeful sampling of 2 x 3 participants based on response typified as high, medium or low degrees of satisfaction  Developing interview questions	Purposeful sampling of 3 x 3 participants based on response typified as high, medium or low degrees of satisfaction	Cases: Students n=6 Educators n=7  Interview Protocol
<b>Qualitative Data Collection</b>	Post-PPB Student Interviews Individual face-to-face interviews with six participants n=6, Response Rate 100%	Post-PPB Educator Interviews Telephone interview with seven participants n=7, Response Rate 77.8%	Text data (interview transcripts, written notes - interviewer)
QSR International NVIVO for Windows V. 12 software			
<b>Timepoint C</b>			
<b>Quantitative Data Collection</b>	Post-PPC Student Questionnaire Classroom-based survey n=15, Response Rate 94% Data Screening, Frequencies, comparisons IBM SPSS statistics for Windows	Post-PPC Educator Questionnaire Email-based survey n=23, Response Rate 17.2% Version 25 software	Numeric Data  Descriptive Statistics
<b>Case Selection: Interview Protocol Development</b>	Purposeful sampling of 2 x 3 participants based on response typified as high, medium or low degrees of satisfaction  Developing interview questions	Purposeful sampling of 3 x 3 participants based on response typified as high, medium or low degrees of satisfaction	Cases Students n=6 Educators n=8  Interview Protocol
<b>Qualitative Data Collection</b>	Post-PPC Student Interviews Individual face-to-face interviews with eight participants n=5, Response Rate 83.3%	Post-PPC Educator Interviews Individual telephone interviews with eight participants n=7, Response Rate 77.8%	Text data (interview transcripts, written notes - interviewer)
QSR International NVIVO for Windows V. 12 software			

**Figure 3.2 Outline of Data Collection and Processing** (adapted from Creswell, 2010)

### 3.4.3 Data analysis

Data analysis processes indigenous to mixed methods research have been described in detail in the literature (Teddlie & Tashakkori, 2010). The quantitative questionnaire data for each participant category were analysed descriptively, using the quantitative analysis software package IBM SPSS statistics for Windows Version 25.

Only the fifteen students who were facilitated using a 2:1 model during both Placement B and Placement C and completed questionnaires at all three time points, were included in the study, in order to keep the data clean. Twenty five educators from Placement B who completed questionnaires at Timepoint B and twenty three educators from Placement C who completed questionnaires at Timepoint C were included in the study.

Due to the relatively small sample size, data from the five-point Likert scale used in the questionnaire were translated into a three-point Likert scale, with the lowest score correlating with the strongest agreement. 1=strongly agree and 2=agree became 1=agree; 3 remained neutral and became 2; 4=disagree and 5=strongly disagree became 5=disagree.

For part one of the questionnaire, ordinal data were collected at three time points for students and two time points for practice educators from the three variables tested; collaborative learning, peer observation and peer feedback. For questions pertaining to the attainment of the five professional competencies, each figure presents the median and interquartile range of all answers to questions for a specific professional competency: 'knowledge and practice', 'professionalism', 'communication', 'team working' and 'service delivery'. For example, in the first questionnaire, which students

completed prior to Placement B, within part one, the median of questions 1-27 was used as a score for ‘knowledge and practice’, questions 28-38 for ‘professionalism’, questions 39-47 for ‘communication’, questions 48-49 for ‘team working’ and questions 50-51 for ‘service delivery’. For questions pertaining to the development of the six professional skills, each figure presents the median and interquartile range of a single answer to a single question regarding the development of a defined professional skill (see questionnaires in Appendix 7). Peer learning was derived from an average score of collaborative learning, peer observation and peer feedback. For example, using the first questionnaire to illustrate this, the score for peer learning for ‘knowledge and practice’ was a composite score derived from the mean of the median scores of questions 1-27 for collaborative learning, peer observation and peer feedback.

For part two of the questionnaire, ordinal data were collected from the single variable tested, peer learning, at all timepoints. Each figure presents the median and interquartile range of a single answer to a single question regarding the implementation of the 2:1 model (see questionnaires in Appendix 7).

For students, a Wilcoxon signed-ranks test was used to compare the responses for the variables tested between the three time points. This non-parametric paired comparison test was used to determine if there were significant differences between learning scores among students at Timepoint A, Timepoint B and Timepoint C. The Z-score is the Wilcoxon statistic score and the p-value determines if the Z-score is significant. If the p-value is below 0.05, it is considered statistically significant (Portney & Watkins, 2009).

For practice educators a Mann Whitney U test was used to compare the responses for the variables tested between practice educators at two time points. This non-parametric unpaired comparison test was used to determine if there were significant differences between learning scores for between Placement B educators at Timepoint B and Placement C educators at Timepoint C. The Z-score is the Mann Whitney U test statistic score and the p-value determines if the Z-score is significant. If the p-value is below 0.05, it is considered statistically significant (Portney & Watkins, 2009).

For comparison of responses between the participant categories, a Mann Whitney U test was used to compare the responses for the variables tested between students and practice educators at two time points. This non-parametric unpaired comparison test was used to determine if there were significant differences between learning scores between students and Placement B educators at Timepoint B, and between students and Placement C educators at Timepoint C (Portney & Watkins, 2009).

### **3.5 Qualitative phase (interview)**

#### **3.5.1 Interview design**

Interviews were chosen as the most appropriate method of gathering qualitative data in this mixed-methods research study. Interviews are the most common method of collecting qualitative data and were chosen over focus groups in order to capture the individual experiences of students and practice educators (Frey & Fontana, 1991; Vaughn, Schumm, & Sinagub, 1996).

A significant limitation to qualitative data collection had been imposed by the ethics committee that had reviewed the application for ethical approval of this study, in order to reduce the potential for bias due to the dependent relationship between the principal investigator and the interviewees (Section 3.6). Due to this, care was taken to address issues of rigour and trustworthiness within the data collection process. Standard questions, which were developed based on preliminary analysis of questionnaire responses, were used with each student and practice educator interviewee (Appendices 8a and 8b). These were developed by the principal investigator and research supervisors. The use of the interview schedule was to keep the conversation on topic and elicit information related to the 2:1 model. It also served to allow the principal investigator influence the interview structure in her absence. Topics included:

- Learning opportunities facilitated by the 2:1 model
- Usefulness of the 2:1 model in Placement B versus Placement C
- Peer support versus independence
- Perceived value of peer feedback versus practice educator feedback
- Preparation for 2:1 model
- Impact of facilitation skills of the practice educator on the usefulness of the 2:1 model

The intention remained to conduct an inductive thematic analysis as described by Braun and Clarke (2006), in order to avoid structuring the qualitative data around the quantitative data. One interviewer facilitated all of the interviews in order to reduce inter-rater reliability bias (Atkinson & Murray, 1987). This person was an experienced interviewer and dietitian practice educator, and was not a staff member of the BSc

Human Nutrition and Dietetics programme. The principal investigator discussed the questionnaire completed by the interviewee with the interviewer before each interview and potential topics or answers to explore further within the interview were discussed. In keeping with good interviewing practice, the interviewer used an open manner, recorded field notes and used the technique of member checking. The latter involves the interviewer summarising information and checking the accuracy or interpretation with the interviewee (Burnard, 1991). In order to reduce the impact or bias that these ethical restrictions would have on the collection and interpretation of the qualitative data in this research, pre- and post- individual interview discussions were held between the principal investigator and the interviewer and comprehensive field notes for each interview were compiled (Atkinson & Murray, 1987; Sandelowski, 1994). The recorded field notes were used by the principal investigator to aid the interpretation of the interview transcripts.

### **3.5.2 Data collection**

#### Timepoint B

After Placement B, preliminary descriptive analysis was performed on the completed questionnaires to identify students and practice educators with high, medium and low degrees of satisfaction with the 2:1 model. This technique of purposeful sampling was undertaken in order to identify a diversity of interviewees. Two participants from each category of student and practice educator were approached and invited to participate in a semi-structured interview.

### Timepoint C

As for Timepoint B, after Placement C, purposeful sampling was undertaken to identify students and practice educators for invitation to participate in a semi-structured interview, with questions developed based on questionnaire responses.

#### **3.5.3 Data analysis**

For the qualitative analysis, the semi-structured interview recordings were transcribed verbatim. Written notes made during the interviews, including verbatim quotes, were read back to participants for feedback and comment (Vaughn et al., 1996). A sample of these transcripts were read and blindly categorised using qualitative techniques by the two supervisors of this research, in order to address the issue of bias as recommended in the literature (Burnard, 1991; Glaser, 1967).

A thematic analysis approach was used to interpret and identify themes within the data (Braun & Clarke, 2006). This was inductive analysis, whereby the content of the data informed the development of the themes. Data were coded and categorised manually initially and the qualitative analysis software, NVIVO Version 12 (QSR International), was used for data management.

This thematic analysis approach incorporates six distinct steps or phases:

- Phase 1: Familiarisation
- Phase 2: Developing Initial Codes
- Phase 3: Searching for Themes
- Phase 4: Reviewing Themes

- Phase 5: Defining and Naming Themes
- Phase 6: Creating the Report (Analysis and Write up)

The initial step required familiarisation with the data, involving total immersion in the data achieved by reading and rereading interview transcripts. From this, initial codes were drafted and developed. Where data represented more than one code, they were assigned to all relevant codes. These codes were divided into groups, reviewed and re-named as appropriate. Thus, a number of sub-themes were developed. These sub-themes were then combined and grouped to create a small number of overarching themes.

### **3.6 Ethical approval**

Ethical approval was sought and obtained from the Faculty of Health Sciences Ethics Committee in TCD (Appendix 5). Due to the dependent relationship between the lead researcher and the students, a gatekeeper was engaged at all three time points to i) approach students and practice educators to invite them to participate in the study, ii) administer the questionnaire and iii) conduct the interviews. Pre-approved consent forms and participant information leaflets were used (Appendix 6). Care was taken to ensure no identifying information was included in the completed questionnaires. Interviews were transcribed professionally and anonymity ensured, prior to analysis by the lead researcher. Inclusion criteria were defined as either undertaking or supervising the practice education component of the BSc Human Nutrition and Dietetics Programme in TCD/TU Dublin, participation in a collaborative peer learning 2:1 model and being at least eighteen years old.



## **CHAPTER 4: QUANTITATIVE RESULTS**

Quantitative data were obtained from 15 student and 25 practice educator questionnaires following Placement B (Timepoint B) and 15 student and 23 practice educator questionnaires following Placement C (Timepoint C). Practice educators are referred to as educators for brevity throughout this chapter.

### **4.1 Response rates**

The response rate for student completion of the questionnaire was 24/24 for Timepoint A, 22/23 for Timepoint B and 15/16 for Timepoint C. The high response rate of the student cohort was aided by the questionnaire being administered and collected in person by the gatekeeper on the same day on the college campus.

Twenty-four students participated in the preparatory Professional Practice Studies Module prior to Placement B and all completed a questionnaire at Timepoint A. Out of a total of 23 students who undertook Placement B, 22 students completed a questionnaire at Timepoint B. One student did not proceed to Placement B and another was facilitated using a 1:1 education model (one student to one practice educator) due to the uneven class number. A total of 19 students from the original cohort completed Placement C. However, of these 19, only 16 were facilitated using a 2:1 model. Of these 16, 15 completed a questionnaire at Timepoint C.

The response rate for educator completion of the questionnaire was 25/135 (18.5%) for Timepoint B and 23/134 (17.2%) for Timepoint C. The lower response rate of the

educator cohorts may have been influenced by the administration method used for the educator questionnaire, which was by email from the gatekeeper, rather than in person as for the student questionnaire.

## **4.2 Understanding of and preference for peer learning**

### **4.2.1 Students**

Tables 4.1 and 4.2 show students' opinions of their understanding of the three individual components of 'peer learning' ('collaborative learning', 'peer observation' and 'peer feedback'), their perceived use in providing learning opportunities for students and subsequent preference for their use during practice education, at three time points. These time points were i) prior to practice placement (Timepoint A), ii) following Placement B (Timepoint B) and iii) following Placement C (Timepoint C). Comparison of each component of 'peer learning' between Timepoints A, B and C is also shown (Table 4.2).

**Table 4.1 Students' understanding and opinion (frequencies) of the role of the components of peer learning during practice education**

<b>STUDENTS</b>	<b>A</b>	<b>B</b>	<b>C</b>
	<b>Frequency</b>	<b>Frequency</b>	<b>Frequency</b>
	n=15 (%)	n=15 (%)	n=15 (%)
<b>UNDERSTAND TERM</b>			
<i>COLLABORATIVE LEARNING</i>	Agree=15 (100.0) Neutral=0 (0.0) Disagree=0 (0.0)	Agree=14 (73.3) Neutral=1 (6.7) Disagree=0 (0.0)	Agree=15 (100.0) Neutral=0 (0.0) Disagree=0 (0.0)
<i>PEER OBSERVATION</i>	Agree=13 (86.7) Neutral=2 (13.3) Disagree=0 (0.0)	Agree=15 (100.0) Neutral=0 (0.0) Disagree=0 (0.0)	Agree=15 (100.0) Neutral=0 (0.0) Disagree=0 (0.0)
<i>PEER FEEDBACK</i>	Agree=13 (86.7) Neutral=2 (13.3) Disagree=0 (0.0)	Agree=14 (73.3) Neutral=1 (6.7) Disagree=0 (0.0)	Agree=15 (100.0) Neutral=0 (0.0) Disagree=0 (0.0)
<b>HELPED STUDENTS LEARN</b>			
<i>COLLABORATIVE LEARNING</i>	Agree=13 (86.7) Neutral=2 (13.3) Disagree=0 (0.0)	Agree=11 (73.3) Neutral=3 (20.0) Disagree=1 (6.7)	Agree=11 (73.3) Neutral=3 (20.0) Disagree=1 (6.7)
<i>PEER OBSERVATION</i>	Agree=15 (100.0) Neutral=0 (0.0) Disagree=0 (0.0)	Agree=12 (80.0) Neutral=3 (20.0) Disagree=0 (0.0)	Agree=10 (66.7) Neutral=4 (26.7) Disagree=1 (6.7)
<i>PEER FEEDBACK</i>	Agree=15 (100.0) Neutral=0 (0.0) Disagree=0 (0.0)	Agree=13 (86.7) Neutral=2 (13.3) Disagree=0 (0.0)	Agree=9 (60.0) Neutral=5 (33.3) Disagree=1 (6.7)
<b>PREFER NOT TO ENGAGE IN</b>			
<i>COLLABORATIVE LEARNING</i>	Agree=1 (6.7) Neutral=2 (13.3) Disagree=12 (80.0)	Agree=2 (13.3) Neutral=2 (13.3) Disagree=11 (73.3)	Agree=1 (6.7) Neutral=4 (26.7) Disagree=10 (66.7)
<i>PEER OBSERVATION</i>	Agree=1 (6.7) Neutral=2 (13.3) Disagree=12 (80.0)	Agree=2 (13.3) Neutral=13 (86.7) Disagree=0 (0.0)	Agree=2 (13.3) Neutral=4 (26.7) Disagree=9 (60.0)
<i>PEER FEEDBACK</i>	Agree=2 (13.3) Neutral=1 (6.7) Disagree=12 (80.0)	Agree=2 (13.3) Neutral=13 (86.7) Disagree=0 (0.0)	Agree=1 (6.7) Neutral=6 (40.0) Disagree=8 (53.3)

**Table 4.2 Students' understanding and opinion (median/IQR) of the role of the components of peer learning during practice education**

STUDENTS	A	B	C	A VS B	A VS C	B VS C
	Median(IQR )	Median(IQR )	Median(IQR )	<i>P</i> -value	<i>P</i> -value	<i>P</i> -value
	n=15	n=15	n=15			
<b>UNDERSTAND TERM</b>						
<i>COLLABORATIVE LEARNING</i>	1.00(0.00)	1.00(0.00)	1.00(0.00)	0.317	1.000	0.317
<i>PEER OBSERVATION</i>	1.00(0.00)	1.00(0.00)	1.00(0.00)	0.157	0.157	1.000
<i>PEER FEEDBACK</i>	1.00(0.00)	1.00(0.00)	1.00(0.00)	0.317	0.157	0.317
<b>HELPED STUDENTS LEARN</b>						
<i>COLLABORATIVE LEARNING</i>	1.00(0.00)	1.00(1.00)	1.00(1.00)	0.180	0.317	1.000
<i>PEER OBSERVATION</i>	1.00(0.00)	1.00(0.00)	1.00(1.00)	0.083	<b>0.034</b>	0.317
<i>PEER FEEDBACK</i>	1.00(0.00)	1.00(0.00)	1.00(1.00)	0.157	<b>0.020</b>	0.132
<b>PREFER NOT TO ENGAGE IN</b>						
<i>COLLABORATIVE LEARNING</i>	3.00(0.00)	3.00(1.00)	3.00(1.00)	0.581	0.414	1.000
<i>PEER OBSERVATION</i>	3.00(0.00)	3.00(0.00)	3.00(1.00)	0.414	0.157	0.084
<i>PEER FEEDBACK</i>	3.00(0.00)	3.00(0.00)	3.00(1.00)	0.257	0.317	0.084

^Median student scores (IQR) and comparison (Wilcoxon SR Test) for agreement that Collaborative Learning, Peer Observation & Peer Feedback terms were understood, helped students learn and were preferred prior to Placement B (Timepoint A), following Placement B (Timepoint B) and following Placement C (Timepoint C) are shown.

→ 1=strongly agree/agree, 2=neutral, 3=disagree/strongly disagree

Students reported high levels of agreement (n=13-15, 87-100%) that they understood the terms ‘collaborative learning’, ‘peer observation’ and ‘peer feedback’, at all three time points. Levels of agreement that these components of peer learning provided opportunities for students to learn were also high prior to placement (Timepoint A)

(n=13-15, 87-100%) and having experienced Placement B (Timepoint B) (n=11-13, 74-87%), with no significant difference in median scores of agreement. Following Placement C (Timepoint C), a similar number of students agreed that ‘collaborative learning’ provided opportunities for students to learn (n=11, 74%). However, fewer students agreed that ‘peer observation’ (n=10, 67%) and ‘peer feedback’ (n=9, 60%) were helpful, with significantly lower median scores of agreement for both ( $P = 0.032$  and  $P = 0.020$  respectively).

High levels of disagreement were reported with the statements ‘I would have preferred not to have engaged in collaborative learning/ peer observation/ peer feedback’, at Timepoint A and Timepoint B (n=11-13, 73-87%), with slightly lower levels of agreement at Timepoint C (n=8-10, 53-67%). However, there was no significant difference in median scores of agreement between the three timepoints.

#### **4.2.2 Educators**

Tables 4.3 and 4.4 show educators’ opinions of their understanding of the three individual components of ‘peer learning’ (‘collaborative learning’, ‘peer observation’ and ‘peer feedback’), their perceived use in providing learning opportunities for students and subsequent preference for their use during practice education, at two time points.

The opinions of Placement B educators (following Placement B) were collected at Timepoint B and those of Placement C educators (following Placement C) at Timepoint

C. Comparison of each component of peer learning between Timepoints B and C is also shown (Table 4.4).

**Table 4.3 Educators' understanding and opinion (frequencies) of the role of the components of peer learning during practice education**

<b>EDUCATORS</b>	<b>B</b>	<b>C</b>
	<b>Frequency</b>	<b>Frequency</b>
	n=25 (%)	n=23 (%)
<b>UNDERSTAND TERM</b>		
<i>COLLABORATIVE LEARNING</i>	Agree=23 (92.0) Neutral=2 (8.0) Disagree=0 (0.0)	Agree=19 (82.6) Neutral=4 (17.4) Disagree=0 (0.0)
<i>PEER OBSERVATION</i>	Agree=24 (96.0) Neutral=1 (4.0) Disagree=0 (0.0)	Agree=20 (87.0) Neutral=3 (13.0) Disagree=0 (0.0)
<i>PEER FEEDBACK</i>	Agree=23 (92.0) Neutral=1 (4.0) Disagree=1 (4.0)	Agree=20 (87.0) Neutral=3 (13.0) Disagree=0 (0.0)
<b>HELPED STUDENTS LEARN</b>		
<i>COLLABORATIVE LEARNING</i>	Agree=20 (80.0) Neutral=3 (12.0) Disagree=2 (8.0)	Agree=21 (91.2) Neutral=1 (4.4) Disagree=1 (4.4)
<i>PEER OBSERVATION</i>	Agree=19 (76.0) Neutral=5 (20.0) Disagree=1 (4.0)	Agree=19 (82.6) Neutral=4 (17.4) Disagree=0 (0.0)
<i>PEER FEEDBACK</i>	Agree=17 (68.0) Neutral=6 (24.0) Disagree=2 (8.0)	Agree=18 (78.3) Neutral=5 (21.7) Disagree=0 (0.0)
<b>PREFER NOT TO FACILITATE</b>		
<i>COLLABORATIVE LEARNING</i>	Agree=0 (0.0) Neutral=4 (16.0) Disagree=21 (84.0)	Agree=0 (0.0) Neutral=8 (34.8) Disagree=15 (65.2)
<i>PEER OBSERVATION</i>	Agree=0 (0.0) Neutral=3 (12.0) Disagree=22 (88.0)	Agree=0 (0.0) Neutral=6 (26.1) Disagree=17 (73.9)
<i>PEER FEEDBACK</i>	Agree=0 (0.0) Neutral=5 (20.0) Disagree=20 (80.0)	Agree=0 (0.0) Neutral=7 (30.4) Disagree=16 (69.6)

**Table 4.4 Educators’ understanding and opinion (median/IQR) of the role of the components of peer learning during practice education**

<b>EDUCATORS</b>	<b>B</b>	<b>C</b>	<b>B VS C</b>
	<b>Median(IQR)</b>	<b>Median(IQR)</b>	<b>P-value</b>
	(n=25)	(n=23)	
<b>UNDERSTAND TERM</b>			
<i>COLLABORATIVE LEARNING</i>	1.00(0.00)	1.00(0.00)	0.331
<i>PEER OBSERVATION</i>	1.00(0.00)	1.00(0.00)	0.262
<i>PEER FEEDBACK</i>	1.00(0.00)	1.00(0.00)	0.613
<b>HELPED STUDENTS LEARN</b>			
<i>COLLABORATIVE LEARNING</i>	1.00(0.00)	1.00(0.00)	0.282
<i>PEER OBSERVATION</i>	1.00(0.50)	1.00(0.00)	0.539
<i>PEER FEEDBACK</i>	1.00(1.00)	1.00(0.00)	0.358
<b>PREFER NOT TO FACILITATE</b>			
<i>COLLABORATIVE LEARNING</i>	3.00(0.00)	3.00(1.00)	0.137
<i>PEER OBSERVATION</i>	3.00(0.00)	3.00(1.00)	0.216
<i>PEER FEEDBACK</i>	3.00(0.00)	3.00(1.00)	0.409

^Median educator scores (IQR) and comparison (Mann-Whitney U Test) for agreement that Collaborative Learning, Peer Observation and Peer Feedback terms were understood by educators, helped students learn and were preferred by educators following Placement B (Timepoint B) and Placement C (Timepoint C) are shown.

↪ 1=strongly agree/agree, 2=neutral, 3=disagree/strongly disagree

Overall, both Placement B educators (Timepoint B) and Placement C educators (Timepoint C) agreed/strongly agreed that they understood the terms ‘collaborative learning’, ‘peer observation’ and ‘peer feedback’ (83-96% in agreement). Of the Placement B educators, 68-80% agreed that the three elements helped students learn, while more Placement C educators (78-91%) agreed with this. However, there were no significant differences in median scores of agreement between the two groups.

High levels of disagreement were reported with the statements ‘I would have preferred not to have facilitated collaborative learning/ peer observation/ peer feedback’ at both time points. Slightly more Placement B educators reported disagreement with the

statements (80-88%) than Placement C educators (65-74%). However, there were no significant differences in the median scores of agreement between the two groups.

### 4.2.3 Comparison between Students and Educators

Differences were examined between students and their educators, for levels of agreement following Placement B and following Placement C, on the their understanding of ‘collaborative learning’, ‘peer observation’ and ‘peer feedback’, the opportunities that these provided for student learning and preference for their use during practice education (Table 4.5).

**Table 4.5 Comparison of students’ and educators’ understanding and opinion of the role of the components of peer learning during practice education**

TIMEPOINT	PLACEMENT B			PLACEMENT C		
	STUDENT	EDUCATOR		STUDENT	EDUCATOR	
	Median(IQR)	Median(IQR)	P-value	Median(IQR)	Median(IQR)	P-value
	(n=15)	(n=25)		(n=15)	(n=23)	
<b>UNDERSTAND TERM</b>						
<i>COLLABORATIVE LEARNING</i>	1.00(0.00)	1.00(0.00)	0.878	1.00(0.00)	1.00(0.00)	0.092
<i>PEER OBSERVATION</i>	1.00(0.00)	1.00(0.00)	0.439	1.00(0.00)	1.00(0.00)	0.150
<i>PEER FEEDBACK</i>	1.00(0.00)	1.00(0.00)	0.854	1.00(0.00)	1.00(0.00)	0.150
<b>HELPED STUDENTS LEARN</b>						
<i>COLLABORATIVE LEARNING</i>	1.00(1.00)	1.00(0.00)	0.673	1.00(1.00)	1.00(0.00)	0.158
<i>PEER OBSERVATION</i>	1.00(0.00)	1.00(0.50)	0.729	1.00(1.00)	1.00(0.00)	0.233
<i>PEER FEEDBACK</i>	1.00(0.00)	1.00(1.00)	0.171	1.00(1.00)	1.00(0.00)	0.198
<b>PREFER NOT TO ENGAGE IN/FACILITATE</b>						
<i>COLLABORATIVE LEARNING</i>	3.00(1.00)	3.00(0.00)	0.336	3.00(1.00)	3.00(1.00)	0.957
<i>PEER OBSERVATION</i>	3.00(0.00)	3.00(0.00)	0.903	3.00(1.00)	3.00(1.00)	0.271
<i>PEER FEEDBACK</i>	3.00(0.00)	3.00(0.00)	0.596	3.00(1.00)	3.00(1.00)	0.399

^Median student and educator scores (IQR) and comparison (Mann-Whitney U Test) for agreement that Collaborative Learning, Peer Observation and Peer Feedback terms were understood, helped students learn and were preferred to have engaged in/facilitated following Placement B (Timepoint B) and Placement C (Timepoint C) are shown.

↪ 1=strongly agree/agree, 2=neutral, 3=disagree/strongly disagree



There were no significant differences between students' and educators' levels of agreement following Placement B and following Placement C, regarding their understanding of 'collaborative learning', 'peer observation' and 'peer feedback', the opportunities that these components of 'peer learning' provided for student learning or preference for their use during practice education. This indicates that students and educators are in agreement on the opportunities that the three individual components of 'peer learning' provide for student learning and on their preference for their use during practice education.

### **4.3 Attainment of professional competence**

#### **4.3.1 Students**

Tables 4.6 and 4.7 show students' opinions of 'peer learning' and its three individual components ('collaborative learning', 'peer observation' and 'peer feedback') on the attainment of the five professional competencies required of dietetic students: *'knowledge and practice'*, *'professionalism'*, *'communication'*, *'team working'* and *'service delivery'* at three time points. These time points were i) prior to practice placement (Timepoint A), ii) following Placement B (Timepoint B) and iii) following Placement C (Timepoint C). Comparison of the value of each component of peer learning between Timepoints A, B and C is also shown (Table 4.7).

**Table 4.6 Students' opinions (frequencies) of the role of the components of peer learning in the attainment of dietetic professional competence**

<b>STUDENTS</b>	<b>A</b>	<b>B</b>	<b>C</b>
	<b>Frequency</b>	<b>Frequency</b>	<b>Frequency</b>
	n=15 (%)	n=15 (%)	n=15 (%)
<b>KNOWLEDGE &amp; PRACTICE</b>			
<i>PEER LEARNING</i>	Agree=12 (80.0) Neutral=3 (20.0) Disagree=0 (0.0)	Agree=11 (73.3) Neutral=4 (26.7) Disagree=0 (0.0)	Agree=8 (53.3) Neutral=6 (40.0) Disagree=1 (6.7)
<i>COLLABORATIVE LEARNING</i>	Agree=12 (80.0) Neutral=3 (20.0) Disagree=0 (0.0)	Agree=11 (73.3) Neutral=3 (20.0) Disagree=1 (6.7)	Agree=9 (60.0) Neutral=6 (40.0) Disagree=0 (0.0)
<i>PEER OBSERVATION</i>	Agree=10 (66.7) Neutral=5 (33.3) Disagree=0 (0.0)	Agree=11 (73.3) Neutral=3 (20.0) Disagree=1 (6.7)	Agree=8 (53.3) Neutral=6 (40.0) Disagree=1 (6.7)
<i>PEER FEEDBACK</i>	Agree=12 (80.0) Neutral=3 (20.0) Disagree=0 (0.0)	Agree=11(73.3) Neutral=4 (26.7) Disagree=0 (0.0)	Agree=7 (46.7) Neutral=5 (33.3) Disagree=3 (20.0)
<b>PROFESSIONALISM</b>			
<i>PEER LEARNING</i>	Agree=9 (60.0) Neutral=4 (26.7) Disagree=2 (13.3)	Agree=9 (60.0) Neutral=3 (20.0) Disagree=3 (20.0)	Agree=4 (26.7) Neutral=6 (40.0) Disagree=5 (33.3)
<i>COLLABORATIVE LEARNING</i>	Agree=9 (60.0) Neutral=4 (26.7) Disagree=2 (13.3)	Agree=9 (60.0) Neutral=4 (26.7) Disagree=2 (13.3)	Agree=7 (46.7) Neutral=5 (33.3) Disagree=3 (20.0)
<i>PEER OBSERVATION</i>	Agree=10 (66.7) Neutral=3 (20.0) Disagree=2 (13.3)	Agree=7 (46.7) Neutral=4 (26.7) Disagree=4 (26.7)	Agree=3 (20.0) Neutral=6 (40.0) Disagree=6 (40.0)
<i>PEER FEEDBACK</i>	Agree=9 (60.0) Neutral=5 (33.3) Disagree=1 (6.7)	Agree=10 (66.7) Neutral=2 (13.3) Disagree=3 (20.0)	Agree=4 (26.7) Neutral=5 (33.3) Disagree=6 (40.0)
<b>COMMUNICATION</b>			
<i>PEER LEARNING</i>	Agree=12 (80.0) Neutral=3 (20.0) Disagree=0 (0.0)	Agree=12 (80.0) Neutral=2 (13.3) Disagree=1 (6.7)	Agree=7 (46.7) Neutral=7 (46.7) Disagree=1 (6.7)
<i>COLLABORATIVE LEARNING</i>	Agree=12 (80.0) Neutral=3 (20.0) Disagree=0 (0.0)	Agree=11 (73.3) Neutral=3 (20.0) Disagree=1 (6.7)	Agree=10 (66.7) Neutral=3 (20.0) Disagree=2 (13.3)
<i>PEER OBSERVATION</i>	Agree=12 (80.0) Neutral=2 (13.3) Disagree=1 (6.7)	Agree=12 (80.0) Neutral=1 (6.7) Disagree=2 (13.3)	Agree=8 (53.3) Neutral=6 (40.0) Disagree=1 (6.7)
<i>PEER FEEDBACK</i>	Agree=13 (86.7) Neutral=1 (6.7) Disagree=1 (6.7)	Agree=13 (86.7) Neutral=1 (6.7) Disagree=1 (6.7)	Agree=8 (53.3) Neutral=4 (26.7) Disagree=3 (20.0)

<b>STUDENTS</b>	<b>A</b>	<b>B</b>	<b>C</b>
	<b>Frequency</b>	<b>Frequency</b>	<b>Frequency</b>
	<b>n=15 (%)</b>	<b>n=15 (%)</b>	<b>n=15 (%)</b>
<b>TEAM WORKING</b>			
<i>PEER LEARNING</i>	Agree=11 (73.3) Neutral=4 (26.7) Disagree=0 (0.0)	Agree=12 (80.0) Neutral=2 (13.3) Disagree=1 (6.7)	Agree=7 (46.7) Neutral=6 (40.0) Disagree=2 (13.3)
<i>COLLABORATIVE LEARNING</i>	Agree=13 (86.7) Neutral=1 (6.7) Disagree=1 (6.7)	Agree=11 (73.3) Neutral=2 (13.3) Disagree=2 (13.3)	Agree=10 (66.7) Neutral=2 (13.3) Disagree=3 (20.0)
<i>PEER OBSERVATION</i>	Agree=11 (73.3) Neutral=2 (13.3) Disagree=2 (13.3)	Agree=11 (73.3) Neutral=2 (13.3) Disagree=2 (13.3)	Agree=7 (46.7) Neutral=3 (20.0) Disagree=5 (33.3)
<i>PEER FEEDBACK</i>	Agree=11 (73.3) Neutral=3 (20.0) Disagree=1 (6.7)	Agree=12 (80.0) Neutral=3 (20.0) Disagree=0 (0.0)	Agree=7 (46.7) Neutral=1 (6.7) Disagree=7 (46.7)
<b>SERVICE DELIVERY</b>			
<i>PEER LEARNING</i>	Agree=10 (66.7) Neutral=5 (33.3) Disagree=0 (0.0)	Agree=11 (73.3) Neutral=2 (13.3) Disagree=2 (13.3)	Agree=6 (40.0) Neutral=5 (33.3) Disagree=4 (26.7)
<i>COLLABORATIVE LEARNING</i>	Agree=13 (86.7) Neutral=2 (13.3) Disagree=0 (0.0)	Agree=10 (66.7) Neutral=4 (26.7) Disagree=1 (6.7)	Agree=7 (46.7) Neutral=4 (26.7) Disagree=4 (26.7)
<i>PEER OBSERVATION</i>	Agree=9 (60.0) Neutral=5 (33.3) Disagree=1 (6.7)	Agree=10 (67.7) Neutral=1 (6.7) Disagree=4 (26.7)	Agree=5 (33.3) Neutral=3 (20.0) Disagree=7 (46.7)
<i>PEER FEEDBACK</i>	Agree=9 (60.0) Neutral=6 (40.0) Disagree=0 (0.0)	Agree=10 (67.7) Neutral=2 (13.3) Disagree=3 (20.0)	Agree=6 (40.0) Neutral=2 (13.3) Disagree=7 (46.7)

**Table 4.7 Students' opinions (median/IQR) of the role of the components of peer learning in the attainment of dietetic professional competence**

STUDENTS	A	B	C	A VS B	A VS C	B VS C
	Median(IQR)	Median(IQR)	Median(IQR)	P-value	P-value	P-value
	n=15	n=15	n=15			
<b>KNOWLEDGE &amp; PRACTICE</b>						
<i>PEER LEARNING</i>	1.26(0.39)	1.30(1.59)	1.50(0.83)	0.410	<b>0.023</b>	0.099
<i>COLLABORATIVE LEARNING</i>	1.15(0.44)	1.30(0.41)	1.37(0.56)	0.232	0.307	0.753
<i>PEER OBSERVATION</i>	1.15(0.59)	1.22(0.74)	1.48(0.97)	0.570	<b>0.038</b>	<b>0.035</b>
<i>PEER FEEDBACK</i>	1.15(0.30)	1.19(0.74)	1.85(1.15)	0.510	<b>0.016</b>	<b>0.046</b>
<b>PROFESSIONALISM</b>						
<i>PEER LEARNING</i>	1.27(0.97)	1.30(0.91)	1.81(1.04)	0.900	<b>0.020</b>	<b>0.041</b>
<i>COLLABORATIVE LEARNING</i>	1.36(1.00)	1.27(0.81)	1.64(1.36)	0.623	0.075	0.115
<i>PEER OBSERVATION</i>	1.27(1.00)	1.55(0.55)	2.27(0.91)	0.298	<b>0.002</b>	<b>0.003</b>
<i>PEER FEEDBACK</i>	1.09(1.09)	1.09(1.00)	2.36(1.19)	0.722	<b>0.017</b>	<b>0.003</b>
<b>COMMUNICATION</b>						
<i>PEER LEARNING</i>	1.07(0.56)	1.15(0.33)	1.74(0.96)	0.194	<b>0.021</b>	0.060
<i>COLLABORATIVE LEARNING</i>	1.00(0.44)	1.11(0.56)	1.33(0.89)	0.423	0.247	0.330
<i>PEER OBSERVATION</i>	1.00(0.44)	1.11(0.44)	1.56(1.00)	0.634	0.088	0.167
<i>PEER FEEDBACK</i>	1.00(0.22)	1.00(0.44)	1.44(1.22)	0.722	<b>0.013</b>	<b>0.036</b>
<b>TEAM WORKING</b>						
<i>PEER LEARNING</i>	1.00(1.00)	1.00(0.33)	2.33(1.33)	0.600	<b>0.027</b>	0.124
<i>COLLABORATIVE LEARNING</i>	1.00(0.00)	1.00(0.50)	1.00(1.00)	0.465	0.174	0.399
<i>PEER OBSERVATION</i>	1.00(0.50)	1.00(1.00)	2.00(2.00)	0.496	<b>0.046</b>	0.086
<i>PEER FEEDBACK</i>	1.00(1.00)	1.00(0.00)	2.00(2.00)	0.783	<b>0.028</b>	<b>0.035</b>
<b>SERVICE DELIVERY</b>						
<i>PEER LEARNING</i>	1.33(0.67)	1.33(1.00)	2.33(2.00)	0.590	<b>0.017</b>	0.059
<i>COLLABORATIVE LEARNING</i>	1.00(1.00)	1.00(0.50)	2.00(2.00)	0.276	<b>0.015</b>	0.102
<i>PEER OBSERVATION</i>	1.00(1.00)	1.00(2.00)	2.00(2.00)	0.541	<b>0.042</b>	0.130
<i>PEER FEEDBACK</i>	1.00(1.00)	1.00(1.00)	2.00(2.00)	0.472	<b>0.025</b>	0.114

^Median student scores (IQR) and comparison (Wilcoxon SR Test) for agreement that Peer Learning, Collaborative Learning, Peer Observation & Peer Feedback helped attain professional competence prior to Placement B (Timepoint A), following Placement B (Timepoint B) and following Placement C (Timepoint C) are shown.

→ 1=strongly agree/agree, 2=neutral, 3=disagree/strongly disagree

Overall, a high proportion of students' agreed that 'peer learning' and its three individual components ('collaborative learning', 'peer observation' and 'peer

feedback’) were helpful in attaining competence in the five professional competencies prior to placement (Timepoint A) and having experienced Placement B (Timepoint B) (Table 4.6), with median agreement scores indicating higher levels of agreement at these time points (Table 4.7). Following Placement C (Timepoint C), students’ levels of agreement that ‘collaborative learning’ was helpful remained similar. However, there was significantly less agreement regarding the role of the other aspects of ‘peer learning’ in attaining some of these professional competencies (Table 4.7).

### *Knowledge and Practice*

Twelve out of fifteen students (80%) agreed/strongly agreed that all components of ‘peer learning’ were helpful in attainment of the professional competency of ‘*knowledge and practice*’ prior to Placement B (i.e. Timepoint A). Eleven students (73%) were in agreement at Timepoint B, with no significant differences in median agreement scores between students’ in the composite score of ‘peer learning’ or any components of ‘peer learning’ for attainment of competence in ‘*knowledge and practice*’. However, on comparing students’ median levels of agreement between Timepoint A (prior to Placement B) and Timepoint C (following completion of Placement C) students’ scores reduced significantly, (n=8, 53% in agreement) with median scores indicating significantly less agreement that ‘peer learning’ ( $P = 0.023$ ), ‘peer observation’ ( $P = 0.038$ ) and ‘peer feedback’ ( $P = 0.016$ ), contributed to the development of ‘*knowledge and practice*’. There was no significant difference in agreement scores for ‘collaborative learning’ between Timepoint A and Timepoint B.

On examining differences in students’ median agreement scores between Timepoint B and Timepoint C, there were significant differences in students’ agreement scores on

the role of ‘peer observation’ (n=11 versus n=8 in agreement) ( $P = 0.035$ ) and ‘peer feedback’ (n=11 versus n=7 in agreement) ( $P = 0.046$ ) in attaining competence in ‘*knowledge and practice*’. There were no significant differences in agreement scores for ‘peer learning’ or ‘collaborative learning’ between Timepoint B and Timepoint C.

### *Professionalism*

Prior to Placement B (Timepoint A) and following Placement B (Timepoint B), 9/15 students agreed (60%) that all components of ‘peer learning’ helped attain competence in ‘*professionalism*’ with no significant differences in median agreement scores between these two time points.

At Timepoint C, only 4 students (27%) were in agreement that peer learning contributed to ‘*professionalism*’, with students’ levels of agreement that ‘peer learning’ and the components of peer learning’, ‘peer observation’ and ‘peer feedback’ contributed to ‘*professionalism*’ reduced significantly from Timepoint A (prior to placement B) ( $P = 0.020$ ,  $P = 0.002$ ,  $P = 0.017$  respectively). These significant differences in ‘peer learning’, ‘peer observation’ and ‘peer feedback’ were also observed between Timepoint B and Timepoint C ( $P = 0.041$ ,  $P = 0.003$ ,  $P = 0.003$  respectively). Scores on ‘collaborative learning’ were not significantly different at any of the three time points.

### *Communication*

The median scores for students’ level of agreement indicate that students agreed/strongly agreed that all components of ‘peer learning’ were helpful in

attainment of the professional competency of '*communication*' at Timepoint A (n=12, 80% in agreement). Twelve students remained in agreement at Timepoint B with no significant differences in median scores between students' for 'peer learning' or any components of 'peer learning' for attainment of competence in '*communication*'. However, on comparing students' median levels of agreement between Timepoint A (prior to Placement B) and Timepoint C (following completion of Placement C) students' scores reduced significantly (n=7, 47% in agreement; n=7 neutral) with median scores indicating significantly less agreement that 'peer learning' ( $P = 0.021$ ) and 'peer feedback' ( $P = 0.013$ ), contributed to the development of '*communication*'. There was no significant difference in agreement scores for 'collaborative learning' or 'peer observation' between Timepoint A and Timepoint B.

On examining differences in students' median agreement scores between Timepoint B and Timepoint C, there were significant differences in students' agreement (n=13, 87% versus n=8, 53%) for the role of 'peer feedback' ( $P = 0.036$ ) in attaining competence in '*communication*'.

### *Team Working*

Eleven students (73%) agreed/strongly agreed that all components of 'peer learning' were helpful in attainment of the professional competency of '*team working*' prior to Placement B (i.e. Timepoint A). Students' median agreement scores remained similarly high at Timepoint B (n=12, 80% in agreement) with no significant differences between students' level of agreement in the composite score of 'peer learning' or any components of 'peer learning' for attainment of competence in '*team working*'. By Timepoint C, only 7 (47%) students were in agreement, with median levels of

agreement significant lower for 'peer learning' ( $P = 0.027$ ), 'peer observation' ( $P = 0.046$ ) and 'peer feedback' ( $P = 0.028$ ). There was no significant difference in agreement scores for 'collaborative learning' between Timepoint A and Timepoint B.

At Timepoint C, fewer students reported agreement that 'peer feedback' was helpful in attaining competence in '*team working*' than at Timepoint B ( $n=12$ , 80% versus  $n=7$ , 47%), with students' median agreement scores reducing significantly ( $P = 0.035$ ). There were no significant differences in agreement scores for 'peer learning', 'collaborative learning' or 'peer observation' between Timepoint B and Timepoint C.

### *Service Delivery*

Ten students (67%) agreed/strongly agreed that all components of 'peer learning' were helpful in attainment of the professional competency of '*service delivery*' prior to Placement B (i.e. Timepoint A). Students' median agreement scores remained similarly high at Timepoint B ( $n=11$ , 73% in agreement) with no significant differences between students' level of agreement in the composite score of 'peer learning' or any components of 'peer learning' for attainment of competence in '*service delivery*'. By Timepoint C, only 6 students (40%) were in agreement overall, with median levels of agreement significant lower for 'peer learning' ( $P = 0.017$ ), 'collaborative learning' ( $P = 0.015$ ), 'peer observation' ( $P = 0.042$ ) and 'peer feedback' ( $P = 0.025$ ).

Students' median agreement scores remained similar to Timepoint B following completion of Placement C (Timepoint C) with no significant differences between students' level of agreement in the composite score of 'peer learning' or any components of 'peer learning' for attainment of competence in '*service delivery*'.



### **4.3.2 Educators**

Tables 4.8 and 4.9 show educators' opinions of 'peer learning' and its three individual components ('collaborative learning', 'peer observation' and 'peer feedback') on the attainment of the five professional dietetic competencies: '*knowledge and practice*', '*professionalism*', '*communication*', '*team working*' and '*service delivery*' at two time points. The opinions of Placement B educators (following Placement B) were collected at Timepoint B and those of Placement C educators (following Placement C) at Timepoint C. Comparison of the value of each component of 'peer learning' between Timepoints B and C is also shown (Table 4.9).

**Table 4.8 Educators' opinions (frequencies) of the role of the components of peer learning in the attainment of dietetic professional competence**

<b>EDUCATORS</b>	<b>B</b>	<b>C</b>
	<b>Frequency</b>	<b>Frequency</b>
	n=25 (%)	n=23 (%)
<b>KNOWLEDGE &amp; PRACTICE</b>		
<i>PEER LEARNING</i>	Agree=20 (80.0) Neutral=5 (20.0) Disagree=0 (0.0)	Agree=10 (43.5) Neutral=13 (56.5) Disagree=0 (0.0)
<i>COLLABORATIVE LEARNING</i>	Agree=20 (80.0) Neutral=5 (20.0) Disagree=0 (0.0)	Agree=10 (43.5) Neutral=12 (52.2) Disagree=1 (4.3)
<i>PEER OBSERVATION</i>	Agree=19 (76.0) Neutral=6 (24.0) Disagree=0 (0.0)	Agree=9 (39.1) Neutral=14 (60.9) Disagree=0 (0.0)
<i>PEER FEEDBACK</i>	Agree=16 (64.0) Neutral=9 (36.0) Disagree=0 (0.0)	Agree=10 (43.5) Neutral=13 (56.5) Disagree=0 (0.0)
<b>PROFESSIONALISM</b>		
<i>PEER LEARNING</i>	Agree=15 (60.0) Neutral=9 (36.0) Disagree=1 (4.0)	Agree=8 (34.8) Neutral=13 (56.5) Disagree=2 (8.7)
<i>COLLABORATIVE LEARNING</i>	Agree=16 (64.0) Neutral=7 (28.0) Disagree=2 (8.0)	Agree=8 (34.8) Neutral=11 (47.8) Disagree=4 (17.4)
<i>PEER OBSERVATION</i>	Agree=16 (64.0) Neutral=9 (36.0) Disagree=0 (0.0)	Agree=8 (34.8) Neutral=14 (60.9) Disagree=1 (4.3)
<i>PEER FEEDBACK</i>	Agree=14 (56.0) Neutral=8 (32.0) Disagree=3 (12.0)	Agree=8 (34.8) Neutral=13 (56.5) Disagree=2 (8.7)
<b>COMMUNICATION</b>		
<i>PEER LEARNING</i>	Agree=18 (72.0) Neutral=6 (24.0) Disagree=1 (4.0)	Agree=12 (52.2) Neutral=11 (47.8) Disagree=0 (0.0)
<i>COLLABORATIVE LEARNING</i>	Agree=16 (64.0) Neutral=6 (24.0) Disagree=3 (12.0)	Agree=12 (52.2) Neutral=10 (43.5) Disagree=1 (4.3)
<i>PEER OBSERVATION</i>	Agree=19 (76.0) Neutral=6 (24.0) Disagree=0 (0.0)	Agree=13 (56.5) Neutral=10 (43.5) Disagree=0 (0.0)
<i>PEER FEEDBACK</i>	Agree=19 (76.0) Neutral=5 (20.0) Disagree=1 (4.0)	Agree=12 (52.2) Neutral=10 (43.5) Disagree=1 (4.3)

<b>EDUCATORS</b>	<b>B</b>	<b>C</b>
	<b>Frequency</b>	<b>Frequency</b>
	n=25 (%)	n=23 (%)
<b>TEAM WORKING</b>		
<i>PEER LEARNING</i>	Agree=15 (60.0) Neutral=7 (28.0) Disagree=3 (12.0)	Agree=11 (47.8) Neutral=10 (43.5) Disagree=2 (8.7)
<i>COLLABORATIVE LEARNING</i>	Agree=16 (64.0) Neutral=6 (24.0) Disagree=3 (12.0)	Agree=11 (47.8) Neutral=8 (34.8) Disagree=4 (17.4)
<i>PEER OBSERVATION</i>	Agree=14 (56.0) Neutral=7 (28.0) Disagree=4 (16.0)	Agree=11 (47.8) Neutral=8 (34.8) Disagree=4 (17.4)
<i>PEER FEEDBACK</i>	Agree=16 (64.0) Neutral=6 (24.0) Disagree=3 (12.0)	Agree=9 (39.1) Neutral=12 (52.2) Disagree=2 (8.7)
<b>SERVICE DELIVERY</b>		
<i>PEER LEARNING</i>	Agree=15 (60.0) Neutral=9 (36.0) Disagree=1 (4.0)	Agree=12 (52.2) Neutral=10 (43.5) Disagree=1 (4.3)
<i>COLLABORATIVE LEARNING</i>	Agree=15 (60.0) Neutral=9 (36.0) Disagree=1 (4.0)	Agree=12 (52.2) Neutral=9 (39.1) Disagree=2 (8.7)
<i>PEER OBSERVATION</i>	Agree=15 (60.0) Neutral=6 (24.0) Disagree=4 (16.0)	Agree=12 (52.2) Neutral=10 (43.5) Disagree=1 (4.3)
<i>PEER FEEDBACK</i>	Agree=14 (56.0) Neutral=10 (40.0) Disagree=1 (4.0)	Agree=10 (43.5) Neutral=12 (52.2) Disagree=1 (4.3)

**Table 4.9 Educators' opinions (median/IQR) of the role of the components of peer learning in the attainment of dietetic professional competence**

<b>EDUCATORS</b>	<b>B</b>	<b>C</b>	<b>B VS C</b>
	<b>Median(IQR)</b>	<b>Median(IQR)</b>	<b>P-value</b>
	(n=25)	(n=23)	
<b>KNOWLEDGE &amp; PRACTICE</b>			
<i>PEER LEARNING</i>	1.33(0.26)	1.72(0.64)	<b>0.044</b>
<i>COLLABORATIVE LEARNING</i>	1.33(0.29)	1.52(0.67)	0.098
<i>PEER OBSERVATION</i>	1.37(0.37)	1.59(0.55)	<b>0.031</b>
<i>PEER FEEDBACK</i>	1.37(0.49)	1.70(0.70)	0.160
<b>PROFESSIONALISM</b>			
<i>PEER LEARNING</i>	1.39(0.57)	1.74(0.74)	<b>0.044</b>
<i>COLLABORATIVE LEARNING</i>	1.27(0.77)	1.73(0.91)	<b>0.038</b>
<i>PEER OBSERVATION</i>	1.36(0.81)	1.82(0.82)	<b>0.034</b>
<i>PEER FEEDBACK</i>	1.45(0.95)	1.91(0.91)	0.082
<b>COMMUNICATION</b>			
<i>PEER LEARNING</i>	1.37(0.57)	1.52(0.78)	0.145
<i>COLLABORATIVE LEARNING</i>	1.44(0.61)	1.56(1.00)	0.187
<i>PEER OBSERVATION</i>	1.22(0.44)	1.44(0.67)	0.104
<i>PEER FEEDBACK</i>	1.22(0.50)	1.44(1.00)	0.264
<b>TEAM WORKING</b>			
<i>PEER LEARNING</i>	1.33(0.83)	1.50(1.17)	0.244
<i>COLLABORATIVE LEARNING</i>	1.00(0.75)	1.50(1.00)	0.209
<i>PEER OBSERVATION</i>	1.00(1.00)	1.50(1.00)	0.797
<i>PEER FEEDBACK</i>	1.00(1.00)	2.00(1.00)	0.094
<b>SERVICE DELIVERY</b>			
<i>PEER LEARNING</i>	1.33(0.67)	1.83(1.00)	0.403
<i>COLLABORATIVE LEARNING</i>	1.00(1.00)	1.50(1.00)	0.391
<i>PEER OBSERVATION</i>	1.00(1.00)	1.50(1.00)	0.730
<i>PEER FEEDBACK</i>	1.00(1.00)	2.00(1.00)	0.253

^Median educator scores (IQR) and comparison (Mann-Whitney U Test) for agreement that Peer Learning, Collaborative Learning, Peer Observation and Peer Feedback helped attain professional competence following Placement B (Timepoint B) and Placement C (Timepoint C) are shown.

→ 1=strongly agree/agree, 2=neutral, 3=disagree/strongly disagree

Overall, both Placement B educators (Timepoint B) and Placement C educators (Timepoint C) agreed/strongly agreed that ‘peer learning’ and its three individual components (‘collaborative learning’, ‘peer observation’ and ‘peer feedback’) were helpful in attaining competence in the five professional competencies. On comparing median agreement scores between educators who facilitated Placement B and those who facilitated Placement C, there were significant differences between the two groups of educators in the two professional competencies of ‘*knowledge and practice*’ and ‘*professionalism*’ for ‘peer learning’ and some of the components of ‘peer learning’ with Placement C educators having lower agreement scores (Table 4.9).

#### *Knowledge and Practice*

Twenty out of twenty-five (80%) Placement B educators agreed/strongly agreed that all components of ‘peer learning’ helped attain competence in ‘*knowledge and practice*’. Fewer Placement C educators (10/23, 44%) reported agreement that ‘peer learning’, and its three components, were helpful in attaining competence in ‘*knowledge and practice*’. Median scores of agreement were significantly lower than for Placement B educators for ‘peer learning’ ( $P = 0.044$ ) and peer observation ( $P = 0.031$ ), than for Placement C educators.

#### *Professionalism*

Fifteen out of twenty-five (60%) Placement B educators agreed/strongly agreed that all components of ‘peer learning’ helped attain competence in ‘*professionalism*’. Fewer Placement C educators (8/23, 35%) reported agreement that ‘peer learning’, and its three components, were helpful in attaining competence in ‘*professionalism*’. Median scores of agreement were significantly lower than for Placement B educators for ‘peer

learning' ( $P = 0.044$ ), 'collaborative learning' ( $P=0.038$ ) and peer observation ( $P = 0.034$ ), than for Placement C educators.

### *Communication*

Eighteen out of twenty-five (72%) of Placement B educators agreed/strongly agreed that all components of 'peer learning' helped attain competence in '*communication*', with median agreement scores indicating high levels of agreement that 'peer learning' was helpful. While fewer Placement C educators (12/23, 52%) reported agreement that 'peer learning', and its three components, were helpful in attaining competence in '*communication*', there were no significant differences in median scores of agreement between the two groups of educators.

### *Team Working*

Fifteen out of twenty-five (60%) Placement B educators agreed/strongly agreed that all components of 'peer learning' helped attain competence in '*team working*', with median agreement scores indicating high levels of agreement that 'peer learning' was helpful. Less Placement C educators (11/23, 48%) reported agreement that 'peer learning', and its three components, were helpful in attaining competence in '*team working*', but differences between the two groups of educators were not significant.

### *Service Delivery*

Fifteen out of twenty-five (60%) Placement B educators agreed/strongly agreed that all components of 'peer learning' helped attain competence in '*service delivery*', with median agreement scores indicating high levels of agreement that 'peer learning' was helpful. Fewer Placement C educators (12/23, 52%) reported agreement that 'peer

learning’, and its three components, were helpful in attaining competence in ‘*professionalism*’, but there were no significant differences in median scores of agreement between the two groups of educators.

#### **4.3.3 Comparison between Students and Educators**

Differences were examined between students and their educators, for levels of agreement following Placement B and following Placement C, on the contribution of ‘peer learning’ and its individual components (‘collaborative learning’, ‘peer observation’ and ‘peer feedback’) in the attainment of the five professional dietetic competencies: ‘*knowledge & practice*’, ‘*professionalism*’, ‘*communication*’, ‘*team working*’ and ‘*service delivery*’ (Table 4.10).

**Table 4.10 Comparison of students' and educators' opinions of the role of the components of peer learning in the attainment of professional competence**

TIMEPOINT	PLACEMENT B			PLACEMENT C		
	STUDENT Median(IQR) (n=15)	EDUCATOR Median(IQR) (n=25)	P-value	STUDENT Median(IQR) (n=15)	EDUCATOR Median(IQR) (n=23)	P value
<b>KNOWLEDGE &amp; PRACTICE</b>						
<i>PEER LEARNING</i>	1.30(1.59)	1.33(0.26)	0.944	1.50(0.83)	1.72(0.64)	0.268
<i>COLLABORATIVE LEARNING</i>	1.30(0.41)	1.33(0.29)	<b>0.041</b>	1.37(0.56)	1.52(0.67)	0.709
<i>PEER OBSERVATION</i>	1.22(0.74)	1.37(0.37)	0.370	1.48(0.97)	1.59(0.55)	0.402
<i>PEER FEEDBACK</i>	1.19(0.74)	1.37(0.49)	0.258	1.85(1.15)	1.70(0.70)	0.869
<b>PROFESSIONALISM</b>						
<i>PEER LEARNING</i>	1.30(0.91)	1.39(0.57)	0.561	1.81(1.04)	1.74(0.74)	0.643
<i>COLLABORATIVE LEARNING</i>	1.27(0.81)	1.27(0.77)	0.298	1.64(1.36)	1.73(0.91)	0.068
<i>PEER OBSERVATION</i>	1.55(0.55)	1.36(0.81)	0.665	2.27(0.91)	1.82(0.82)	0.106
<i>PEER FEEDBACK</i>	1.09(1.00)	1.45(0.95)	0.933	2.36(1.19)	1.91(0.91)	0.611
<b>COMMUNICATION</b>						
<i>PEER LEARNING</i>	1.15(0.33)	1.37(0.57)	0.307	1.74(0.96)	1.52(0.78)	0.253
<i>COLLABORATIVE LEARNING</i>	1.11(0.56)	1.44(0.61)	0.303	1.33(0.89)	1.56(1.00)	0.695
<i>PEER OBSERVATION</i>	1.11(0.44)	1.22(0.44)	0.259	1.56(1.00)	1.44(0.67)	0.506
<i>PEER FEEDBACK</i>	1.00(0.44)	1.22(0.50)	0.197	1.44(1.22)	1.44(1.00)	0.988
<b>TEAM WORKING</b>						
<i>PEER LEARNING</i>	1.00(0.33)	1.33(0.83)	0.367	2.33(1.33)	1.50(1.17)	0.247
<i>COLLABORATIVE LEARNING</i>	1.00(0.50)	1.00(0.75)	0.366	1.00(1.00)	1.50(1.00)	0.314
<i>PEER OBSERVATION</i>	1.00(1.00)	1.00(1.00)	0.468	2.00(2.00)	1.50(1.00)	0.437
<i>PEER FEEDBACK</i>	1.00(0.00)	1.00(1.00)	0.143	2.00(2.00)	2.00(1.00)	0.655
<b>SERVICE DELIVERY</b>						
<i>PEER LEARNING</i>	1.33(1.00)	1.33(0.67)	0.536	2.33(2.00)	1.83(1.00)	0.555
<i>COLLABORATIVE LEARNING</i>	1.00(0.50)	1.00(1.00)	0.824	2.00(2.00)	1.50(1.00)	0.069
<i>PEER OBSERVATION</i>	1.00(2.00)	1.00(1.00)	0.814	2.00(2.00)	1.50(1.00)	0.161
<i>PEER FEEDBACK</i>	1.00(1.00)	1.00(1.00)	0.696	2.00(2.00)	2.00(1.00)	0.108

^Median student and educator scores (IQR) and comparison (Mann-Whitney U Test) for agreement that Peer Learning, Collaborative Learning, Peer Observation and Peer Feedback helped attain professional competence following Placement B (Timepoint B) and Placement C (Timepoint C) are shown.

→ 1=strongly agree/agree, 2=neutral, 3=disagree/strongly disagree



There were no significant differences between students' and educators' levels of agreement following Placement B except for the role of 'collaborative learning' in development of the professional competency of '*knowledge and practice*' ( $P = 0.041$ ). On examining students' and educators' levels of agreement following Placement C, there were no significant differences between students' and educators' levels of agreement on the role of 'peer learning' or any of its components in the attainment of any of the five professional competencies. This indicates that students and educators are in agreement on the role of 'peer learning' and its individual components in the attainment of the five professional competencies.

## **4.4 Development of professional skills**

### **4.4.1 Students**

Tables 4.11 and 4.12 show students' opinions of 'peer learning' and its three individual components ('collaborative learning', 'peer observation' and 'peer feedback') on the development of six professional skills required of dietetic students: '*active listening*', '*demonstrating empathy*', '*clinical reasoning*', '*developing confidence*', '*rehearsal*' and '*reflective practice*' at three time points. These time points were i) prior to practice placement (Timepoint A), ii) following Placement B (Timepoint B) and iii) following Placement C (Timepoint C). Differences between time points are presented (Table 4.12).

**Table 4.11 Students' opinions (frequencies) of the role of the components of peer learning in the development of professional skills**

<b>STUDENTS</b>	<b>A</b>	<b>B</b>	<b>C</b>
	<b>Frequency</b>	<b>Frequency</b>	<b>Frequency</b>
	n=15 (%)	n=15 (%)	n=15 (%)
<b>ACTIVE LISTENING</b>			
<i>PEER LEARNING</i>	Agree=11 (73.3) Neutral=2 (13.3) Disagree=2 (13.3)	Agree=11 (73.3) Neutral=3 (20.0) Disagree=1 (6.7)	Agree=9 (60.0) Neutral=5 (33.3) Disagree=1 (6.7)
<i>COLLABORATIVE LEARNING</i>	Agree=10 (66.7) Neutral=2 (13.3) Disagree=3 (20.0)	Agree=11 (73.3) Neutral=2 (13.3) Disagree=2 (13.3)	Agree=9 (60.0) Neutral=3 (20.0) Disagree=3 (20.0)
<i>PEER OBSERVATION</i>	Agree=11 (73.3) Neutral=1 (6.7) Disagree=3 (20.0)	Agree=10 (66.7) Neutral=5 (33.3) Disagree=0 (0.0)	Agree=10 (66.7) Neutral=3 (20.0) Disagree=2 (13.3)
<i>PEER FEEDBACK</i>	Agree=10 (66.7) Neutral=2 (13.3) Disagree=3 (20.0)	Agree=11 (73.3) Neutral=3 (20.0) Disagree=1 (6.7)	Agree=9 (60.0) Neutral=3 (20.0) Disagree=3 (20.0)
<b>DEMONSTRATE EMPATHY</b>			
<i>PEER LEARNING</i>	Agree=10 (66.7) Neutral=2 (13.3) Disagree=3 (20.0)	Agree=10 (66.7) Neutral=4 (26.7) Disagree=1 (6.7)	Agree=7 (46.7) Neutral=5 (33.3) Disagree=3 (20.0)
<i>COLLABORATIVE LEARNING</i>	Agree=10 (66.7) Neutral=2 (13.3) Disagree=3 (20.0)	Agree=9 (60.0) Neutral=4 (26.7) Disagree=2 (13.3)	Agree=6 (40.0) Neutral=6 (40.0) Disagree=3 (20.0)
<i>PEER OBSERVATION</i>	Agree=10 (66.7) Neutral=2 (13.3) Disagree=3 (20.0)	Agree=10 (66.7) Neutral=5 (33.3) Disagree=0 (0.0)	Agree=8 (66.7) Neutral=3 (20.0) Disagree=4 (26.7)
<i>PEER FEEDBACK</i>	Agree=10 (66.7) Neutral=2 (13.3) Disagree=3 (20.0)	Agree=11 (73.3) Neutral=3 (20.0) Disagree=1 (6.7)	Agree=7 (46.7) Neutral=4 (26.7) Disagree=4 (26.7)
<b>CLINICAL REASONING</b>			
<i>PEER LEARNING</i>	Agree=12 (80.0) Neutral=3 (20.0) Disagree=0 (0.0)	Agree=12 (80.0) Neutral=3 (20.0) Disagree=0 (0.0)	Agree=11 (73.3) Neutral=2 (13.3) Disagree=2 (13.3)
<i>COLLABORATIVE LEARNING</i>	Agree=11 (73.3) Neutral=3 (20.0) Disagree=1 (6.7)	Agree=10 (66.7) Neutral=4 (26.7) Disagree=1 (6.7)	Agree=12 (80.0) Neutral=1 (6.7) Disagree=2 (13.3)
<i>PEER OBSERVATION</i>	Agree=13 (86.7) Neutral=1 (6.7) Disagree=1 (6.7)	Agree=11 (73.3) Neutral=4 (26.7) Disagree=0 (0.0)	Agree=9 (60.0) Neutral=3 (20.0) Disagree=3 (20.0)
<i>PEER FEEDBACK</i>	Agree=13 (86.7) Neutral=2 (13.3) Disagree=0 (0.0)	Agree=14 (93.3) Neutral=1 (6.7) Disagree=0 (0.0)	Agree=10 (66.7) Neutral=1 (6.7) Disagree=4 (26.7)

<b>STUDENTS</b>	<b>A</b>	<b>B</b>	<b>C</b>
	<b>Frequency</b>	<b>Frequency</b>	<b>Frequency</b>
	<b>n=15 (%)</b>	<b>n=15 (%)</b>	<b>n=15 (%)</b>
<b>DEVELOP CONFIDENCE</b>			
<i>PEER LEARNING</i>	Agree=12 (80.0) Neutral=3 (20.0) Disagree=0 (0.0)	Agree=14 (93.3) Neutral=1 (6.7) Disagree=0 (0.0)	Agree=11 (73.3) Neutral=2 (13.3) Disagree=2 (13.3)
<i>COLLABORATIVE LEARNING</i>	Agree=12 (80.0) Neutral=2 (13.3) Disagree=1 (6.7)	Agree=12 (80.0) Neutral=2 (13.3) Disagree=1 (6.7)	Agree=12 (80.0) Neutral=1 (6.7) Disagree=2 (13.3)
<i>PEER OBSERVATION</i>	Agree=12 (80.0) Neutral=2 (13.3) Disagree=1 (6.7)	Agree=13 (86.7) Neutral=2 (13.3) Disagree=0 (0.0)	Agree=10 (66.7) Neutral=1 (6.7) Disagree=4 (26.7)
<i>PEER FEEDBACK</i>	Agree=12 (80.0) Neutral=3 (20.0) Disagree=0 (0.0)	Agree=14 (93.3) Neutral=1 (6.7) Disagree=0 (0.0)	Agree=11 (73.3) Neutral=4 (26.7) Disagree=0 (0.0)
<b>REHEARSAL</b>			
<i>PEER LEARNING</i>	Agree=12 (80.0) Neutral=3 (20.0) Disagree=0 (0.0)	Agree=13 (86.7) Neutral=2 (13.3) Disagree=0 (0.0)	Agree=10 (66.7) Neutral=3 (20.0) Disagree=2 (13.3)
<i>COLLABORATIVE LEARNING</i>	Agree=12 (80.0) Neutral=2 (13.3) Disagree=1 (6.7)	Agree=11 (73.3) Neutral=3 (20.0) Disagree=1 (6.7)	Agree=11 (73.3) Neutral=2 (13.3) Disagree=2 (13.3)
<i>PEER OBSERVATION</i>	Agree=14 (93.3) Neutral=1 (6.7) Disagree=0 (0.0)	Agree=13 (86.7) Neutral=2 (13.3) Disagree=0 (0.0)	Agree=9 (60.0) Neutral=4 (26.7) Disagree=2 (13.3)
<i>PEER FEEDBACK</i>	Agree=11 (73.3) Neutral=3 (20.0) Disagree=1 (6.7)	Agree=13 (86.7) Neutral=2 (13.3) Disagree=0 (0.0)	Agree=10 (66.7) Neutral=5 (33.3) Disagree=0 (0.0)
<b>REFLECTIVE PRACTICE</b>			
<i>PEER LEARNING</i>	Agree=12 (80.0) Neutral=2 (13.3) Disagree=1 (6.7)	Agree=13 (86.7) Neutral=2 (13.3) Disagree=0 (0.0)	Agree=12 (80.0) Neutral=3 (20.0) Disagree=0 (0.0)
<i>COLLABORATIVE LEARNING</i>	Agree=12 (80.0) Neutral=2 (13.3) Disagree=1 (6.7)	Agree=14 (93.3) Neutral=1 (6.7) Disagree=0 (0.0)	Agree=10 (66.7) Neutral=5 (33.3) Disagree=0 (0.0)
<i>PEER OBSERVATION</i>	Agree=13 (86.7) Neutral=1 (6.7) Disagree=1 (6.7)	Agree=13 (86.7) Neutral=2 (13.3) Disagree=0 (0.0)	Agree=12 (80.0) Neutral=2 (13.3) Disagree=1 (6.7)
<i>PEER FEEDBACK</i>	Agree=12 (80.0) Neutral=2 (13.3) Disagree=1 (6.7)	Agree=13 (86.7) Neutral=2 (13.3) Disagree=0 (0.0)	Agree=13 (86.7) Neutral=2 (13.3) Disagree=0 (0.0)

**Table 4.12 Students' opinions (median/IQR) of the role of the components of peer learning in the development of professional skills**

STUDENTS	A	B	C	A VS B	A VS C	B VS C
	Median(IQR)	Median(IQR)	Median(IQR)	P-value	P-value	P-value
	n=15	n=15	n=15			
<b>ACTIVE LISTENING</b>						
<i>PEER LEARNING</i>	1.00(1.00)	1.00(0.67)	1.33(1.00)	0.200	0.812	0.227
<i>COLLABORATIVE LEARNING</i>	1.00(1.00)	1.00(1.00)	1.00(1.00)	0.414	0.739	0.334
<i>PEER OBSERVATION</i>	1.00(1.00)	1.00(1.00)	1.00(1.00)	0.414	1.000	0.480
<i>PEER FEEDBACK</i>	1.00(1.00)	1.00(1.00)	1.00(1.00)	0.257	0.748	0.157
<b>DEMONSTRATE EMPATHY</b>						
<i>PEER LEARNING</i>	1.00(1.00)	1.33(0.67)	1.67(1.00)	0.286	0.171	<b>0.030</b>
<i>COLLABORATIVE LEARNING</i>	1.00(1.00)	1.00(1.00)	2.00(1.00)	1.000	0.157	0.206
<i>PEER OBSERVATION</i>	1.00(1.00)	1.00(1.00)	1.00(2.00)	0.180	0.453	0.084
<i>PEER FEEDBACK</i>	1.00(1.00)	1.00(1.00)	2.00(2.00)	0.257	0.330	0.059
<b>CLINICAL REASONING</b>						
<i>PEER LEARNING</i>	1.00(0.33)	1.00(0.33)	1.33(0.67)	0.615	0.079	0.201
<i>COLLABORATIVE LEARNING</i>	1.00(1.00)	1.00(1.00)	1.00(0.00)	0.763	1.000	0.915
<i>PEER OBSERVATION</i>	1.00(0.00)	1.00(1.00)	1.00(1.00)	0.655	0.084	0.160
<i>PEER FEEDBACK</i>	1.00(0.00)	1.00(0.00)	1.00(2.00)	1.000	0.083	0.059
<b>DEVELOP CONFIDENCE</b>						
<i>PEER LEARNING</i>	1.00(0.67)	1.00(0.33)	1.00(0.67)	0.339	0.326	0.122
<i>COLLABORATIVE LEARNING</i>	1.00(0.00)	1.00(0.00)	1.00(0.00)	1.000	0.748	0.705
<i>PEER OBSERVATION</i>	1.00(0.00)	1.00(0.00)	1.00(2.00)	0.414	0.163	0.083
<i>PEER FEEDBACK</i>	1.00(0.00)	1.00(0.00)	1.00(2.00)	0.317	0.165	0.059
<b>REHEARSAL</b>						
<i>PEER LEARNING</i>	1.00(0.33)	1.00(0.33)	1.33(1.00)	0.829	0.120	0.105
<i>COLLABORATIVE LEARNING</i>	1.00(0.00)	1.00(1.00)	1.00(1.00)	0.783	0.589	0.792
<i>PEER OBSERVATION</i>	1.00(0.00)	1.00(0.00)	1.00(0.00)	0.564	0.053	0.058
<i>PEER FEEDBACK</i>	1.00(1.00)	1.00(0.00)	1.00(0.00)	0.180	0.165	0.052
<b>REFLECTIVE PRACTICE</b>						
<i>PEER LEARNING</i>	1.00(0.33)	1.00(0.00)	1.33(0.33)	0.343	0.615	0.159
<i>COLLABORATIVE LEARNING</i>	1.00(0.00)	1.00(0.00)	1.00(1.00)	0.577	0.739	0.180
<i>PEER OBSERVATION</i>	1.00(0.00)	1.00(0.00)	1.00(0.00)	0.705	0.564	0.480
<i>PEER FEEDBACK</i>	1.00(0.00)	1.00(0.00)	1.00(0.00)	0.102	1.000	0.157

^Median student scores (IQR) and comparison (Wilcoxon SR Test) for agreement that Peer Learning, Collaborative Learning, Peer Observation & Peer Feedback helped develop professional skills prior to Placement B (Timepoint A), following Placement B (Timepoint B) and following Placement C (Timepoint C) are shown.

→ 1=strongly agree/agree, 2=neutral, 3=disagree/strongly disagree

Overall, a similar proportion of students agreed that ‘peer learning’ and its three individual components (‘collaborative learning’, ‘peer observation’ and ‘peer feedback’) were helpful in developing the six professional skills at Timepoint A, Timepoint B and Timepoint C (Table 4.11), with median scores at all three time points indicating high levels of agreement with this (Table 4.12). There were no statistically significant differences in students’ levels of agreement that all components of ‘peer learning’ were helpful in developing all six professional skills: ‘*active listening*’, ‘*demonstrating empathy*’, ‘*clinical reasoning*’, ‘*developing confidence*’, ‘*rehearsal*’ and ‘*reflective practice*’ at all three time points, except for the role of ‘peer learning’ in developing the skill of ‘*demonstrating empathy*’ with significantly lower agreement between Placement B and Placement C ( $P = 0.030$ ).

#### **4.4.2 Educators**

Tables 4.13 and 4.14 show Placement B and Placement C educators’ opinions of ‘peer learning’ and its three individual components (‘collaborative learning’, ‘peer observation’ and ‘peer feedback’) on the development of six professional skills required of dietetic students: ‘*active listening*’, ‘*demonstrating empathy*’, ‘*clinical reasoning*’, ‘*developing confidence*’, ‘*rehearsal*’ and ‘*reflective practice*’ at two time points. Differences between time points are presented.

**Table 4.13 Educators' opinions (frequencies) of the role of the components of peer learning in the development of professional skills**

<b>EDUCATORS</b>	<b>PLACEMENT B</b>	<b>PLACEMENT C</b>
	<b>Frequency</b>	<b>Frequency</b>
	n=25 (%)	n=23 (%)
<b>ACTIVE LISTENING</b>		
<i>PEER LEARNING</i>	Agree=22 (88.0) Neutral=3 (12.0) Disagree=0 (0.0)	Agree=13 (56.5) Neutral=7 (30.4) Disagree=3 (13.0)
<i>COLLABORATIVE LEARNING</i>	Agree=21 (84.0) Neutral=1 (4.0) Disagree=3 (12.0)	Agree=10 (43.5) Neutral=8 (34.8) Disagree=5 (21.7)
<i>PEER OBSERVATION</i>	Agree=22 (88.0) Neutral=3 (12.0) Disagree=0 (0.0)	Agree=12 (52.2) Neutral=8 (34.8) Disagree=3 (13.0)
<i>PEER FEEDBACK</i>	Agree=23 (92.0) Neutral=2 (8.0) Disagree=0 (0.0)	Agree=15 (65.2) Neutral=7 (30.4) Disagree=1 (4.3)
<b>DEMONSTRATE EMPATHY</b>		
<i>PEER LEARNING</i>	Agree=21 (84.0) Neutral=3 (12.0) Disagree=1 (4.0)	Agree=10 (43.5) Neutral=10 (43.5) Disagree=3 (13.0)
<i>COLLABORATIVE LEARNING</i>	Agree=20 (80.0) Neutral=2 (8.0) Disagree=3 (12.0)	Agree=9 (39.1) Neutral=8 (34.8) Disagree=6 (26.1)
<i>PEER OBSERVATION</i>	Agree=21 (84.0) Neutral=3 (12.0) Disagree=1 (4.0)	Agree=11 (47.8) Neutral=9 (39.1) Disagree=3 (13.0)
<i>PEER FEEDBACK</i>	Agree=21 (84.0) Neutral=4 (16.0) Disagree=0 (0.0)	Agree=10 (43.5) Neutral=11 (47.8) Disagree=2 (8.7)
<b>CLINICAL REASONING</b>		
<i>PEER LEARNING</i>	Agree=21 (84.0) Neutral=4 (16.0) Disagree=0 (0.0)	Agree=16 (69.6) Neutral=6 (26.1) Disagree=1 (4.3)
<i>COLLABORATIVE LEARNING</i>	Agree=20 (80.0) Neutral=3 (12.0) Disagree=2 (8.0)	Agree=15 (65.2) Neutral=7 (30.4) Disagree=1 (4.3)
<i>PEER OBSERVATION</i>	Agree=21 (84.0) Neutral=4 (16.0) Disagree=0 (0.0)	Agree=14 (60.9) Neutral=8 (34.8) Disagree=1 (4.3)
<i>PEER FEEDBACK</i>	Agree=21 (84.0) Neutral=4 (16.0) Disagree=0 (0.0)	Agree=17 (73.9) Neutral=6 (26.1) Disagree=0 (0.0)

<b>EDUCATORS</b>	Placement B	placement C
	<b>Frequency</b>	<b>Frequency</b>
	n=25 (%)	n=23 (%)
<b>DEVELOP CONFIDENCE</b>		
<i>PEER LEARNING</i>	Agree=20 (80.0) Neutral=4 (16.0) Disagree=1 (4.0)	Agree=15 (65.2) Neutral=6 (26.1) Disagree=2 (8.7)
<i>COLLABORATIVE LEARNING</i>	Agree=21 (84.0) Neutral=1 (4.0) Disagree=3 (12.0)	Agree=16 (69.6) Neutral=4 (17.4) Disagree=3 (13.0)
<i>PEER OBSERVATION</i>	Agree=20 (80.0) Neutral=3 (12.0) Disagree=2 (8.0)	Agree=15 (65.2) Neutral=5 (21.7) Disagree=3 (13.0)
<i>PEER FEEDBACK</i>	Agree=20 (80.0) Neutral=4 (16.0) Disagree=1 (4.0)	Agree=16 (69.6) Neutral=7 (30.4) Disagree=0 (0.0)
<b>REHEARSAL</b>		
<i>PEER LEARNING</i>	Agree=20 (80.0) Neutral=4 (16.0) Disagree=1 (4.0)	Agree=16 (69.6) Neutral=4 (17.4) Disagree=3 (13.0)
<i>COLLABORATIVE LEARNING</i>	Agree=21 (84.0) Neutral=2 (8.0) Disagree=2 (8.0)	Agree=12 (52.2) Neutral=7 (30.4) Disagree=4 (17.4)
<i>PEER OBSERVATION</i>	Agree=21 (84.0) Neutral=3 (12.0) Disagree=1 (4.0)	Agree=16 (69.6) Neutral=4 (17.4) Disagree=3 (13.0)
<i>PEER FEEDBACK</i>	Agree=19 (76.0) Neutral=5 (20.0) Disagree=1 (4.0)	Agree=17 (73.9) Neutral=5 (21.7) Disagree=1 (4.3)
<b>REFLECTIVE PRACTICE</b>		
<i>PEER LEARNING</i>	Agree=23 (92.0) Neutral=2 (8.0) Disagree=0 (0.0)	Agree=15 (65.2) Neutral=6 (26.1) Disagree=2 (8.7)
<i>COLLABORATIVE LEARNING</i>	Agree=24 (96.0) Neutral=1 (4.0) Disagree=0 (0.0)	Agree=14 (60.9) Neutral=7 (30.4) Disagree=2 (8.7)
<i>PEER OBSERVATION</i>	Agree=22 (88.0) Neutral=3 (12.0) Disagree=0 (0.0)	Agree=15 (65.2) Neutral=6 (26.1) Disagree=2 (8.7)
<i>PEER FEEDBACK</i>	Agree=22 (88.0) Neutral=3 (12.0) Disagree=0 (0.0)	Agree=16 (69.6) Neutral=7 (30.4) Disagree=0 (0.0)

**Table 4.14 Educators' opinions (median/IQR) of the role of the components of peer learning in the development of professional skills**

<b>EDUCATORS</b>	<b>PLACEMENT B</b>	<b>PLACEMENT C</b>	<b>B VS C</b>
	<b>Median(IQR)</b>	<b>Median(IQR)</b>	<b>P-value</b>
	(n=25)	(n=23)	
<b>ACTIVE LISTENING</b>			
<i>PEER LEARNING</i>	1.00(0.00)	1.33(1.00)	<b>0.001</b>
<i>COLLABORATIVE LEARNING</i>	1.00(0.00)	2.00(1.00)	<b>0.009</b>
<i>PEER OBSERVATION</i>	1.00(0.00)	1.00(1.00)	<b>0.005</b>
<i>PEER FEEDBACK</i>	1.00(0.00)	1.00(1.00)	<b>0.022</b>
<b>DEMONSTRATE EMPATHY</b>			
<i>PEER LEARNING</i>	1.00(0.33)	1.67(1.33)	<b>0.003</b>
<i>COLLABORATIVE LEARNING</i>	1.00(0.00)	2.00(2.00)	<b>0.008</b>
<i>PEER OBSERVATION</i>	1.00(0.00)	2.00(1.00)	<b>0.010</b>
<i>PEER FEEDBACK</i>	1.00(0.00)	2.00(1.00)	<b>0.003</b>
<b>CLINICAL REASONING</b>			
<i>PEER LEARNING</i>	1.00(0.33)	1.33(0.67)	0.057
<i>COLLABORATIVE LEARNING</i>	1.00(0.00)	1.00(1.00)	0.326
<i>PEER OBSERVATION</i>	1.00(0.00)	1.00(1.00)	0.067
<i>PEER FEEDBACK</i>	1.00(0.00)	1.00(1.00)	0.395
<b>DEVELOP CONFIDENCE</b>			
<i>PEER LEARNING</i>	1.00(0.33)	1.00(0.67)	0.379
<i>COLLABORATIVE LEARNING</i>	1.00(0.00)	1.00(1.00)	0.298
<i>PEER OBSERVATION</i>	1.00(0.00)	1.00(1.00)	0.266
<i>PEER FEEDBACK</i>	1.00(0.00)	1.00(1.00)	0.467
<b>REHEARSAL</b>			
<i>PEER LEARNING</i>	1.00(0.33)	1.33(0.67)	0.075
<i>COLLABORATIVE LEARNING</i>	1.00(0.00)	1.00(1.00)	<b>0.025</b>
<i>PEER OBSERVATION</i>	1.00(0.00)	1.00(1.00)	0.216
<i>PEER FEEDBACK</i>	1.00(0.50)	1.00(1.00)	0.870
<b>REFLECTIVE PRACTICE</b>			
<i>PEER LEARNING</i>	1.00(0.00)	1.33(1.00)	<b>0.008</b>
<i>COLLABORATIVE LEARNING</i>	1.00(0.00)	1.00(1.00)	<b>0.003</b>
<i>PEER OBSERVATION</i>	1.00(0.00)	1.00(1.00)	0.113
<i>PEER FEEDBACK</i>	1.00(0.00)	1.00(1.00)	0.120

^Median educator scores (IQR) and comparison (Mann-Whitney U Test) for agreement that Peer Learning, Collaborative Learning, Peer Observation and Peer Feedback helped attain professional skills following Placement B (Timepoint B) and Placement C (Timepoint C) are shown.

→ 1=strongly agree/agree, 2=neutral, 3=disagree/strongly disagree



Placement B educators were consistent in agreeing/strongly agreeing that ‘peer learning’ and its three individual components (‘collaborative learning’, ‘peer observation’ and ‘peer feedback’) contributed to developing all six professional skills. The numbers of Placement B educators in agreement with this ranged from 20/25 (80%) and 23/25 (92%). There was, however, a wider range in the median agreement scores of Placement C educators, with numbers in agreement ranging from 10/23 (44%) to 16/23 (70%). On examining differences in agreement scores between Placement B and Placement C educators, there were significant differences in scores in ‘*active listening*’ and ‘*demonstrating empathy*’ for ‘peer learning’ and all three components of ‘peer learning’. A greater number of Placement B educators than Placement C educators reported agreement that ‘peer learning’ was useful for ‘*active listening*’ (22/25, 88% versus 13/23, 57%) and for ‘*demonstrating empathy*’ (21/25, 84% versus 10/23, 44%). Some significant differences were also observed in components of ‘peer learning’ for development of ‘*reflective practice*’, with more Placement B educators than Placement C educators (23/25, 92% versus 15/23, 65%) in agreement regarding its helpfulness (Tables 4.13 and 4.14).

#### **4.4.3 Comparison between Students and Educators**

Table 4.15 shows students’ and educators’ opinions of ‘peer learning’ and its three individual components (‘collaborative learning’, ‘peer observation’ and ‘peer feedback’) in the development of professional skills required of dietetic students: ‘*active listening*’, ‘*demonstrating empathy*’, ‘*clinical reasoning*’, ‘*developing confidence*’, ‘*rehearsal*’ and ‘*reflective practice*’ following Placement B (Timepoint B) and Placement C (Timepoint C). Comparison between students and educators agreement between Timepoints B and C is also shown (Table 4.15).

**Table 4.15 Comparison of students' and educators' opinions of the role of the components of peer learning in the development of professional skills**

TIMEPOINT	PLACEMENT B			PLACEMENT C		
	STUDENT	EDUCATOR		STUDENT	EDUCATOR	
	Median(IQR)	Median(IQR)	P-value	Median(IQR)	Median(IQR)	P value
	(n=15)	(n=25)		(n=23)	(n=23)	
<b>ACTIVE LISTENING</b>						
<i>PEER LEARNING</i>	1.00(0.67)	1.00(0.00)	0.166	1.33(1.00)	1.33(1.00)	0.771
<i>COLLABORATIVE LEARNING</i>	1.00(1.00)	1.00(0.00)	0.471	1.00(1.00)	2.00(1.00)	0.435
<i>PEER OBSERVATION</i>	1.00(1.00)	1.00(0.00)	0.107	1.00(1.00)	1.00(1.00)	0.467
<i>PEER FEEDBACK</i>	1.00(1.00)	1.00(0.00)	0.105	1.00(1.00)	1.00(1.00)	0.529
<b>DEMONSTRATE EMPATHY</b>						
<i>PEER LEARNING</i>	1.33(0.67)	1.00(0.33)	0.183	1.67(1.00)	1.67(1.33)	0.844
<i>COLLABORATIVE LEARNING</i>	1.00(1.00)	1.00(0.00)	0.232	2.00(1.00)	2.00(2.00)	0.811
<i>PEER OBSERVATION</i>	1.00(1.00)	1.00(0.00)	0.248	1.00(2.00)	2.00(1.00)	0.896
<i>PEER FEEDBACK</i>	1.00(1.00)	1.00(0.00)	0.376	2.00(2.00)	2.00(1.00)	0.685
<b>CLINICAL REASONING</b>						
<i>PEER LEARNING</i>	1.00(0.33)	1.00(0.33)	0.438	1.33(0.67)	1.33(0.67)	0.975
<i>COLLABORATIVE LEARNING</i>	1.00(1.00)	1.00(0.00)	0.406	1.00(0.00)	1.00(1.00)	0.475
<i>PEER OBSERVATION</i>	1.00(1.00)	1.00(0.00)	0.420	1.00(1.00)	1.00(1.00)	0.680
<i>PEER FEEDBACK</i>	1.00(0.00)	1.00(0.00)	0.450	1.00(2.00)	1.00(1.00)	0.358
<b>DEVELOP CONFIDENCE</b>						
<i>PEER LEARNING</i>	1.00(0.33)	1.00(0.33)	0.680	1.00(0.67)	1.00(0.67)	0.857
<i>COLLABORATIVE LEARNING</i>	1.00(0.00)	1.00(0.00)	0.833	1.00(0.00)	1.00(1.00)	0.549
<i>PEER OBSERVATION</i>	1.00(0.00)	1.00(0.00)	0.540	1.00(2.00)	1.00(1.00)	0.831
<i>PEER FEEDBACK</i>	1.00(0.00)	1.00(0.00)	0.250	1.00(2.00)	1.00(1.00)	0.779
<b>REHEARSAL</b>						
<i>PEER LEARNING</i>	1.00(0.33)	1.00(0.33)	0.849	1.33(1.00)	1.33(0.67)	0.937
<i>COLLABORATIVE LEARNING</i>	1.00(1.00)	1.00(0.00)	0.471	1.00(1.00)	1.00(1.00)	0.252
<i>PEER OBSERVATION</i>	1.00(0.00)	1.00(0.00)	0.787	1.00(1.00)	1.00(1.00)	0.606
<i>PEER FEEDBACK</i>	1.00(0.00)	1.00(0.05)	0.399	1.00(2.00)	1.00(1.00)	0.349
<b>REFLECTIVE PRACTICE</b>						
<i>PEER LEARNING</i>	1.00(0.33)	1.00(0.33)	0.822	1.33(0.33)	1.33(1.00)	0.587
<i>COLLABORATIVE LEARNING</i>	1.00(0.00)	1.00(0.00)	0.684	1.00(1.00)	1.00(1.00)	0.597
<i>PEER OBSERVATION</i>	1.00(0.00)	1.00(0.00)	0.821	1.00(0.00)	1.00(1.00)	0.357
<i>PEER FEEDBACK</i>	1.00(0.00)	1.00(0.00)	0.168	1.00(0.00)	1.00(1.00)	0.365

^Median student and educator scores (IQR) and comparison (Mann-Whitney U Test) for agreement that Peer Learning, Collaborative Learning, Peer Observation and Peer Feedback helped develop professional skills following Placement B (Timepoint B) and Placement C (Timepoint C) are shown.

– 1=strongly agree/agree, 2=neutral, 3=disagree/strongly disagree

Both students and educators reported high levels of agreement that ‘peer learning’ and its three individual components (‘collaborative learning’, ‘peer observation’ and ‘peer feedback’) were helpful in developing professional skills required of dietetic students: ‘*active listening*’, ‘*demonstrating empathy*’, ‘*clinical reasoning*’, ‘*developing confidence*’, ‘*rehearsal*’ and ‘*reflective practice*’ following Placement B (Timepoint B) and Placement C (Timepoint C). There were no significant differences in levels of agreement between students and educators (Table 4.15).

#### **4.5 Implementation of the 2:1 model**

Students and educators were asked to rate their levels of agreement on different aspects of their preparation for, and the implementation of, the 2:1 model.

Tables 4.16 and 4.17 show students’ and educators’ agreement on preparation for; implementation of, and timing of the 2:1 model at two time points. These time points were i) following Placement B (Timepoint B) and ii) following Placement C (Timepoint C).

**Table 4.16 Students' and educators' opinions (frequencies) of the implementation of the 2:1 model**

PARTICIPANT TIMEPOINT	STUDENT		EDUCATOR	
	B	C	B	C
	Frequency	Frequency	Frequency	Frequency
	n=15 (%)	n=15 (%)	n=25 (%)	n=23 (%)
<b>PREPARATION</b>				
<i>STUDENT'S PEER FACILITATED LEARNING</i>	Agree=13 (86.7) Neutral=2 (13.3) Disagree=0 (0.0)	Agree=11 (73.3) Neutral=3 (20.0) Disagree=1 (6.7)	N/A	N/A
<i>STUDENTS WERE WELL PREPARED FOR 2:1 MODEL</i>	Agree=11 (73.3) Neutral=3 (20.0) Disagree=1 (6.7)	Agree=10 (66.7) Neutral=3 (20.0) Disagree=2 (13.3)	Agree=17 (68.0) Neutral=5 (20.0) Disagree=3 (12.0)	Agree=14 (60.9) Neutral=7 (30.4) Disagree=2 (8.7)
<i>EDUCATORS WERE WELL PREPARED FOR 2:1 MODEL</i>	Agree=9 (60.0) Neutral=4 (26.7) Disagree= 2 (13.3)	Agree=10 (66.7) Neutral=2 (33.3) Disagree= 3 (20.0)	Agree=17 (68.0) Neutral=4 (16.0) Disagree=4 (16.0)	Agree=11 (47.8) Neutral=6 (26.1) Disagree=6 (26.1)
<b>IMPLEMENTATION</b>				
<i>2:1 MODEL REQUIRED WILLING PARTICIPATION FROM STUDENTS</i>	Agree=14 (93.3) Neutral=1 (6.7) Disagree=0 (0.0)	Agree=14 (93.3) Neutral=0 (0.0) Disagree=1 (6.7)	Agree=23 (92.0) Neutral=2 (8.0) Disagree=0 (0.0)	Agree=20 (87.0) Neutral=1 (4.3) Disagree=2 (8.7)
<i>EDUCATORS FACILITATED 2:1 MODEL WELL</i>	Agree=11 (73.3) Neutral=3 (20.0) Disagree=1 (6.7)	Agree=10 (66.7) Neutral=2 (13.3) Disagree=3 (20.0)	N/A	N/A
<i>STUDENTS PARTICIPATED WELL IN 2:1 MODEL</i>	Agree=12 (80.0) Neutral=1 (6.7) Disagree=2 (13.3)	Agree=9 (60.0) Neutral=1 (6.7) Disagree=3 (20.0)	N/A	N/A
<b>TIMING</b>				
<i>2:1 MODEL MOST USEFUL AT BEGINNING</i>	Agree=13 (86.7) Neutral=2 (13.3) Disagree=0 (0.0)	Agree=11 (73.3) Neutral=3 (20.0) Disagree=1 (6.7)	Agree=20 (80.0) Neutral=4 (16.0) Disagree=1 (4.0)	Agree=14 (60.9) Neutral=8 (34.8) Disagree=1 (4.3)
<i>2:1 MODEL MOST USEFUL AT MIDDLE</i>	Agree=10 (66.6) Neutral=5 (33.3) Disagree=0 (0.0)	Agree=4 (26.7) Neutral=7 (46.6) Disagree=4 (26.7)	Agree=18 (72.0) Neutral=7 (28.0) Disagree=0 (0.0)	Agree=9 (39.1) Neutral=11 (47.9) Disagree=3 (13.0)
<i>2:1 MODEL MOST USEFUL AT END</i>	Agree=9 (60.0) Neutral=4 (26.7) Disagree=2 (13.3)	Agree=0 (0.0) Neutral=3 (20.0) Disagree=12 (80.0)	Agree=14 (56.0) Neutral=10 (44.0) Disagree=1 (4.0)	Agree=1 (4.3) Neutral=6 (26.1) Disagree=16 (69.6)

**Table 4.17 Students' and educators' opinions (median/IQR) of the implementation of the 2:1 model**

PARTICIPANT TIMEPOINT	STUDENT			EDUCATOR		
	B	C		B	C	
	Median(IQR)	Median(IQR)	P-value	Median(IQR)	Median(IQR)	P-value
	(n=15)	(n=15)		(n=25)	(n=23)	
<b>PREPARATION</b>						
STUDENT'S PEER FACILITATED LEARNING	1.00(0.00)	1.00(0.00)	0.480	N/A	N/A	N/A
STUDENTS WERE WELL PREPARED FOR 2:1 MODEL	1.00(1.00)	1.00(0.00)	0.527	1.00(1.00)	1.00(1.50)	0.587
EDUCATORS WERE WELL PREPARED FOR 2:1 MODEL	1.00(1.00)	1.00(0.00)	0.776	1.00(1.00)	2.00(1.50)	<b>0.012</b>
<b>IMPLEMENTATION</b>						
2:1 MODEL REQUIRED WILLING PARTICIPATION FROM STUDENTS	1.00(0.50)	1.00(1.00)	0.564	1.00(1.00)	1.00(1.00)	0.372
EDUCATORS FACILITATED 2:1 MODEL WELL	1.00(1.00)	1.00(0.50)	0.484	N/A	N/A	N/A
STUDENTS PARTICIPATED WELL IN 2:1 MODEL	1.00(0.00)	2.00(1.00)	<b>0.046</b>	N/A	N/A	N/A
<b>TIMING</b>						
2:1 MODEL MOST USEFUL AT BEGINNING	1.00(0.00)	1.00(0.50)	0.317	1.00(0.00)	1.00(0.50)	0.192
2:1 MODEL MOST USEFUL AT MIDDLE	1.00(0.50)	2.00(1.00)	<b>0.013</b>	1.00(0.00)	2.00(0.50)	<b>0.001</b>
2:1 MODEL MOST USEFUL AT END	1.00(0.50)	3.00(0.00)	<b>0.004</b>	1.00(0.50)	2.00(1.00)	<b>0.000</b>

^Median student and educator scores (IQR) and comparison (Wilcoxon Test for students and Mann-Whitney U Test for educators) for agreement on preparation for; and implementation and timing of the 2:1 model following Placement B (Timepoint B) and Placement C (Timepoint C) are shown.

→ 1=strongly agree/agree, 2=neutral, 3=disagree/strongly disagree  
N/A = not applicable

#### 4.5.1 Preparation for the 2:1 model

Thirteen students (87%) following Placement B (Timepoint B) and eleven students (73%) following Placement C (Timepoint C) agreed/strongly agreed that their peer facilitated their learning during practice education. There were no significant differences in median scores of agreement between the two time points.

Students' also reported high levels of agreement (n=9-11, 60-73% in agreement) that both students and educators were well prepared for using the 2:1 model at both time points with no significant differences in median agreement scores between the two time points (Tables 4.16 and 4.17). Placement B educators (Timepoint B) and Placement C educators (Timepoint C) were in agreement (68% and 61% respectively agreed) that students were well prepared for using the 2:1 model. Of the Placement B educators, 68% reported that they were well prepared for facilitating the 2:1 model. However, only 48% of Placement C educators agreed with this statement, with a significant difference in median scores of agreement ( $P = 0.012$ ) (Table 4.17).

Comparing students and educator opinion, students and educators at both time points were in agreement that students were well prepared for participating in the 2:1 model. At Timepoint B (following Placement B) both students and Placement B educators agreed that educators were well prepared for facilitating the 2:1 model. At Timepoint C, students agreed that educators were well prepared for facilitating the 2:1 model (67% in agreement). However Placement C educators reported significantly lower levels of agreement with this statement (48% in agreement) with a significant difference median scores of agreement ( $P=0.009$ ) (Table 4.18).

**Table 4.18 Comparison of students' and educators' opinions of the implementation of the 2:1 model**

TIMEPOINT	PLACEMENT B			PLACEMENT C		
	STUDENT	EDUCATOR		STUDENT	EDUCATOR	
	Median(IQR)	Median(IQR)	P-value	Median(IQR)	Median(IQR)	P value
	(n=15)	(n=25)		(n=23)	(n=23)	
<b>PREPARATION</b>						
STUDENTS WERE WELL PREPARED FOR 2:1 MODEL	1.00(1.00)	1.00(1.00)	0.272	1.00(0.50)	1.00(1.50)	0.671
EDUCATORS WERE WELL PREPARED FOR 2:1 MODEL	1.00(1.00)	1.00(1.00)	0.893	1.00(1.00)	2.00(1.50)	<b>0.009</b>
<b>IMPLEMENTATION</b>						
2:1 MODEL REQUIRED WILLING PARTICIPATION FROM STUDENTS	1.00(0.50)	1.00(1.00)	0.728	1.00(1.00)	1.00(1.00)	0.964
<b>TIMING</b>						
2:1 MODEL MOST USEFUL AT BEGINNING	1.00(0.00)	1.00(0.00)	0.976	1.00(0.50)	1.00(0.50)	0.912
2:1 MODEL MOST USEFUL AT MIDPOINT	1.00(0.50)	1.00(0.00)	0.693	2.00(1.00)	2.00(0.50)	0.463
2:1 MODEL MOST USEFUL AT END	1.00(0.50)	1.00(0.50)	0.891	3.00(0.00)	2.00(1.00)	0.062

^Median student and educator scores (IQR) and comparison (Mann-Whitney U Test) for agreement on preparation for; and implementation and timing of the 2:1 model following Placement B (Timepoint B) and Placement C (Timepoint C) are shown.

↪ 1=strongly agree/agree, 2=neutral, 3=disagree/strongly disagree

#### 4.5.2 Implementation of the 2:1 Model

Students at both Timepoint B (following Placement B) and Timepoint C (following Placement C) reported high levels of agreement that successful implementation of the 2:1 model required willing participation from students (93% agreement at both timepoints) and that educators facilitated the 2:1 model well (73% agreement at Timepoint B and 67% at Timepoint C). There were no significant differences in their median agreement scores between Timepoint B and Timepoint C. There was, however,

a significant difference in students agreement with the statement that students participated well in the 2:1 model between Timepoint B (n=12, 80%) and Timepoint C (n=9, 60%), with students reporting lower median scores of agreement following Placement C ( $P = 0.046$ ) (Table 4.17).

There were no significant differences the high levels of agreement from Placement B educators (Timepoint B) and Placement C educators (Timepoint C) that successful implementation of the 2:1 model required willing participation from students (Table 4.17).

There were no significant differences between students and educators high levels of agreement at both time points that successful implementation of the 2:1 model required willing participation from students (Table 4.18).

### **4.5.3 Timing of the 2:1 model**

Students reported consistently high levels of agreement (n=9-13, 60-87% in agreement) that the 2:1 model was useful at the beginning, middle and end of Placement B (Timepoint B). Following Placement C (Timepoint C), students reported similarly high levels of agreement that the 2:1 model was useful at the beginning (n=11, 73% in agreement), but significantly lower levels of agreement that it was useful at the midpoint (n=4, 27% in agreement) and at the end (n=0, 0% in agreement) with significant differences in median scores of agreement at the midpoint ( $P = 0.013$ ) and the end ( $P = 0.004$ ) of Placement C (Table 4.17).



Of the Placement B educators, 80% reported agreement that the 2:1 model was useful at the beginning of Placement B, with 60% and 56% agreeing it was most useful at the midpoint and end of Placement B respectively. Placement C educators (Timepoint C) reported similarly high levels of agreement that the 2:1 model was useful at the beginning of Placement C (61% in agreement), but had significantly lower levels of agreement that it was useful at the midpoint (39% in agreement) and the end (4% in agreement) with significant differences in median scores of agreement between the two groups of educators regarding the usefulness of the 2:1 model at the midpoint ( $P = 0.001$ ) and the end ( $P = 0.000$ ) of Placement C (Table 4.17).

There were no significant differences in students' and educators' agreement scores regarding the usefulness of the 2:1 model at the beginning, midpoint or end of placement, with scores indicating less agreement with its usefulness as the placements progressed (Table 4.18).

## **CHAPTER 5: QUALITATIVE RESULTS**

### **5.1 Interview sample**

Six students and seven practice educators were interviewed following Placement B.

Five students and seven practice educators were interviewed following Placement C.

At Timepoint B, six students were approached for interview and all six students agreed to participate. At Timepoint C, six students were approached for interview and five out of the six students agreed to participate. This high response rate was maximised by the interviews being held at a location and time that students could attend with minimal inconvenience.

Nine Placement B educators were approached for interview at Timepoint B and seven out of nine agreed to participate. At Timepoint C, nine Placement C educators were approached for interview and seven out of nine agreed to participate. Interviews for practice educators were conducted by telephone at the practice educators' convenience by the gatekeeper to maximise the response rate.

### **5.2 Identification of themes**

Following data analysis, four themes were identified; (i) Implementation of the 2:1 model in practice education; (ii) Influence of a peer during practice education; (iii) Impact of the 2:1 model on practice educator workload; (iv) Opportunity for student autonomy within the 2:1 model. Themes and sub-themes are outlined in Table 5.1.

**Table 5.1 Students' and practice educators' perceptions of the use and implementation of the 2:1 model**

<b>Theme 1. Implementation of the 2:1 model in practice education</b>
<ul style="list-style-type: none"> <li>1.1 Preparation and planning for the 2:1 model</li> <li>1.2 Implementation of the 2:1 model</li> <li>1.3 Timing of the 2:1 model</li> </ul>
<b>Theme 2. Influence of a peer during practice education</b>
<ul style="list-style-type: none"> <li>2.1 Peer support</li> <li>2.2 Peer learning</li> </ul>
<b>Theme 3. Impact of the 2:1 model on practice educator workload</b>
<b>Theme 4. Opportunity for student autonomy within the 2:1 model</b>

### **5.3 Theme 1: Implementation of the 2:1 model in practice education**

Three sub-themes were identified within this theme; preparation and planning for the 2:1 model; implementation of the 2:1 model; timing of the 2:1 model. The perceived strengths and weaknesses of using the 2:1 model were discussed within each of these sub-themes.

#### **5.3.1 Preparation and planning for the 2:1 model**

Most students and practice educators from Placement B and Placement C perceived that students and practice educators were well prepared overall for the 2:1 model.

Almost all students interviewed at both time points reported that they were well prepared in college to participate in the 2:1 model during placement. The majority recalled specific sessions on scripting (peer observation) and how to give feedback within the 2:1 model, which were a component of the Professional Practice Studies Module in Year 2, *“we were really well prepared in college, the sessions on how to give feedback, both positive and constructive criticism, what approach was going to be used, so we'd understand, it was really professional”* (Student 02B).

Specific aspects of these classes were deemed by students to be very helpful, *“the preparation in practising case studies, one person would be the patient, one the dietitian and one the scribe, was very good, to develop the skill of scribing. You learn not to write everything down, just how they for example phrased a question. The structure that we learned in college was really good, really positive”* (Student 12B). This helped students to become familiar with the 2:1 model more quickly during placement, *“without the practice of case studies, in groups of three in college, it would have taken me most of the placement to get used to the model, but by the time I got to placement, it only took me a week to get used to it”* (Student 13B).

Both students and practice educators identified that regular training was required to retain skills on giving feedback, with a refresher session on feedback skills, prior to commencement of Placement C, recommended by some, *“Maybe if before Placement C, if we had done the peer feedback model again like we did the Friday before we started PPB or something, to get into it again”* (Student 02C). *“Maybe doing a little bit of practice before we do it on the ward just until they get used to it again and to the dietitian”* (Educator E09C1).

More Placement B educators (six out of seven) than Placement C educators (four out of seven) reflected that students were well prepared for participating in the 2:1 model, *“the students were well prepared and very comfortable using it”* (Educator E05C1). In general, educators perceived themselves to be well prepared to implement the 2:1 model, having participated in practical training sessions facilitated by the practice education coordinator of the undergraduate dietetics programme *“I think we had all the information that we needed to use it, college had been out to explain about the model in advance”* (Educator E05C1).

One practice educator, who was also a student coordinator, had participated in the pilot of the 2:1 model the previous year and reported that her department undertook more preparation for the 2:1 model this year, *“last year, we probably weren’t fully clued in to what we were supposed to do, whereas I think this year we were a lot more prepared. So I think just a little bit of experience helps and hopefully then we’ll do better again next year”* (Educator 01B1). This pre-planning included reducing patient numbers and targeting specific patient types for students in clinics, *“if you don’t plan for using the 2:1 model, it’s going to be very rushed, so for this placement we planned our clinics with students in mind, reducing the number of patients booked in, or hand-picking specific review patients and it worked much better”* (Educator E01B1).

Careful pairing of students prior to placement was also seen as very important by both students and practice educators, *“I think that with whom you’re matched is really important”* (Student 13B). *“The pairings are very important, that people are at a roughly equal footing”* (Educator E01B1) Although there were no issues reported by students or practice educators with any of the student pairs, *“like I don’t know of*

*anyone who had a bad experience” (Student 13B), this was identified as a potential problem, “I can imagine that if I had another student who was not well-matched with me it wouldn’t have been as good” (Student 13B) and “If you had two peers who weren’t seeing eye to eye especially during feedback, I could see that could be a hazard of the 2:1 model” (Student 02B).*

### **5.3.2 Implementation of the 2:1 model**

The implementation of the 2:1 model within practice was influenced by both the participation of the students and the facilitation of the practice educators. Both elements were considered necessary for successful operation of the model.

Students were deemed fully capable of participation in the 2:1 model by practice educators, *“these two we had this year were fantastic and they were well able for it” (Educator E01B1). “They were very capable, strong students, we had no problems or issues with the new model” (Educator E09C1).*

There were few concerns expressed by practice educators that students were reluctant to fully engage in the 2:1 model *“you know they are prepared for a lot of things but they don’t always show that when they are in placement. You can see if they are willing to engage and take it on. (Educator E07C1).*

The success of the students in giving appropriate constructive criticism to each other required time, practise and increasing confidence, according to practice educators, *“I think they just need to practice giving constructive criticism. They’re only going to be*

*able to give it when they're closer to being confident” (Educator E11B1). “I think that they are able to participate in the 2:1 model more effectively and learn from it in Placement C, whereas in Placement B I don't think that they really get the gist of it, it's too early, it takes a lot of practice” (Educator E09C1).*

Students identified successful implementation of the 2:1 model being predominantly determined by the way in which it was facilitated by the practice educators. They reported different experiences of facilitation of the 2:1 model by practice educators during their placement. Some practice educators were perceived as not using the model at all, *“I don't think it was done at all there” (Student 01B)*. Other practice educators were perceived as being very interested in using the 2:1 model, *“our educators were really into it” (Student 13B)*. These discrepancies in attitude and use of the model appeared to be related to a number of factors. Firstly, the practice educator and the placement site, *“it depended on the setting and the dietitian, to what extent they really applied the 2:1 model. We probably wouldn't have done as much scripting and peer feedback as we were supposed to, it wasn't always very peer-led” (Student 01B)*. Secondly, the skills of the practice educator at facilitating the model, *“some dietitians were really good at facilitating the model and some really bad, but it balanced out” (Student 02C)*. Finally, the interest or time that the practice educator had for the model, *“some dietitians didn't really seem to be so interested in it. They just gave their feedback. I think because it's very busy in certain situations, so they didn't really have the time for it” (Student 07B)*. Student coordinators were described by students as very good at facilitating the model, *“the student coordinator, she was really good at facilitating the whole feedback process, much better than the other educators” (Student 10C)*.

Some practice educators also reflected how discrepancies in approach to feedback by some practice educators would reduce the opportunity for the students to practise these skills, *“in their previous placement, I don’t think they had been doing enough reflection and feedback to each other”* (Educator 08C2). The quality of learning gleaned from using the model might also be reduced, *“if the educator that the students are with doesn't have a lot of skill or time to facilitate feedback, the learning that the students get from each other might not be the best”* (Educator E09C1).

The 2:1 model, in particular the peer feedback aspect, was reported by a number of students from both placements to be well structured, *“the 2:1 model worked well. The feedback model was very structured, you knew what way it was going to be done, that made it easier”* (Student 23C). Students perceived that the model was facilitated well by practice educators, *“they were all very honest and helpful. Their role was really to try and facilitate collaborative learning, observation and feedback and to try and make sure we really got the most out of that, because I suppose some people might be hesitant to give feedback”* (Student 19C). Students perceived that they were given time to learn, *“they would ask us questions to try and draw the information out. They didn't spoon feed us or they weren't very military like with what they wanted us to do, but they let us learn at our own pace”* (Student 12B). Students reported that practice educators gave useful feedback, *“they always gave really, really good feedback to us as well”* (Student 12B). Practice educators were described by students as being facilitators rather than trainers, *“they were facilitators really, they let you do your thing and then they let you interact with the other student to see what they would have done and then they step in at the very end saying, “Okay, this is what you did well and this is what you did*



*wrong, and this is how you can do it better” (Student 13B). Students reported how this kind of facilitation of the model supported them in reflective practice “they’d get you to reflect back and think how you’d do it again, so they were all very good” (Student 12B). It was also of benefit for practising clinical reasoning, “we were always given the opportunity to think ourselves and it was very much, “Why do we do that?” We had to tease out our reasoning. You had to justify everything, which was good because it really made you think, “Why am I doing this?” It made it easier then when you were going off to see patients you had a process in your head, because you knew you would be asked. I thought the role of the educator was more supportive” (Student 23C).*

In contrast, there were a number of examples given by students in which the model was poorly facilitated or not attempted at all by the practice educator, *“the 2:1 model ‘wasn’t executed to its full potential’. The peer learning approach including the peer feedback process was mostly followed in the hospital setting but in the Community I don’t think it was done at all, they were less well versed in what the peer led approach was. Some educators would just launch in to their own feedback and say well “I’m saying what you did well and what you didn’t do well” (Student 01B). One student recalled an incident when a practice educator became angry with the students regarding use of the model, “the dietitian got angry, she was like, “we’re going to split you up now”, although this was week two, she said “You’re not doing it properly, this isn’t useful”. It was really bad and you would feel awful” (Student 02C).*

Some practice educators reported that they gained skills in facilitating the feedback process and reflective practice from supervising students using the 2:1 model *“we learned from it ourselves” (Educator E01B1). Others reported that they found it*

difficult to understand their role, *“sometimes it's hard to know whether you're training the students or you're facilitating”* (Educator E04C2).

Clear communication from the practice educator to the students as to what was expected of the students within the model was deemed important by practice educators, *“you have to be really specific in telling the student to come up with something that needs to be improved on and pushing them in to critical thinking”* (Educator E04C2). This included clearly stating the aim of using the model *“the educator facilitating needs to clearly identify the aim of giving feedback is, what is being learned from it as opposed to the student recording it, just for the educator's sake”* (Educator E09C1). Once this guidance was implemented, the model seemed to work well, *“if they're told that they need to find something for the other person to maybe change or improve upon the next time, they're good at doing that, but they do need guidance around that. I think doing that probably worked well with them”* (Educator E08C2).

One practice educator, who described herself/himself as non-confrontational, described the difficulty with explicitly stating that a student was doing something incorrectly and, instead, would address both students, *“I'm probably not very confrontational myself. I would address the two students at the same time, so that hopefully the student who was doing the observation would be able to pick up that I was actually saying, “You didn't pick up on...”* (Educator E05C1).

Some students described the facilitation of the feedback process as being too inflexible where practice educators required the students to give feedback after all tasks even if

the students perceived that there was nothing significant to comment on, *“Sometimes it was like digging really deep to find something. The supervising dietitians could be very rigid with needing to get feedback from the peers after everything that we did, maybe if they were more flexible”* (Student 19C).

The importance of assessing each student within the pair individually was identified by a number of practice educators, *“you have to assess their progression independently”* (Educator E11B1). This was identified as requiring greater consideration when facilitating the 2:1 model, *“it can be very difficult to keep track of which student is doing which part of the assessment across a number of patients. In our department, educators keep their own log of individual student performance and abilities”* (Educator E08C2).

Some Placement C educators were concerned that it could be difficult to ascertain whether students were contributing equally to tasks, *“You will have students where you can't be confident that the work is coming from both of them. You'll get your result but you don't know who put most of the effort in”* (Educator E07C1). The need for regular 1:1 time within the model was also highlighted, *“it can be difficult to get a good overview of each individual student, that's why I think splitting them is beneficial”* (Educator 08C2). This was required for both student assessment and to allow students reflect on their own practice individually, *“I think it's difficult to actually be able to assess a student unless you've seen them working consistently on their own, that they're not reliant on another student. If something is a specific problem week on week that's the time to maybe just isolate the student a little bit and work on it and see if it definitely is a problem. It might help the student to actually be able to identify the*

*problem. I think sometimes when they're working together in a pair they don't have as much insight as they would have had when they're working one-to-one*" (Educator E04C2).

The facilitation of 1:1 time within the model was described by students as being very useful for increasing confidence and independence, *"you know that you're doing it yourself and you're not relying on someone else"* (Student 10C). This was also perceived by students to be a useful way of gauging their current level of competence and planning further development of competence (including use of individual student reflection logs), *"at the end of the week we'd have an overall feedback session, but the dietitian would also meet with us individually to see how are you finding the week, any issues and what to focus on next. I found it really useful. The reflection logs as well helped with that part of the feedback"* (Student 13C).

A concern voiced by both Placement B and Placement C educators was the difficulty that a practice educator might have in obtaining an overall sense of an individual student's performance, in order to accurately assess them. This occurred if there were too many practice educators supervising the students, *"I don't think that having it (the assessment) divided out among a number of dietitians helped, I think it would be better to assign one particular dietitian to just do the outpatient assessing so that they could see the progress over time"* (Educator E05C1). The role of the student coordinator (a practice educator from each placement site with a designated role to oversee and coordinate the student's placement in that site) in supervising student progression in this respect was emphasised, *"where the coordinator's role really lies is knowing*

*you're the person that's going to be there the whole way through and see the weak ones and see the progress that's being made"* (Educator E04C2).

### **5.3.3 Timing of the 2:1 model**

Overall, the 2:1 model was perceived as being most beneficial during the earlier stages of placement, i.e. during Placement B and for the initial weeks of Placement C.

During Placement B, the 2:1 model was reported as being helpful by all students, *"it was really valuable for placement B"* (Student 10C). This opinion was echoed by practice educators, *"the model worked really well"* (Educator E01B1). The only recommendation to split the pair of students before the end of Placement B was in one instance, where one pair of students was in the same dietetics department for the full ten weeks of Placement B (all other student pairs moved between two or three different locations during the ten weeks of Placement B). These two students reported being paired as less useful during the final week of 'consolidation' when a student would have his/her own caseload, *"then I just felt that although I learned from her all the time, I didn't particularly need her with me for some of the things during consolidation that I would have initially needed her for, maybe during outpatients or during the first weeks"* (Student 13B). *"In our case, being in the one place for the whole time, I think towards the end, even the last two weeks, it might have worked better if the pair split up a bit more"* (Student 12B).

During Placement C, peer learning within the 2.1 model was perceived as most useful in the initial weeks by students, *“it was very good to have the paired model during Placement B, but I felt it wasn't as useful later in Placement C. We were learning at the same pace, we wouldn't think of as many things as the dietitians and we had responsibility for your own caseloads”* (Student 19C). This was also reflected by practice educators, *“the model is very supportive for them in those early days”* (Educator E05C1). Peer support remained important for the duration of placement, albeit more so earlier in Placement C, *“I think they definitely still need the support of somebody else and to discuss things together all the time, but the need is definitely not as strong as it would be in the initial four weeks, or initial phases of the C placement”* (Educator E09C1).

As Placement C progressed, many students and practice educators expressed that the peer observation and peer feedback component of the 2:1 model could get very repetitive, *“as we went on, the same things were being repeated in the feedback and it just seemed to become a bit more repetitive, it could take so long to see even one patient”* (Student 10C), at the expense of other learning opportunities, *“the other student could be off doing something else”* (Educator E01C1). While this sentiment was echoed by almost half of Placement C educators interviewed, no Placement B educators reported these concerns.

Students recognised that they needed to learn how to work independently in preparation for the final weeks of Placement C (consolidation), when they are required to manage their own caseload, *“once you're in placement C the expectation is there for you to go off and do things independently. So I think when you are paired, that doesn't really*

*make you do things as independently, because you always have somebody else there”* (Student 19C). This is also required when they enter the workplace after college, *“because you won't be with a peer when working as a dietitian”* (Student 07B). Practice educators were also of this opinion, *“we split them at week 6 or 7 of Placement C. I'd like to have separated them earlier. Peer observation and feedback is more useful earlier in placement when developing core skills, but at the end of Placement C you're expecting them to work single-handedly during consolidation”* (Educator E04C2).

The ideal time for splitting the students in Placement C was recommended by practice educators as somewhere between four and six weeks, *“I think that the 2:1 model works well for that beginning period, 4-6 weeks. They still learn from each other as time goes on, but I think it probably reduces over time, they gain most from each other in the beginning”* (Educator E08C2). Some students recommended two weeks, *“after about 2 weeks it's better to just be on your own”* (Student 19C). Others recommended four weeks, *“I know we were split up after 6 weeks, I think maybe 4 weeks in a pair for C, because you definitely need to be paired at the start just to get your bearings”* (Student 23C).

#### **5.4 Theme 2: Influence of a peer during practice education**

The second theme, “The importance of a peer during practice education”, comprised two sub-themes; peer support and peer learning. The opportunities for peer support and peer learning, and the perceived impact of these opportunities on student learning and

student and practice educator perception of usefulness of the 2:1 model, were discussed within this theme.

#### **5.4.1 Peer Support**

The opportunity for peer support was deemed one of the most important aspects of using the 2:1 model by both students and practice educators. All eleven students interviewed and eleven out of fourteen practice educators identified how beneficial this support was for the students for a number of reasons, including recognition that the 2:1 model formalised the process of peer support during practice education, *“I think the 2:1 model is excellent, it formalises the peer support from a student perspective”* (Educator E04C2).

Having a shared placement experience and being able to discuss this experience informally with a peer was valued by students, and described as contributing towards developing confidence in their abilities, *“I’m just really glad that there was someone there to be able to have to share experiences with, even aside from all the learning, just being able to have someone the same there to be a bit more confident with”* (Student 07B).

The significant challenges of the new learning environment that practice education presented was discussed by students, *“it’s a steep learning curve, your first time in that kind of environment. It’s a lot to take in and I think a one-to-one with a supervisor and just yourself might be a little bit overwhelming”* (Student 19B). Practice educators also



reflected this sentiment, *“the main benefit is supporting each other settling in to a new environment which has its difficulties”* (Educator E08C2).

Having a peer to provide emotional support was more effective than the provision of emotional support from the practice educator alone, according to students, *“it gets emotional a whole lot, you will be stressed. I definitely wouldn’t have survived if I didn’t have my peer”* (Student 02C). This opinion was echoed by practice educators, *“one of them in particular got quite emotional and upset about a patient but the other student answered her concerns and then when I agreed it was stronger coming from both her peer and me as her educator, than me alone”* (Educator E01C1).

Some students and practice educators acknowledged that peer support was very important as placement could be an isolating and intimidating time depending on where the student was placed, *“the model worked very well because they just need that confidence boosting instead of feeling isolated and under the spotlight. It’s less intimidating”* (Educator E05C1). This was particularly apparent if placement required a student to reside away from their usual college or home environment. Moreover, the support extended outside the professional environment, *“because I was put in a place that wasn’t in Dublin, it was nice just to have the support there, even though it probably wasn’t just to do with dietetics”* (Student 13C).

Practice educators reported feeling reassured by the 2:1 model, as they considered that the students could provide some of the emotional and social support for each other that they previously felt obliged to provide, *“I think that it’s a very supportive way of*

*learning and I think as well, it's reassuring for the trainers, that the students have each other. You feel that at least they're not working alone"* (Educator E09C1).

#### **5.4.2 Peer Learning**

Students and practice educators discussed opportunities for students to learn from each other and engage in collaborative learning, peer observation and peer feedback while using the 2:1 model.

Following completion of Placement B, students reported that they learned from each other, *"you learn from them"* (Student 19B). This was echoed by students following Placement C *"the paired model is fantastic and I think I learned an awful lot more by being in a pair for most of my placement, than I would have ever learned on my own"* (Student 23C). Practice educators also reflected this opinion, *"they learn from each other"* (Educator E10C1).

Over half the students and one third of the practice educators reported that paired students compared progress with each other. This was perceived by the students to be useful, *"it's nice to see how the other person is getting on, because you have to question yourself, am I at the right pace and moving on at the same pace, rather than having nothing to compare yourself with"* (Student 02C). Students also perceived that it served to increase motivation, *"you would be less likely to work as hard by yourself"* (Student 12B). Students further reflected that it resulted in increased accountability, *"having a peer making you more accountable, motivates you to do more"* (Student 19B). Practice educators also believed it to be beneficial, *"if they felt they weren't*

*making any progress, having somebody to actually talk it over who was at peer level was much better” (Educator E05C1).*

Students perceived that the collaborative learning component of the 2:1 model gave them the opportunity to discuss more openly with each other what information was relevant to include in an assessment, or alternative ideas regarding an intervention plan. One student might be stronger in one area of practice or remember something that the other student forgot, *“with a peer you're more willing or able to discuss the point more and weigh up pros and cons, whereas with a dietitian you might be that bit meek and just kind of give in. You were able to discuss what you were doing with each other and decide what information was relevant, what was the best approach, a combination of ideas and thoughts. One person might forget something and the other would remember. You work with each other's strengths” (Student 01B).* *“We were always given the opportunity to think ourselves, we had to tease out our reasoning, you had to justify everything” (Student 23C).* This was echoed by practice educators, *“peer learning was good in that they could discuss it together, the plan was made, it wasn't totally off the chart” (Educator E01C1).* Students linked this increased opportunity for practising problem-solving or clinical reasoning skills with increased autonomy, *“in the hospital we could go off, get the information, speak to the patient, decide a plan amongst ourselves and then come back to the dietitian for feedback on it” (Student 19C).* Practice educators also reflected this, *“they can do more problem-solving in the 2:1 model, working with each other. It's more open and discursive which works well” (Educator E08C2).*

Peer observation was perceived to be important by all students, *“the thing I personally found most useful was observing each other, because you’re starting at the same level”* (Student 19B). *“The peer observation was probably the best bit”* (Student 23C). This opinion was voiced by most practice educators, *“I think it was important that they observe each other, and not just a dietitian all the time, they see themselves as more equal and that there’s an alternative way to do things”* (Educator E09C1). *“There’s benefits each step of the way from an observation viewpoint”* (Educator E10C1). *“I think peer observation is extremely important and that’s all we do when we do the behavioural change courses. We learn from that as well”* (Educator E11B1). One student described how she considered peer observation to be beneficial but the practice educator facilitating her placement did not reflect this, *“I know there was one case where I had seen the patients on that ward, and the other student was seeing a very complicated patient with a high output ileostomy. The dietitian said to me, “Sorry, you’re hanging around.” But, I was learning what she was doing with that patient. I thought it was beneficial because I mightn’t have seen the patient, but I learned what you do”* (Student 23C).

The peer observation component of the 2:1 model facilitated students in reflective practice, with most students identifying this opportunity, *“it’s really focused around reflective practice and reflecting on how you have done”* (Student 19B). Most practice educators also highlighted this, *“reflection was a lot more effective from peer observation using the model”* (Educator E09C1). Peer observation was also recognised by students as useful for developing their communication skills, *“you see how the other person communicates”* (Student 19B). *“You develop your communication skills”* (Student 23C).

Having a peer, with whom the student could engage in the feedback process in a non-threatening way, was perceived as being very valuable by almost all students, *“the dietitian is kind of an authoritative figure. I need someone my own age saying, “It’s okay, you’re doing all right””* (Student 13B). Students perceived such peer feedback to be supportive and learned from this, *“everything she said was in a supportive way and I learned from what she told me. She would say, “That word sounded a bit odd. That didn’t work.” So, that I’d know not to say that word again. Or, if I explained something well, she said, “Oh, I like the way you explained that””* (Student 23C). Practice educators attributed value to peer support for similar reasons, *“it’s less intimidating for students having a colleague there to collaborate with and bounce off, even towards the end”* (Educator E05C1).

Students discussed how the feedback process was less daunting when their peer was present, *“you don’t feel like you are getting picked on or....being hard done by or something and then at least your partner is getting the same as well”* (Student 02B). Practice educators reported finding it helpful too, *“students having a peer for feedback makes the atmosphere feels better as opposed to a qualified dietitian telling the student. It feels like a more discussion type of an atmosphere, I think it definitely helps”* (Educator E10B1).

Some students commented on the importance of engaging in the feedback process in a timely manner, preferably directly after a consultation, rather than receiving feedback after a number of consultations, *“I think it was helpful to discuss the patients just after because, even with scripting, if you see another three or four patients who are slotted in*

*to clinic, you're exhausted at the end and you lose what the important points were”* (Student 10C).

Students reported that sometimes it was difficult to give negative feedback on their peer’s performance when they believed that they were at a similar level themselves, *“I wouldn't find the heart to tell someone that, "You were bad". I'd feel bad saying that because I was totally bad as well”* (Student 02C). Some practice educators reported that students emphasised the positive aspects when giving feedback to each other, *“they want to be very polite and nice to each other, I think is what they do in the feedback, so they tend to be quite safe with the feedback”* (Educator E07C1). The practice educator then had to correct this, *“students were very positive when giving feedback but too reluctant to be critical, the dietitian had to then correct this”* (Educator E05C1).

A small number of students were concerned that students might not learn properly if they did not provide effective feedback, *“can a peer pick up on something that it might take a dietitian to understand?”* (Student 01B). This was also the case for a small number of practice educators, *“I don't know if they themselves are giving the feedback effectively enough for the other student to learn from”* (Educator E08C2).

A number of students identified the importance of each student taking responsibility and being accountable to their peer for their participation in the peer feedback process, *“important to get into the peer feedback model again and encourage accountability and engagement in it from your new peer”* (Student 02C).

### **5.5 Theme 3: Impact of the 2:1 model on practice educator workload**

The 2:1 model presented both opportunities and challenges for practice educators in the management of workload and caseload capacity. Practice educators reflected on how they could attend to other work demands, if students undertook some work on their own.

While it was acknowledged that students may spend a long time discussing possible options, the work presented to the practice educator tended to be better, possibly resulting in overall efficiencies, *“there isn't any great difference between having one student or two students, I think it's a very worthwhile approach. I could go off and do my own work and they would have a plan ready for their patient when I returned. They would have discussed options themselves which would have taken time, but the end result was probably better”* (Educator E01C1). The benefit of the practice educators being able to do other work themselves during this was emphasised during discussion of the opportunities presented by the 2:1 model.

While facilitating students to work more independently was possible in a hospital or residential setting, in an outpatient setting where patients have pre-scheduled appointments, a number of practice educators reported that they needed to schedule time for feedback. Students were already noted to require more time than practice educators to review patients, so in combination with time for feedback sessions, clinic capacity could be reduced by 50%, which was considered problematic for clinic waiting lists, particularly for monthly clinics, *“knowing that peer feedback had to be done meant that I scheduled in extra time for this and as a result reduced my clinic*

*numbers in half. Students take longer to see patients anyway. This is a bit of an issue in Community because we only have some clinics once a month” (Educator E10B1).*

In both hospital and community settings, where the practice educators’ caseloads were not reduced when facilitating students, practice educators reported difficulties in trying to maintain full caseloads as well as supervise two students. As a result, a rushed and stressful environment could be perceived, *“feedback from educators in our department is that the 2:1 model is extremely time-consuming. There's not a huge reduction in people's caseload as a consequence of them having students, so people are trying to do student training and still keep up their caseload. It can feel like quite a rushed environment” (Educator E08C2).*

Students described how the practice educators preferred when they worked independently as it allowed them to attend to other workload demands, *“I think they preferred that we learned from each other, had a debate about what we would or wouldn't do. They can get on with their own work and then they could hear a combined answer, or both if we weren't happy to agree” (Student 13B).*

#### **5.6 Theme 4: Opportunity for student autonomy within the 2:1 model**

The structure of the 2:1 model provided opportunities for students to practise working independently of the practice educator. Practice educators reflected that tasks were often more complete if students had the opportunity to work together independently. Students described opportunities for increased autonomy using the model.



Students reported that they could work independently conducting an assessment and formulating a care plan, *“in the hospital we could go off, get the information, figure it out, speak to the patient, decide a plan amongst ourselves and then come back to the dietitian for feedback on it”* (Student 19C).

Practice educators commented that when students were allocated time to work together independently, as described by the 2:1 model, much of the required clinical reasoning and critical thinking was already addressed in the students’ own discussion, resulting in less superficial questions, *“You feel you can give them work. They can work together and discuss things themselves. I think a lot of the questions and queries and issues are often covered in their own discussion”* (Educator E11B1).

## CHAPTER 6: DISCUSSION

### 6.1 Study aims and overview of research findings

The aim of this research was to investigate the use of a collaborative peer learning 2:1 model, based on a previously developed framework, within dietetics practice education in an Irish setting. The following objectives were set to achieve this aim:

- To establish students' and practice educators' opinions on the impact of peer learning (collaborative learning, peer observation and peer feedback) within a 2:1 model on attainment of professional competence during practice education
- To identify students' and practice educators' opinions on whether a 2:1 model facilitated the development of professional skills required of dietetic students during practice education
- To gain insight into students' and practice educators' perceptions of the impact of a 2:1 model on their experience of practice education
- To explore students' and practice educators' perceptions of their preparation for, and implementation of, a 2:1 model during practice education

Students and practice educators in the present study supported the use of a collaborative peer learning 2:1 model (hereafter, 2:1 model), during practice education, as provided for in the framework developed by Lynam *et al.* (2015). Both students and practice

educators reported that a 2:1 model of practice education provided enhanced learning opportunities for students and helped them attain professional competence and develop professional skills throughout Placement B and during the initial weeks of Placement C. Adequate preparation for, and appropriate facilitation of the 2:1 model were identified by students and practice educators as determinants of its successful implementation. Students, and to a lesser extent practice educators, emphasised the importance of a peer in the provision of social and emotional support. This created a comfortable environment in which to learn, throughout both Placement B and Placement C. Students in the present study reported that the 2:1 model provided opportunities for increased autonomy and learning. Practice educators identified that the 2:1 model offered opportunities to adapt their student supervision strategies and manage their workload.

## **6.2 Attainment of professional competence**

Professional competence may be defined as “the habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values and reflection’ requiring ‘the bringing together of different components to perform, do something successfully or manage complex situations” (Epstein & Hundert, 2002) (p. 227) cited in EFAD (2009). It is generally acknowledged that to define, recognise and measure professional competence is difficult (EFAD, 2009) and that the attainment of professional competence during practice education is a complex and challenging task for students (Ibarra-Sáiz et al., 2020).

Students and practice educators in the present study were in agreement that peer learning and each of the individual components of peer learning (collaborative learning, peer observation and peer feedback) within a 2:1 model, were helpful in attaining competence in the five professional competencies investigated, during Placement B and the initial stages of Placement C. The present study, therefore, contributes to the limited evidence on this topic within healthcare professional education. There is little evidence on the attainment of professional competence within healthcare professional practice education using a 2:1 model, with only two studies that measured the impact of peer learning or the 2:1 model on the attainment of professional competence published to date (DeClute & Ladyshevsky, 1993; Sevenhuysen et al., 2014).

The first study, by DeClute and Ladyshevsky (1993) reported that physiotherapy students using a 2:1 collaborative model received significantly higher scores for all seven clinical competencies measured, when compared to those using a 1:1 model. Scores for the four competencies deemed to require a higher level of clinical judgement, i.e. patient evaluation, programme planning, implementation of treatment and professional behaviour, increased most significantly (DeClute & Ladyshevsky, 1993). The results of this study cannot be compared directly with our study as in the present study, achievement of the five specified professional competencies was not scored, instead students were assessed as either competent or not competent. However, the results of the present study at Timepoint B (Placement B) concur with the conclusion of the DeClute & Ladyshevsky study, that the use of a collaborative 2:1 model helped students attain all professional competencies examined during Placement B.

In the second study, by Sevenhuysen *et al.* (2014), the use of a non-collaborative 2:1 model was compared with a collaborative peer learning 2:1 model, also with physiotherapy students, with the authors noting that not all 2:1 models are based on peer learning (Sevenhuysen *et al.*, 2014). No significant difference was reported between the groups in achievement of competencies, as measured by a blinded assessor, the practice educator or self-assessed by the student.

The reasons for the difference in results between the two studies could be due to the different study designs used. In the Sevenhuysen *et al.* (2014) study, the collaborative peer learning 2:1 model was essentially the non-collaborative 2:1 model with the addition of six peer learning activities, rather than peer learning being an integral component of the patient consultation process throughout practice education (Sevenhuysen *et al.*, 2013). Consequently, significant differences in results were unlikely to be achieved. The two papers are however, indicative of the drive for an evidence-based educational model that has the potential to decrease the intensity of educator input into the traditional (non-collaborative) model, while improving, or at least maintaining, student performance (DeClute & Ladyshevsky, 1993; Sevenhuysen *et al.*, 2015).

In the present study, students valued the opportunities that the 2:1 model provided for peer learning, in achieving competence during Placement B and in the initial stages of Placement C, a finding that is widely supported in the literature (Baldry Currens & Bithell, 2003; Dawes & Lambert, 2010; Ladyshevsky, 1993; Martin & Edwards, 1998; Martin *et al.*, 2004; Moore *et al.*, 2003; Morris & Stew, 2007; Roberts *et al.*, 2009a; Rodger *et al.*, 2008; Triggs Nemshick & Shepard, 1996).

Of the three aspects of peer learning investigated in the present study, collaborative learning was identified as the most important component of peer learning over the continuum of Placement B and Placement C in the attainment of the five professional competencies investigated. Collaborative learning is based on the social interdependence theory (Johnson & Johnson, 2005). It involves the division of tasks between peers, followed by the sharing of findings, in order to achieve a common goal, contributing to student learning in the process (Johnson & Johnson, 2009; Topping, 2009). Within the framework of the present study, the use of collaborative learning was perceived by students and practice educators to have motivated students in the attainment of the competencies of 'knowledge and practice', 'professionalism', 'communication', 'team working' and 'service delivery'. Practice educators interviewed reported that when students in the present study engaged in collaborative learning including peer discussion and problem-solving, they often presented work of a higher standard than when working alone. Collaborative learning was, however, widely acknowledged by practice educators to be time-consuming to facilitate. There are a number of qualitative studies in support of these findings, that indicate that the professional competencies of team working (Baldry Currens & Bithell, 2003; Moore et al., 2003; Sevenhuysen, Thorpe, Barker, et al., 2017), communication (Lincoln & McAllister, 1993; Moore et al., 2003; Morris & Stew, 2007; Tai, Molloy, et al., 2016), and knowledge and practice (Lekkas et al., 2007; Triggs Nemshick & Shepard, 1996) may be improved from a collaborative approach within a 2:1 model.

In the present study, the important contribution that peer observation made, particularly in the attainment of competence in 'communication', was recognised by both students and practice educators. Care is required that peer observation is an active task,

requiring the observing student to closely observe and to take notes (script), on the communication techniques used by the lead student during a patient consultation. This facilitates the provision of specific feedback to their peer afterwards, as is described in the framework developed (Lynam et al., 2015). This is regularly done in the presence of the practice educator, who also scripts. The observations of the practice educator and the observing peer are then compared. The importance of active observation is long established in literature on adult learning (Boud & Walker, 1998). A recent study of medical students in Australia reported that students responded well to prescribed active observation tasks, when clearly defined and structured, in order to optimise learning opportunities for achieving professional competencies (Tai et al., 2017a). Proficiency in active observation skills, requiring assessment against prescribed criteria and also known as evaluative judgement, has been reported to be improved by using a peer learning approach (Sevenhuysen et al., 2015; Tai, Canny, et al., 2016). It is an important aspect in the development of competence in the healthcare professional and is compatible with adult learning and lifelong learning approaches (Tai, Molloy, et al., 2016).

Engaging in the feedback process with a peer in a supportive environment was highly regarded by students interviewed in the present study, in helping them to attain professional competence. The peer feedback process was reported to be time-consuming, requiring structured facilitation to be of optimal benefit. The value of peer discussion and peer feedback to students and the importance of its facilitation is well supported in the literature (Alpine et al., 2019; Baldry Currens, 2003; Dawes & Lambert, 2010; Grundy, 1994; Lerchenfeldt et al., 2019; McPake, 2019; Rodger et al., 2008; Sevenhuysen, Thorpe, Molloy, et al., 2017; Tai, Molloy, et al., 2016; Tiberius &

Gaipman, 1985). Peer feedback not only has a direct, positive impact on the achievement of competence in students, but also has been recognised to enhance the positive effects of peer observation and evaluative judgment on the development of competence in students (Ibarra-Sáiz et al., 2020). This is due in part to the added responsibility of having to provide feedback on a peer's performance, which has been found to result in deeper engagement of students with a given task and with the process of peer observation and evaluative judgement (Tai, Canny, et al., 2016). In addition, peer feedback synthesises the output of peer observation into actionable advice for the learner (Ibarra-Sáiz et al., 2020). A flexible approach with peer feedback should be considered, particularly as students progress through practice education. From the findings of the present study, it is worth noting that should a patient consultation or student task contain all of the elements required, that should then be stated, rather than following a prescriptive protocol requiring recommendations for improvement, if not warranted.

In the present study, students perceived formative feedback given directly following a task, containing actions specific to the task just completed, as more useful than summative feedback given after a number of tasks, which tended to be more general in nature. This is in keeping with the staged design of the 2:1 model used, which is structured to allow designated time for students to partake in the feedback process at regular intervals, with the role of students and practice educators clearly defined (Lynam et al., 2015). The importance of timely feedback is also well-documented in pedagogical literature (Boud et al., 2016). The immediate availability of a peer for regular, formal and informal feedback was noted to be a distinct advantage of peer learning during practice education (Alpine et al., 2019; Secomb, 2008; Stenberg et al.,



2020; Tai, Molloy, et al., 2016). Students in the present study highlighted the importance of honest, constructive, effectively communicated peer feedback. These are indicators of high quality feedback, the importance of which is documented in the literature (Ibarra-Sáiz et al., 2020). However, some students and even more educators in the present study reported that students could be reluctant to give each other constructive criticism. Some practice educators were concerned that this could impact on the accuracy of the feedback given and required the practice educator to focus on the negative aspects of a student's performance, to ensure balanced feedback overall. These concerns have also been reported in the literature (Dawes & Lambert, 2010). A number of reasons emerged in the present study for this reluctance, including having a friendly relationship with their peer, not wanting to highlight deficits in the peer's work or having thoughts that they might not perform any better themselves. This issue is also reported within the literature (Tai, Canny, et al., 2016). However, in spite of this, students did indicate the importance of trust or accountability to each other within the student pair, requiring commitment from both peers. The importance of trust in feedback from a peer is discussed in the literature, based on the principles of cooperative learning (Ladyshewsky et al., 1998). Students and practice educators interviewed in the present study did not perceive peer feedback to be less trustworthy than practice educator feedback, in agreement with UK research within dietetics which reported that students trusted feedback from a peer as much as that from a practice educator (Reidlinger et al., 2017). Other researchers meanwhile have reported that students placed higher trust in feedback from a professional than from their peer (Sevenhuysen et al., 2014).

The 2:1 model was ultimately considered by both students and practice educators to be significantly less helpful in the attainment of the five professional competencies in students after the initial period of Placement C. Students and practice educators interviewed perceived that a major drawback of the 2:1 model as they progressed in Placement C was the amount of time that the process of peer observation and peer feedback took. This was perceived as worthwhile during Placement B and at the beginning of Placement C, but after this students and practice educators perceived that students working individually would be more conducive to the attainment of professional competencies. Students wanted increased independence at this stage to demonstrate competency, while practice educators also wished to observe students achieving professional competencies independently. This is an important finding because ultimately the primary concern of students and practice educators during practice education is for the student to achieve professional competence (McPake, 2019). There is very little in the published literature regarding the impact of timing of practice education on the usefulness of a 2:1 model. One study reported that students and practice educators found a 2:1 model more useful earlier in practice education as peer learning was found to be more helpful in the earlier stages because subsequently students were preparing to work independently (O'Connor et al., 2012). Further research is required to determine the optimal use of a 2:1 model beyond Placement B, to help students attain professional competence.

### **6.3 Development of professional skills**

The development of professional skills in the student healthcare practitioner contributes to their attainment of professional competence (Ladyshefsky & Gotjamanos, 1997). A student is unlikely to attain the required professional competence without the development of these professional skills, which have been explicitly described in standards of proficiency for HSCPs in Ireland (CORU, 2019c; Ladyshefsky, 2010; Rodger et al., 2008).

In contrast to the role of the 2:1 model in the attainment of professional competencies being valued more for Placement B than for Placement C, students valued the role of the 2:1 model equally for Placement B and Placement C, in the development of all professional skills ('active listening', 'demonstrating empathy', 'clinical reasoning', 'developing confidence', 'rehearsal' and 'reflective practice'). Therefore, the development of these professional skills may be considered to be a benefit of the 2:1 model. Placement B educators similarly highly regarded the role of peer learning in the development of these six professional skills, while Placement C educators were in agreement for the skills of 'clinical reasoning', 'developing confidence' and 'rehearsal', but not for the skills of 'active listening', 'demonstrating empathy' or 'reflective practice'.

In the present study, using a 2:1 model provided students with an opportunity to rehearse aspects of patient consultations with each other, prior to real patient consultations. The opportunity that collaborative learning offers for students to practise skills on each other has been documented in the literature (Moore et al., 2003; Triggs Nemshick & Shepard, 1996). In the present study it provided opportunities for students

to develop knowledge, communication skills, clinical reasoning skills and confidence in their abilities. Rehearsal represents a central tenet in the Kolb model for experiential learning (Lynam et al., 2015; Parker & Kersner, 1998). This type of role play or simulation has been reported to improve nutrition knowledge, communication and clinical reasoning in dietetic students (Buchholz, Vanderleest, MacMartin, Prescod, & Wilson, 2020). Similarly, there have been reports of role-play increasing medical students' confidence in the skills that they performed (self-efficacy) (Tai, Molloy, et al., 2016). In the present study, a 2:1 model was perceived to facilitate rehearsal when students shared a caseload, an opportunity which is not available to students using a 1:1 individual model, and has been previously reported in the literature (Baldry Currens, 2003; Baldry Currens & Bithell, 2003; Briffa & Porter, 2013; Ladyshevsky, 1993; Moore et al., 2003; Triggs Nemshick & Shepard, 1996; Zavadak et al., 1995).

The opportunity to develop confidence with a peer within a 2:1 model has been described as the facilitating of safe discussion and encouraging of students to voice ideas on patient care planning (Triggs Nemshick & Shepard, 1996). Students in a 2:1 model were reported to have 'contributed to the self-esteem of each other' (Moore et al., 2003) (p. 293). Similar findings have been described by other researchers, including that students were encouraged to exchange ideas in what they perceived to be a safe environment (Baldry Currens & Bithell, 2003). Peer endorsement was also found to boost confidence within a 2:1 model (Sevenhuysen, Thorpe, Molloy, et al., 2017). In the present study, students and practice educators believed that having a peer for informal communication and rehearsal played an important role in the development of students' self-confidence, an important aspect in the development of the novice practitioner (Briffa & Porter, 2013).

In the present study, the collaborative learning approach of the 2:1 model presented an opportunity for developing clinical reasoning skills, with practice educators suggesting that much of the critical thinking and problem-solving was already addressed in the discussions students had with each other, before presenting their work to the practice educator. The acquisition of clinical reasoning skills is essential in the student healthcare professional but predominantly requires experiential learning with challenges to 'teaching' this skill prior to placement (Wijbenga, Bovend'Eerd, & Driessen, 2019). There is much evidence in the literature to support the role of the 2:1 model in providing opportunities for students to engage in clinical reasoning. In qualitative research with physiotherapy students in the US, students reported that the 2:1 model enabled them to engage in clinical reasoning, discussing ideas for treatment plans and their rationale (Triggs Nemshick & Shepard, 1996). Similarly, in the UK, Baldry Currens and Bithell observed that peer discussion between physiotherapy students using a 2:1 model improved clinical reasoning and facilitated understanding and interpretation (Baldry Currens & Bithell, 2003). Two systematic reviews reported similar findings (Baldry Currens, 2003; Secomb, 2008), while another study reported that not only were students able to learn more independently but more complex cases were appropriate for the student pair (Copley & Nelson, 2012). More recently, in a systematic review of peer learning in medical students during practice education, collaborative discussion between students was found to increase diagnostic decision-making, resolve ethical issues and enhance problem-solving with minimal educator input (Tai, Molloy, et al., 2016). Similarly, research in Sweden reported that using a peer learning 2:1 model encouraged student nurses to think critically and take responsibility for their own learning (Mamhidir et al., 2014). A collaborative peer learning 2:1 model was also found by dietetics students in Australia to be helpful in

developing clinical reasoning skills, which students have known difficulties in acquiring (Roberts et al., 2009a).

Perhaps the most significant opportunity for the development of professional skills within the 2:1 model, reported in interviews by both students and practice educators in this study, was for reflective practice. The peer observation component of the 2:1 model, including scripting, was perceived to be particularly useful for developing students' reflective practice skills. Peer scripting has been found to provide 'reflective periods of thinking time' for the observing student to reflect on their own practice while evaluating that of their peer (Alpine et al., 2019) (p. 753). Reflection enhances deep learning and clinical reasoning skills, and for optimal learning, the reflection process should be guided (Mann et al., 2009; Sevenhuysen et al., 2013). Opportunities for reflective practice have been found to be increased within a 2:1 model (Lincoln & McAllister, 1993; Morris & Stew, 2007). The time available to students together to reflect in the absence of an educator, has been reported as beneficial (Fade, 2004; McPake, 2019; Stenberg & Carlson, 2015). Analysis of the questionnaire data in the present study revealed that significantly fewer Placement C educators (61%) reported that the collaborative learning aspect of the 2:1 model was useful for reflective practice, when compared to the opinions of Placement B educators (96%). Peer observation and peer feedback were reported as useful for facilitating reflective practice, in line with Placement B educators. This difference in opinion was not reported by students between the two time points. It is difficult to ascertain as to why this may be the case, as it is not reported in the literature. It may be due to similar reasoning attributed to the reduced perceived usefulness of the 2:1 model for attainment of professional competencies as students progressed through Placement C, that they had by then

developed these skills and could practice reflective practice independently. This is an important point for consideration in further research on optimal timing of the 2:1 model, as the potential for students to reflect on clinical experiences in the context of theoretical knowledge, prepares them for working as healthcare professionals (Sandars, 2009).

‘Active listening’ and ‘demonstrating empathy’ are key communication skills required by healthcare professionals working with patients to support them to change health behaviours (Rapoport & Pearson, 2007). The role of peer learning in the development of these skills is supported by considerable evidence (Lincoln & McAllister, 1993; Sevenhuysen, Thorpe, Molloy, et al., 2017; Tai, Molloy, et al., 2016). In the present study, the observing student used peer observation and scripting to identify examples of ‘active listening’ and ‘demonstrating empathy’ techniques used by the lead student during a patient consultation. They learned from observing the use of these techniques by their peer and whether they worked or not. These observations could also be included in peer feedback. A study of peer learning opportunities in medical students reported that students demonstrated empathy towards their patients through role-playing patients with their peers and towards each other via sharing experiences in during peer discussion. Their overall behaviour change skills were also improved (Tai, Molloy, et al., 2016). This makes this an important finding given the importance of developing this aspect of communication within healthcare professionals (Rodger et al., 2008).

In the present study, Placement C educators, compared with Placement B educators considered a 2:1 model to be less useful for ‘active listening’ and ‘demonstrating

empathy'. An explanation for this may be the difference in patient type in Placements B and C, with Placement C settings having those more acutely ill patients compared to Placement B settings. Placement B settings may have more of a focus on health promotion, including behavioural change education. At the time of this study, behavioural change training was being implemented at a national level by the professional body, The Irish Nutrition and Dietetic Institute (INDI), with primary care (community) dietetics departments prioritised within the initiative. A greater number of Placement B educators had received this training, compared to Placement C educators. Alternatively, it is possible that Placement C educators consider that students have already developed these skills sufficiently having successfully completed Placement B.

These findings of the positive impact of the 2:1 model on the development of professional skills in students are of significance due to the increasing emphasis being placed on the importance of these professional skills in all healthcare professionals (Ladyshevsky, 2010; Secomb, 2008). Previous research within an Irish dietetics setting had recommended a review of professional competency criteria to incorporate these skills and they are since well described in the CORU standards of proficiency (Bowles, 2008; CORU, 2019c). This should encourage students and practice educators to focus on the development of these professional skills and engage in the peer learning process, which supports their development (Sevenhuysen et al., 2013; Tai, Molloy, et al., 2016). Further research is warranted on the reduced impact of peer learning as a whole within the 2:1 model on the development of the professional skills of 'active listening', 'demonstrating empathy' and on the impact of collaborative learning, in particular, on the development of 'reflective practice', as perceived by Placement C educators.



## **6.4 Experience and perception of the 2:1 model**

The opportunity for peer support was considered to be one of the most important aspects of using a 2:1 model by both students and practice educators in the present study, with recognition that using the 2:1 model framework formalised the process of peer support during practice education. The presence of a peer helped students to provide emotional support to each other for coping with the challenges of a new learning environment. The value that students attributed to social and emotional support from their peer, even outside of the professional aspect of practice education, could be interpreted as a significant driver in the decision to use a 2:1 model during practice education. Practice education is often perceived by students to be a stressful and isolating time (Grundy, 1994; Ladyshevsky, 1993; Moore et al., 2003; Roberts et al., 2009a; Stenberg & Carlson, 2015). This underlines the importance of the creation of a safe, supported and comfortable environment for learning (Alpine et al., 2019; Baldry Currens, 2003; Dawes & Lambert, 2010; Holst & Hörberg, 2013; Martin & Edwards, 1998; Martin et al., 2004; Moore et al., 2003; O'Connor et al., 2012; Stenberg & Carlson, 2015; Triggs Nemshick & Shepard, 1996). While peer support was most valued when settling in to the clinical environment, it was highly regarded for the duration of both Placement B and Placement C. This may be explained in part by the organisation of the practical component of the professional programme for the students in the present study. Most students moved between two hospital and one community locations during the ten-week Placement B and therefore had to settle in to a new environment with new practice educators every three to four weeks. Even where students remained in a single hospital location during Placement C, they were usually supervised in two-week blocks, having to adjust to a new practice educator for each block. Changing practice educators and adapting to a new practice education

environment has been reported as a source of stress for students (Copley & Nelson, 2012; Farrow, Gaipman, & Rudman, 2000). This finding supports the retention of some elements of the 2:1 model throughout Placement C, to give students a structure for peer support and occasional peer learning opportunities. In the present study, social and emotional support between the student pair was reported to take some responsibility off the practice educator to be the sole provider of this support to students, an outcome which was highly valued by practice educators interviewed in the study.

The 2:1 model presented both opportunities and challenges for practice educators in the management of workload and caseload capacity in the present study. Facilitating a 2:1 model was reported to be time-consuming and challenging by many practice educators, associated with the stage of training that the students were at, with students requiring more supervision and guidance earlier in practice placement education. This is widely reported within the literature, regardless of whether a 1:1 or collaborative peer learning model is facilitated (Martin et al., 2004; Moore et al., 2003). Time apart within the 2:1 model was reported by practice educators as an opportunity to attend to other workload demands, while students favoured time away from the pressure of performance in front of a practice educator and ultimately to progress their autonomy and clinical reasoning skills. Students described this as an opportunity for increased professional autonomy. While the opinions of students and practice educators were similar, that they valued the time in which students worked on their own together, each had a distinct rationale for their opinion. Practice educators described that this collaborative learning component of the 2:1 model reduced the amount of superficial questioning, noting that students had already addressed much of this by engaging in peer discussion. A 2:1 model has

been acknowledged to present an opportunity to reduce practice educator burden and student dependency on the practice educator. (Baldry Currens & Bithell, 2003; Ladyshewsky, 1995; Mamhidir et al., 2014; Roberts et al., 2009b; Sevenhuysen et al., 2013; Stenberg et al., 2020; Tiberius & Gaipman, 1985; Triggs Nemshick & Shepard, 1996). The impact of practice education on clinical productivity has been discussed in the literature and while this was not investigated as part of the present study, it is recognised that a clinical department is likely to support normal or increased caseload capacity as students' progress in later rotations compared to during orientation and initial rotations (Hanson & DeJuliis, 2015; Hughes & Desbrow, 2010; Ladyshewsky, 1995; Ladyshewsky et al., 1998; Triggs Nemshick & Shepard, 1996). That a 2:1 model is not perceived as adding to the workload of the practice educator is essential as the practice educator role is already considered to be complex, time-consuming and stressful, reducing opportunities for professional development and project work (Baldry Currens & Bithell, 2003; Sevenhuysen & Haines, 2011).

A doubling of paperwork to be completed by the practice educator has been previously reported to be a significant barrier to the implementation of the 2:1 model and a reason for dissatisfaction (Baldry Currens, 2003; Copley & Nelson, 2012; Dawes & Lambert, 2010; O'Connor et al., 2012). In the present study, this was not observed, possibly due to student-led completion of assessment forms which was introduced as standard practice within dietetics practice education at the same time as the introduction of the 2:1 model. Student-led assessment, independently of the model of practice education used, has been shown to promote self-directed learning, evaluative judgment and reflective practice based on the principles of adult learning (Fade, 2004; Ibarra-Sáiz et al., 2020; Topping, 2009).

Students in the present study valued regular opportunities to work more independently. An underlying impetus for students to experience increased autonomy in preparation for the management of their own caseload during the final weeks of Placement C (consolidation) and in preparation for working within the dietetics profession was discussed by both students and practice educators. It is the most common reason reported for the decreasing satisfaction, by students and practice educators with the 2:1 model as Placement C progressed. This is discussed in the literature, with Rodger et al. (2008) concluding that it is of interest to all stakeholders that students graduating from health professional programmes are work-ready. However, it is also important to note that entry-level health professionals require supervision and mentoring (HSE, 2015). Lifelong learning is mandatory in continuous professional development of a healthcare professional (CORU, 2019c).

## **6.5 Preparation for and implementation of the 2:1 model**

Unhealthy competition between students within a pair has been observed in previous studies using 2:1 models (Briffa & Porter, 2013; Mamhidir et al., 2014; O'Connor et al., 2012; Sevenhuysen et al., 2015; Triggs Nemshick & Shepard, 1996; Zavadak et al., 1995). Practice educators in a more recent study reported that adverse competition between peers was difficult to control (Alpine et al., 2019). These researchers highlighted the difficulties of matching students within the complex process of allocating students to practice education sites and that students would be required to develop skills to manage relationships and conflict for working within a professional environment, regardless of pairing success (Alpine et al., 2019).

In the present study, neither students nor educators reported difficulties with any of the student pairs, with no reports of incompatibility or inability to work collaboratively. This may be a reflection of a successful pairing process conducted by the practice education coordinator and programme director, informed by supervising student interaction within the professional practice studies module. As part of the pre-planning for the 2:1 model, a process was undertaken by the practice education coordinator (AML) and programme director (CC) to optimally match students. The interaction of students in role play scenarios within the professional practice studies module was used as a basis for the pairing process (Lynam et al., 2015). This was in line with evidence reporting the use of academic achievement and development of practical skills as factors in the consideration of pairing students (Briffa & Porter, 2013; Roberts et al., 2009b). The importance of careful pairing of students prior to placement was alluded to by both students and educators in the present study, and mismatching of students was identified as a potential problem in the present study, despite its non-occurrence.

Most students and practice educators in the present study reported that students were well prepared for participating in a 2:1 model. Students acknowledged the benefit of the professional practice studies module in Year 2, particularly the sessions on the preparation for the 2:1 model, including peer observation and peer feedback techniques. The importance of thorough preparation for students and practice educators to participate in a 2:1 model has been emphasised in the literature, with a successful outcome from the use of a 2:1 model contingent on the effectiveness of this preparation (Alpine et al., 2019; Briffa & Porter, 2013; Lynam et al., 2015; Mamhidir et al., 2014; Sevenhuysen et al., 2014; Tai et al., 2017a).

Students were described as very capable of participation in the 2:1 model by practice educators. However practice educators reported that for students to be successful in providing appropriate constructive criticism to each other required time, practise, increasing familiarity with the feedback process and with each other, and increasing confidence and knowledge of clinical practice, which has been reported in the literature (Ladyshevsky, 1993; Tai et al., 2017a). Hence, there is a requirement for adequate preparation of students prior to practice education, which has been outlined in Chapter 1 (Section 1.6) and Chapter 3 (Section 3.4) of this thesis with the training schedule included in Appendix 9.

Interestingly, in the present study, more Placement B educators than Placement C educators reflected that students were well prepared for participating in the 2:1 model. This may be related to feedback from students and practice educators that regular training was required to retain skills on peer observation and peer feedback. A recommendation was made for an additional college-facilitated workshop session for students on peer learning skills, prior to commencement of Placement C. Similarly, significantly more Placement B educators perceived themselves to be well prepared to implement the 2:1 model, than Placement C educators, despite both groups of educators having received training on the peer learning approach as developed in the framework (Lynam et al., 2015), prior to facilitating students in a 2:1 model. The reason for fewer Placement C educators agreeing that they were well prepared to facilitate a 2:1 model was not elicited during the practice educator interviews, but is worth considering due to the importance of practice educator training prior to facilitation of the 2:1 model. It may be due to higher numbers in some training sessions for Placement C educators, due to

higher numbers in these larger hospital departments. It could perhaps also be that a greater number of Placement B educators had already completed Behaviour Training Courses (with Dymphna Pearson), from which they would have been more familiar with some of the techniques and methods used in the training sessions for the 2:1 model. It is also likely that practice educators would feel more prepared were they to facilitate a 2:1 model on a second and subsequent occasion, as was reported by some practice educators who had participated in the preliminary study trialling this model in four practice education sites.

In the practice education environment a manageable practice educator caseload with the availability of sufficient patient cases for two students has been identified as important factors to support 2:1 models (Baldry Currens, 2003; CSP, 2002; Ladyshevsky, 1993, 1995; Mamhidir et al., 2014; Tai et al., 2014). The importance of supportive colleagues within a clinical department is reported in the literature (Dawes & Lambert, 2010). For example, in a department where there are more dietitians than required for student rotations, or clinical areas deemed less suitable for students, it is important that the designated practice educator for the two students receives support from colleagues not directly involved in practice education. This practice will assist the practice educator and indirectly support student training (Lynam et al., 2015). In the present study, practice educators interviewed cautioned that a rushed and stressful environment could be created in situations where the educators' caseloads were not reduced when facilitating students, particularly in the earlier stages of practice education. This resulted in decreased satisfaction of students and practice educators with the 2:1 model.

Practice educators in the present study reported overall satisfaction with the pre-planning organisation of dietetics departments for facilitating students using a 2:1 model. Student coordinators from locations which had taken part in the pilot study of the 2:1 model the previous year reported increased readiness within their departments for using the model (Lynam et al., 2015). In their research into 2:1 placements in three health and social care professions (physiotherapy, occupational therapy and speech and language therapy), Dawes and Lambert (2010, p.26) concluded that practice educators who considered their department as a 'broad learning environment', with department members considered as providers of support with tasks both directly and indirectly related to student supervision, were likely to consider that use of a 2:1 model contributes to student learning.

The ability of the practice educator to facilitate a 2:1 model was reported to have an impact on student and practice educator satisfaction with the model in the present study. This seemed to depend on practice educator facilitation skills, as reported by students, and interest in or attitude to using a 2:1 model, according to students and practice educators. Some students reported significant discrepancies in facilitation techniques with a number of students reporting that some of their practice educators demonstrated neither the interest nor the ability to facilitate the peer observation and peer feedback components of the 2:1 model, which was at odds with the students' experiences with other practice educators. This was reported to cause confusion and stress for students. Similarly, some practice educators reported that it was evident that students had not had adequate experience of using the 2:1 model during previous weeks of practice placement education. These discrepancies in practice educator facilitation of a 2:1 model have also been reported in the literature (Roberts et al., 2009a). Student



coordinators were deemed to be particularly strong at facilitating the 2:1 model. The importance of the underlying skills and attitude of the practice educator is a common theme in the literature (Baldry Currens, 2003; Dawes & Lambert, 2010; DeClute & Ladyshewsky, 1993; Roberts et al., 2009a). Practice educators who used a 2:1 model in a more didactic or apprenticeship manner seemed to experience greater difficulty with the model and had greater concerns regarding quality of student learning and service provision to service users (Dawes & Lambert, 2010; Zavadak et al., 1995). Ladyshewsky (1993) reported that an understanding of how to facilitate the collaborative model was a better predictor of a successful 2:1 placement than previous experience as a clinical educator. Practice educators could experience insecurity with role transition or have to ‘unlearn’ previous techniques (Ladyshewsky et al., 1998; Roberts et al., 2009a). This emphasises the importance of adequate preparation of practice educators for facilitation of a 2:1 model, which has been widely recommended in the literature (Alpine et al., 2019; Baldry Currens, 2003; Briffa & Porter, 2013; Dawes & Lambert, 2010). Despite these recommendations, an analysis of the studies included in a systematic review by Briffa and Porter (2013) reveals that less than a third of the studies included reported that practice educators received training on facilitating a 2:1 model.

In the present study, the 2:1 model was facilitated in smaller regional hospital departments and primary care-based community dietetics departments within Placement B and large teaching hospital dietetics departments within Placement C. Within both placements, no setting in particular was found to be more or less suited to the model, for example outpatients versus inpatients, or primary care (community) versus hospital. However, the use of peer observation and feedback techniques within

the 2:1 model were found to be significantly more useful for developing the professional skills of ‘active listening’ and ‘developing empathy’ by Placement B educators, compared to Placement C educators. These skills are integral components of a behavioural change approach, which in the present study may have been perceived to be more useful in primary care (community) and hospital outpatient settings. Similarly, within the literature, only a minority of practice educators reported that some settings, for example intensive care units, were unsuitable for using a 2:1 model (Alpine et al., 2019).

In the present study, some practice educators reported that they gained skills from facilitating the 2:1 model, while a small number who had previously facilitated a 1:1 model, found the role more challenging to adapt to and were less satisfied with the 2:1 model. Facilitating a 2:1 model requires a greater use of interpersonal management skills (Triggs Nemshick & Shepard, 1996; Zavadak et al., 1995). Some practice educators have reported gaining facilitation and supervisory skills by facilitating students in a 2:1 model (Tai, Molloy, et al., 2016).

The finding that student satisfaction with the 2:1 model in the present study was influenced by the facilitation of the model by practice educators has been previously reported in the literature. Students were more likely to perceive disadvantages of a 2:1 model if they did not experience appropriate supervisory strategies or had had a previous poor experience with peer learning (Briffa & Porter, 2013; Tai et al., 2017b). Practice educators and students have been found to show bias towards the model with which they had most experience (Lekkas et al., 2007; McPake, 2019). Ultimately, it could be argued that the differences in the perceived usefulness of the 2:1 model may

be in part due to differences in the facilitation of the 2:1 model between practice educators, which has been reported elsewhere (Roberts et al., 2009a).

Practice educators in the present study reported that specific guidance as to what was expected of the student, was required when using the framework for the 2:1 model, particularly regarding the peer feedback process. The provision of structure within the peer feedback process may optimise the quality of the peer feedback (Alpine et al., 2019; Stenberg et al., 2020; Tai, Molloy, et al., 2016). Emphasising the advantages of peer teaching or peer coaching for the student in the teaching role, based on the premise that to teach is to learn, may also be of benefit (Rindfleisch et al., 2009; Tai et al., 2014). In the present study, some students reported that in situations where educators were too inflexible in their approach to the feedback process, students were obliged to find something to discuss critically, even if this was not perceived to be warranted. This is an interesting point, suggesting that students and perhaps practice educators require reassurance that it is acceptable to give feedback that a consultation contains all elements required. This feedback may still be formative, indicating reasons why various components went well, rather than the belief that feedback must always indicate something to be improved. This represents a training need regarding the facilitation of the feedback process within the framework. Practice educators may need to be reassured that where there is no requirement for improvement on a particular task, or if a student lacks self-confidence, the practice educator can guide the other student to focus on positive affirmation rather than having to always include constructive criticism (negative feedback) (Lynam et al., 2015; Parker & Kersner, 1998). This is perhaps reflective of evidence in the literature of student and practice educator

dissatisfaction with a 2:1 model, where it was perceived to be facilitated too rigidly with researchers advocating a more flexible approach (Sevenhuysen et al., 2014).

The importance of regular individual time for students with practice educators was highlighted in the present study. Students described how this individual time was important for their independence, confidence and developing competence. It allowed students individual time with the practice educators and facilitated individual student assessment, the latter which practice educators reported was of particular importance and was recognised to potentially be more challenging when using a 2:1 model. Practice educators reported that it was not always easy to ascertain whether students were contributing equally to tasks. These challenges are reported in the literature (Baldry Currens, 2003; Dawes & Lambert, 2010; O'Connor et al., 2012). Individual time was provided for students at regular intervals within the framework in line with this evidence. As Placement C in particular progressed, students and Placement C educators reported that time might not be used optimally, as one student may be waiting while the practice educator was working with their peer. This was not always well managed in the present study.

In the present study, some practice educators reported concern that in situations where students were supervised by a number of practice educators, difficulty in accurately assessing or appropriately supporting two students may ensue. Adequate communication between the practice educators was deemed essential regarding student progress in the achievement of professional competence and development of professional skills. The importance of the role of the student coordinator in supervising overall student progression, and acting as a conduit between a number of practice

educators in this respect was emphasised. The issue of inconsistency amongst practice educators for students participating in a multiple mentoring model has been discussed in the literature as potentially being stressful for students, not just regarding assessment, but in cases where practice educators use different methods or take differing approaches to the same tasks (Barrett et al., 2019; Copley & Nelson, 2012). Recognition of the role of the student coordinator as a skilled, specialised role with responsibility for training future healthcare professionals to high standards is important (Ferguson, Haantjens, & Milosavljevic, 2013; Hanson et al., 2019; Rodger et al., 2008).

Student assessment is an important part of the role of the practice educator in student education, which cannot be replaced a peer (Held et al., 2019; O'Connor et al., 2012; Tai, Canny, et al., 2016). The role of peer learning should instead be to complement the role of the practice educator in developing competence and professional skills in the student. The practice educator should regularly supervise student performance and peer feedback, in order to encourage student trust in, and audit the quality of, peer feedback and the peer learning approach in general (Sevenhuysen et al., 2015; Tai, Canny, et al., 2016). These practises may address concerns that the value of practice educator contribution to student practice education may be undermined in a 2:1 model, which have been reported in the literature (Held et al., 2019; O'Connor et al., 2012; Sevenhuysen et al., 2014; Tai, Canny, et al., 2016). Such practises may also help tackle issues of resistance to change within the professions and an established hierarchy which have been reported as barriers to use of a peer learning approach in the medical profession (Tai et al., 2017b).

There is an emerging body of research on the development and categorisation of implementation frameworks and strategies, which examines how best to translate scientific research into practice, which is often a complex process. Often an intervention may be developed with its effectiveness tested and reported. However, the research to translation process also includes ensuring that the interventions are “adopted, implemented and sustained” over time. Without the latter, there is little opportunity for scientific research to advance practice (Fernandez et al., 2019) (p. 2). As was reported on a number of occasions in the present study, where a framework is not implemented fully or where certain elements are omitted without due consideration of the impact, the overall effectiveness of the programme or model can be reduced (Escoffery et al., 2019).

An increasing number of frameworks and implementation models have been developed and published to address the challenges of implementing research outcomes into practice. These include the Quality Implementation Framework (QIF), A Practical Robust Implementation and Sustainability Model for Integrating Research Findings into Practice (PRISM) and Expert Recommendations for Implementing Change (ERIC) amongst others (Feldstein & Glasgow, 2008; Meyers, Durlak, & Wandersman, 2012; Powell et al., 2015). More specifically, within practice education research on collaborative peer learning models, there are two examples where strategies have been developed in order to aid the implementation of collaborative peer learning into the “real world”, one within occupational therapy and one within medical education (Hanson et al., 2019; Tai et al., 2017b). These strategies discuss the scope of factors which should be considered when contemplating or trying to increase the facilitation of a collaborative peer learning model. Much consideration was given to the potential for

the successful implementation of the 2:1 model in the present study, including the trial of the model within the preliminary study, the development of comprehensive training sessions for both students and practice educators and the coinciding roll-out of student-led completion of assessment forms in order to reduce the administrative burden on practice educators, particularly when facilitating two students simultaneously. Future research to examine the challenges and sustainability of the 2:1 model as investigated in the present study, in the context of available implementation strategies and current research on implementation mapping would be useful in order to facilitate the optimal use of the model in practice (Fernandez et al., 2019).

## **6.6 Strengths, limitations and further research**

This research strengthens the growing evidence base for using a collaborative peer learning 2:1 model during practice education in health-related disciplines. A sequential explanatory designed study elucidated student and practice educator opinion of the use of the 2:1 model, with a particular focus on attainment of professional competence, development of professional skills and implementation of the 2:1 model in practice. A full complement of a single cohort of dietetic undergraduate students who completed a 2:1 model during Placement B and Placement C was followed over three years, with a response rate of 15/16. However, the questionnaire response rates for the practice educators were far lower than for the student group, with only 18.5% of Placement B educators and 17.2% of Placement C educators accepting the invitation to complete a questionnaire after facilitating a 2:1 model, compared to 93.8% of students. It is difficult to know the reason for this. It may be that the questionnaire was emailed to

practice educators, whereas it was offered in person to the student cohort. Alternatively, the length of the questionnaire, which ran to approximately 10 pages may have deterred practice educators from participating. Furthermore, a possible positive response bias cannot be ruled out in the student responses, due to the dependent relationship between the PI and student cohort, although efforts were made to reduce this bias through the use of a gatekeeper for the administration of participation information leaflets, consent forms and questionnaires and an independent interviewer for interviews. Similarly, positive response bias has been reported in the literature where survey responders may respond more favourably than non-responders (Mazor, Clauser, Field, Yood, & Gurwitz, 2002).

The researchers had the advantage of conducting an earlier pilot study, to inform the development of the 2:1 model framework (Lynam et al., 2015). This provided evidence that much preparation was essential for the successful implementation of the 2:1 model, including comprehensive training of students and practice educators. College-based training was provided for the cohort of undergraduate students within a professional practice studies module in year two of the dietetics undergraduate programme. Onsite training was provided for practice educators in all forty-four sites in the Republic of Ireland involved in practice education for the dietetic undergraduate programme. This training was provided by the Practice Education Coordinator (AML) over a two-year period, to reduce inter-rater reliability bias (Atkinson & Murray, 1987).

The 2:1 model was introduced to practice education universally for this cohort of students, so that all practice educators were required to use a 2:1 model. All practice educators were invited to complete a questionnaire afterwards. Within the literature,



practice educators are usually volunteers who agree to use the 2:1 model for a small student sample. As far as the researchers are aware, this is the only example within the published literature of the universal introduction of a 2:1 model to the practice education component of a programme within a health-related discipline. The researchers note that significantly fewer Placement C educators reported being well prepared to use the 2:1 model, when compared to Placement B educators. This could be due to the very large number of practice educators involved in the practice education of the single student cohort at the time, when there were no postgraduate dietetics programmes requiring practice education in the country. The number of practice educators associated with each dietetics programme has decreased now, due to the increased number of programmes in operation (one undergraduate and three postgraduate). Similar numbers of Placement B (n=135) and Placement C (n=134) educators facilitated a 2:1 model with this cohort of students; however, there were 18 Placement B educator training sessions, but only 11 Placement C educator training sessions hosted by the PEC. The larger numbers of practice educators in the training sessions for Placement C educators may have had an impact on how prepared the practice educators perceived themselves to be.

Much of the research in the use of the 2:1 model is qualitative in approach, with the aim of providing a rich, narrative account of participant experience of a 2:1 model. In the present study, both a quantitative and a qualitative approach were used, in order to increase the scope and impact of the research (Creswell, Plano Clark, Gutman, & Hanson, 2003). A quantitative approach was initially used to assess students' and educators' opinions of the impact of the 2:1 model on attainment of professional competence and development of professional skills. This was followed by a qualitative

interview-based component, in order to better understand the quantitative findings and inform future development and implementation of the 2:1 model framework used in this study (Bazeley, 2010). However, ethical approval for this study was granted contingent on a number of conditions. The practice education coordinator for the programme (AML) who was the principal investigator was not permitted to conduct the interviews. AML devised the prescribed schedule for the interviews but was obliged to engage a non-HEI based student coordinator to undertake the role of interviewing study participants. Similarly, AML was prohibited from listening to the audio files of the interviews, instead relying on interviewer field notes to aid interpretation of some interview data. It is probable that these restrictions had some impact on the collection and interpretation of the qualitative data in this research, due to inter-interviewer bias. Efforts were made to reduce this bias through pre- and post- individual interview discussion between AML and the interviewer and compilation of comprehensive field notes for each interview (Atkinson & Murray, 1987; Sandelowski, 1994).

Further research into the 2:1 model is recommended in order to examine the optimal timing on the use of the 2:1 model during Placement C and the overall implementation of the 2:1 model in current dietetic practice education.

## **6.7 Conclusion and recommendations**

The purpose of this study was to investigate the use of a collaborative peer learning 2:1 model during practice education, the implementation of which was guided by a specifically designed framework. Students' and practice educators' opinions were

sought on the impact of the 2:1 model on the attainment of professional competence, the development of professional skills and the implementation of a 2:1 model in practice. The researcher attempted to determine the influence of various components of the 2:1 model on the achievement of these educational objectives.

The 2:1 model was perceived to have a positive impact on the attainment of professional competence and on the development of professional skills within Placement B. Professional skills, as examined in this study, have been more extensively described in professional competency criteria in the practice education component of professional programmes in health-related disciplines in recent years, with an increased recognition of their importance and their transferability between the health-related professions (CORU, 2019c).

The potential implementation of a 2:1 model requires adequate preparation and participant training which have been identified by practice educators and students in this study as determinants of successful implementation of a 2:1 model. According to the literature, not all 2:1 models used during practice education are based on a collaborative peer learning approach and it is sometimes difficult to ascertain how much peer learning occurs within some 2:1 models studied (Sevenhuysen et al., 2014). The 2:1 model used in the present study was based on a framework for peer learning in adherence to the evidence that optimal peer learning requires structure and educator-led implementation (Boud et al., 2016; Tai et al., 2017a).

Ultimately, opportunities for student learning from using the 2:1 model were more highly regarded for Placement B and during the initial stages of Placement C. A

recommendation might be to adapt the 2:1 model framework to incorporate mostly individual (1:1) student supervision from a certain stage of Placement C onwards, with occasional 2:1 work and the continued availability of a peer for informal communication and support, which was reported as valuable by students in the present study and for which there is evidence in the literature to support.

In this research, a 2:1 model was found to provide students with increased support, autonomy and opportunities for learning. The importance of the provision of a comfortable and safe learning environment for students is a significant finding in the context of supporting the overall wellbeing of the student population. This research supports the use of a collaborative peer learning 2:1 model during the early and middle practical components of professional programmes in health-related disciplines, with benefits outweighing any challenges which may need to be overcome. The latter include comprehensive training for all participants and consideration of individual strategies for the successful implementation of the 2:1 model.



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## **APPENDICES**

### **Appendix 1: Publications to date**

## **Appendix 1: Publications to date**

### **Peer reviewed journal article:**

Lynam A-M., Corish C. & Connolly D. (2015) Development of a framework to facilitate a collaborative peer learning 2:1 model of practice placement education. *Nutrition & Dietetics*, 72(2), 170-175.

### **Peer reviewed conference proceedings abstract:**

Lynam A-M., Corish C. & Connolly D. (2013) A framework to facilitate a 2:1 practice placement education model. *DIETS2/EFAD Conference VII 'Non-Communicable Diseases-the Dietitians' Response to Health 2020,* Garda, Italy, 8<sup>th</sup> of November 2013, abstracted. <http://www.thematicnetworkdietetics.eu>

### **Invited speaker:**

Lynam A-M. (2015) Development of a framework to facilitate a 2:1 practice placement education model. 16th Healthcare Interdisciplinary Research Conference 'Health, Wellbeing and Innovation: advancing research, practice and education' TCD School of Nursing and Midwifery, 5<sup>th</sup> November 2015, Dublin. (Invited Speaker)

Lynam A-M. (2013) Development of a framework to facilitate a 2:1 practice placement education model. DIETS2/EFAD Conference VII 'Non-Communicable Diseases-the Dietitians' Response to Health 2020,' 8<sup>th</sup> November 2013, Garda, Italy. (Invited Speaker)

Lynam A-M. (2013) A framework to facilitate a 2:1 practice placement education model. Interdisciplinary Practice Education Study Day 'Learning Opportunities in the Clinical Environment', 19<sup>th</sup> June 2013, UCD, Belfield, Dublin. (Invited Speaker)

Lynam A-M. (2010) A framework to facilitate a 2:1 practice placement education model INDI Annual General Meeting & Study Day (2010) A framework to facilitate a 2:1 practice placement education model. 9<sup>th</sup> October 2010. Dublin. (Invited Speaker)

## **Abstract - Development of a framework to facilitate a collaborative peer learning 2:1 model of practice placement education**

Presented at DIETS conference, Garda, 2013.

Lynam AM, Corish C & Connolly D (2013) A framework to facilitate a 2:1 practice placement education model. *DIETS2/EFAD Conference VII 'Non-Communicable Diseases-the Dietitians' Response to Health 2020,' Garda, Italy, 8<sup>th</sup> of November 2013, abstracted.*  
<http://www.thematicnetworkdietetics.eu>

**Aim:** The educational approach towards practice placement education in health-related disciplines has changed in recent years. The use of collaborative or peer learning models has increased, associated with positive effects on desired outcomes such as learning, competence and reflective practice. At present, there is little published literature on the implementation or use of such models in dietetics practice placement education. The aim of this study was to conduct a pilot study of a collaborative peer learning 2:1 model.

**Methods:** Experienced practice placement educators from four clinical sites in the discipline of dietetics in the Republic of Ireland were invited to participate in the study and form an advisory group. Feedback from this group was used to inform the design and development of a framework to guide the wider implementation of the 2:1 model.

**Results:** Feedback from the pilot study was largely positive, with all four sites willing to facilitate a 2:1 model again. The main recommendation was that the practice placement educators require more practical information on the implementation of a 2:1 model, particularly the facilitation of the peer feedback process. In response to this feedback, the Lynam framework was designed, which is the focus of this paper.

**Conclusions:** This pilot study of a 2:1 model in dietetics practice placement education informed the design and development of a framework for implementation of the model. Further research into the use of the 2:1 model for practice placement education and the effectiveness of the Lynam framework to guide the implementation of this model is required.

## ORIGINAL RESEARCH

# Development of a framework to facilitate a collaborative peer learning 2:1 model of practice placement education

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### Abstract

**Aim:** The educational approach towards practice placement education in health-related disciplines has changed in recent years. The use of collaborative or peer learning models has increased, associated with positive effects on desired outcomes such as learning, competence and reflective practice. At present, there is little published literature on the implementation or use of such models in dietetics practice placement education. The aim of this study was to conduct a pilot study of a collaborative peer learning 2 students to 1 educator (2:1 model).

**Methods:** Experienced practice placement educators from four clinical sites in the discipline of dietetics in the Republic of Ireland were invited to participate in the study and form an advisory group. Feedback from this group was used to inform the design and development of a framework to guide the wider implementation of the 2:1 model.

**Results:** Feedback from the pilot study was largely positive, with all four sites willing to facilitate a 2:1 model again. The main recommendation was that the practice placement educators require more practical information on the implementation of a 2:1 model, particularly the facilitation of the peer feedback process. In response to this feedback, the Lynam framework was designed, which is the focus of this paper.

**Conclusions:** This pilot study of a 2:1 model in dietetics practice placement education informed the design and development of a framework for implementation of the model. Further research into the use of the 2:1 model for practice placement education and the effectiveness of the Lynam framework to guide the implementation of this model is required.

**Key words:** 2:1 model, collaborative learning, practice placement education.

## Introduction

Practice placement education (PPE) is an integral component in the attainment of competence in professional programmes for all health-related disciplines.<sup>1</sup> A number of education models are currently used to provide PPE within these programmes, and opinion differs as to which is superior,<sup>2</sup> or indeed whether 'one size fits all'. In keeping with European standards,<sup>3</sup> compliance with competency criteria based on those specified for entry level dietitians eligible

for membership of the professional body (Irish Nutrition and Dietetic Institute)<sup>4</sup> is mandatory for successful completion of PPE.

Collaborative learning may be defined as 'two or more students working collaboratively under the supervision and guidance of one primary instructor'.<sup>5</sup> It is sometimes referred to as the 2:1 model, because it involves one practice placement educator, hereafter referred to as educator, working with two or more students.<sup>6</sup> It serves as an umbrella term for a number of educational approaches involving 'joint intellectual effort by students and teachers together'. Collaborative learning also provides the theoretical framework that underpins the concept of peer learning.<sup>7</sup> Peer learning or peer-assisted learning may be defined as 'to get knowledge through study, experience or teaching of an equal',<sup>8</sup> or as 'peers helping each other to learn'.<sup>9</sup> Although learning is deemed to be more effective when there is collaboration between students,<sup>9</sup> an Australian review concluded that insufficient evidence exists to promote one model of collaborative or peer learning over another. It is clear, however, that there is insufficient evidence to promote the traditional 1:1

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model of PPE as being a 'gold standard', which collaborative models must match in their outcomes.<sup>2</sup>

Although the 1:1 model remains the most frequently used approach to PPE, a pedagogical shift from this traditional didactic model of PPE towards a more facilitative student-directed model<sup>10</sup> has become apparent in the UK, USA, Canada and Australia, particularly in the disciplines of occupational therapy and physiotherapy.<sup>5,9,11-15</sup> This approach encourages students to direct their own learning, engage in the feedback process and utilise reflective practice. This change in approach, together with a widespread shortage of clinical placements, has led to an increased interest in the use of collaborative or peer learning models of PPE within these disciplines.<sup>16</sup> In the published literature, however, significant anomalies exist in the terminology that is used to describe the various education strategies employed during PPE and their underlying theories or learning principles, which can make direct comparisons difficult.<sup>17</sup> For the purposes of this research, a collaborative, peer learning 2:1 model, hereafter referred to as 2:1 model, was the approach piloted. Although little published literature on the use of such approaches within the dietetics setting is available,<sup>18</sup> it seems reasonable to extrapolate the findings from similar health-related disciplines to the dietetics setting.

The advantages of introducing a 2:1 model are manifold. The observation and feedback skills of the students are improved,<sup>19</sup> there is increased time for reflective practice<sup>13</sup> and opportunity to practise skills on each other.<sup>12,20</sup> Increased efficiency in educators' involvement with students as a group, rather than separately, has been reported, resulting in reduction of repetition, which may address the issue of shortage of clinical placements.<sup>21</sup> Student independence is increased, reducing reliance on the educator to answer superficial questions, provide social support and constant supervision, even in the early stages of PPE.<sup>14,22,23</sup> Overall, the quality of the student and educator experience is improved, while achieving desirable trends in patient care, clinical education and professional development.<sup>1,14</sup> Disadvantages of the introduction of a 2:1 model include the requirement for increased planning and organisation pre-placement, and for the completion of assessment documentation for two students simultaneously.<sup>11,20,24,25</sup> New skills are required by educators to work with two students simultaneously, including facilitation of peer learning,<sup>11</sup> which may not always be used optimally.<sup>9</sup> There is the potential for students being 'mismatched' in personality or ability<sup>15,19</sup> and educator time and caseload must be shared between two students.<sup>24,25</sup> Support from other staff may also be required.<sup>24</sup> However, with careful planning, potential barriers to using a 2:1 model are surmountable, while the advantages make this effort worthwhile.<sup>9,11,14,15,19</sup>

Across the health-related disciplines, little has been published on how to implement collaborative or peer education models.<sup>15</sup> One Australian model within dietetics PPE incorporates regular rotation of student pairs in a strict time frame, with staged progression of dietetic tasks undertaken within one clinical setting. Such a model does not provide a feasible framework for implementing a 2:1 model in the Irish

setting as students rotate to different geographical locations and change between hospital and primary care (community) settings at various times during PPE.<sup>23</sup>

The aim of this pilot study was to explore the use of a 2:1 model in dietetics PPE, with a view to possible implementation of the model in the Irish setting. The 2:1 model used incorporated elements of peer learning, including peer observation and peer feedback (peer review) based on the theoretical framework of collaborative learning, and more specifically the social interdependence theory.<sup>26</sup> This exists when there is a common goal between group members and the accomplishments of each member are affected by the others. Positive interdependence occurs when the goal is shared, so that achievement of the goal is dependent on the actions of all members.

## Methods

In 2010, four out of 44 dietetics PPE sites in the Republic of Ireland were approached to trial a 2:1 model. The sites were mixed, incorporating two urban teaching hospitals, one primary care (Community) dietetics department, and one smaller regional hospital. These sites were chosen so that dietitians who were experienced practice placement educators would be able to act as key informants or an advisory group, on whether the higher education institution (HEI) should implement the 2:1 model within dietetics PPE in Ireland. Educators at each site were supplied with literature on collaborative and peer learning and were given guidelines for facilitating peer observation and the peer feedback process within a 2:1 model. No additional preparation over that normally provided prior to the 26-week PPE was undertaken with the year 4 students who had already been allocated to the sites chosen.

Following completion of PPE using the 2:1 model, the practice education coordinator (HEI-based) held a discussion group<sup>27</sup> with the advisory group members at each of the four sites. Written notes were made during these discussions, including verbatim quotes from discussion group participants which were returned to participants for feedback and comment.<sup>28</sup> These transcripts were read and blindly categorised using qualitative techniques by a colleague not involved in the study, in order to address the issue of bias as recommended in the literature.<sup>29,30</sup> Full ethical approval for this research was granted by the School of Medicine, Trinity College Dublin, Ethics Committee.

## Results

While all four sites reported that they would use the 2:1 model again, the strongest recommendation from the advisory group was that specific guidelines on how to optimally facilitate two students during patient consultations were required. Students and educators also required training on scheduling regular time within or between each patient consultation for engaging in and facilitating the peer feedback process; 'it's hard not to slip back into teacher-mode', 'it takes practice to balance feedback between the two [stu-



dents]', 'the students need to know what is expected of them'. Practical sessions on engaging in and facilitating the peer feedback process, practising peer observation (including scripting) and reflecting on their own practice were recommended. Furthermore, students and educators required training sessions on the theories and principles underpinning the 2:1 model.

Given the feedback from the advisory group and concerns expressed in the literature about the process of applying a 2:1 model, practical information on how to implement the model was required. As the number of weeks spent in each clinical site providing PPE in the Irish setting varies, a framework with a broad scope to guide students and educators through the process was needed.

## Discussion

In keeping with feedback from the advisory group on the level of support required, the structure to support the facilitation of peer feedback and reflective practice was prescriptive. Similar needs have been reported in the literature<sup>21,24</sup> with many educators citing difficulties with having to 'unlearn' previously learnt methods of giving feedback.<sup>18</sup> Understanding how to facilitate a collaborative model predicts successful 2:1 placement more accurately than previous experience as an educator.<sup>1</sup> Zavadek *et al.* (1995) reporting on two case studies, concluded that in-depth preparation of educators contributed to success using a 2:1 model.<sup>11</sup>

The Lynam framework describes in a step-wise manner the organisation of the two students and for the educator during three different scenarios, incorporating both inpatient and outpatient consultations, as was recommended by the advisory group. Insufficient detail on implementing a collaborative model within the published research across the health-related disciplines has previously been reported as a barrier to implementing the model.<sup>15,18</sup>

The staged design of the framework allocates protected time for the students to partake in the feedback process and in reflective practice at regular intervals, which is also supported by the literature.<sup>19,24,25</sup> In order to work successfully with the framework, educators need to have identified suitable patients for two students. The framework encourages educators to allow the student pair to gather information together without the educator present at least once or twice per day, which gives the educator up to two hours daily to undertake other work. This advantage has been highlighted in previous literature.<sup>19,21,31</sup>

Within any 2:1 model of PPE, 1:1 time should be regularly scheduled and this has been included in the framework. This is important for student independence, assessment and transparency, and reduces the difficulty for educators in assessing the competence of paired students individually, which has been documented extensively in the literature.<sup>11,25</sup>

As well as being guided by feedback from the advisory group and published literature, the framework structure is underpinned by theoretical educational frameworks such as the social interdependence theory.<sup>26</sup> Scenario 1 of the frame-

work differs from scenarios 2 and 3, in that it involves the sharing of tasks between the students to reach a shared goal. This is based on the premise that 'individuals encourage and facilitate each other's efforts to learn'.<sup>32</sup> Conversely, in scenarios 2 and 3, each individual student may reach their goal, independent of the actions of the other student. The peer feedback process remains however, to allow the students to facilitate each other in the attainment of their goal.

Figure 1 represents an illustration of the Lynam framework for the facilitation of two students simultaneously during the different stages of a patient consultation process for three different patient consultation scenarios. Scenarios 1 and 2 are used in an inpatient setting, while scenario 3 is used in an outpatient clinic setting. At the beginning of PPE, the students observe the educator for two patient consultations. The students should then progress to conducting the introduction and information gathering parts of the consultation (stages 1–4). For all three scenarios, it is explained to the patient at the beginning of the consultation that only one student will be communicating with the patient. The other student is there as an observer, to learn from his/her peer and to give feedback after the consultation. As with a 1:1 model, the complexity of the patient case should be considered, and students should commence with less complex patients, when possible.

Again in keeping with the feedback from the advisory group and extensive reports in the literature on the importance of the underlying skills to facilitate a 2:1 model,<sup>1,11,18,24</sup> an interactive education module has now been developed for educators and students before the introduction of the framework on a wider basis. This module includes the theories underpinning collaborative learning, including the social interdependence theory,<sup>26</sup> group learning,<sup>22</sup> behavioural change<sup>33</sup> and reflective practice.<sup>34</sup> Practical skills based on these theories, including facilitation of and participation in the practice of peer observation (including scripting), the peer feedback process and reflective practice have been incorporated into the module. The module has been designed to be delivered to educators and students in a small group teaching setting to promote optimal learning and participation, including practise, role play and observation and feedback opportunities. When delivering the module to students, participants are organised into groups of 3, rotating the role of 'patient', 'dietitian' and 'observer' for mock patient consultations. After each participant practises the 'dietitian' role, a debriefing or feedback session occurs, led by an academic facilitator trained in feedback skills. The 'observer' is responsible for leading the peer feedback process, and his/her role is to script the consultation, focusing on the words of the dietitian. This is an example of active observation; another example is for the 'observer' to observe and document a particular aspect of the 'dietitian's' performance during the consultation, which is then discussed afterwards. After a role play exercise, the 'observer' reads out the script in an objective, non-judgemental manner. The academic facilitator asks the 'dietitian' for feedback on his/her performance in a structured way, that is one to two of either positive feedback or constructive criticism. Examples

## The Lynam Framework for a (2:1) Model

Key: A = Student A B = Student B +E = Educator present +/- E = Educator may/may not be present * Patient present	Scenario 1	Scenario 2	Scenario 3
	Inpatients	Inpatients	Outpatients
	A + B	A / B	A + B
	Patient X	Patient Y / Z	Patient 1
<b>Patient Consultation</b>			
1. Data collection	A + B +/- E	A / B +/- E	A + E
2. Patient interview (assessment)*	A +/- E	A / B +/- E	A + E
3. Peer observation (scripting)*	B +/- E	Nil +/- E	B + E
4. Dietetic record keeping	A +/- E	A / B +/- E	A + E
5. Nutritional care planning	A + B +/- E	A / B +/- E	A + E
6. Presentation of case	A + E	A / B + E	Nil
7. Peer feedback on assessment and plan	A + B + E	A + B + E	Nil
8. Patient interview (education/treatment)*	A + E	A / B + E	A + E
9. Peer observation of education/treatment*	B + E	B / A + E	B + E
10. Documentation in medical chart/dietetic record	A + B + E	A / B + E	A + E
11. Communication with multidisciplinary team	A + E	A / B + E	A + E
12. Reflection and overall feedback	A + B + E	A + B + E	A + B + E

Note: For Scenarios 1 and 3, students rotate being student 'A' for consecutive patients

Figure 1 The Lynam framework for a (2:1) model.

include 'Dietitian, tell me one thing that went well for you during the consultation (and why) and one thing that you would change (and why)'. The 'patient' is then asked to give feedback on the performance of the 'dietitian' in a similar structured manner. For example, 'Patient, tell me two things that the "dietitian" said/did that you believe worked well, and suggest two other pieces of information that the dietitian could have looked for from you during the assessment stage'. The academic facilitator may have observed some of the role play and may be able to comment further if required. The academic facilitator also ensures that the feedback remains structured, focused and balanced. The 'dietitian' may then practise completing a reflective log on his/her performance, answering questions such as 'what went well?', 'what would you have done differently?' and 'what did you learn from the experience?'. The delivery of the module to educators is similar, the participants are organised into groups of three, rotating the role of 'Student A', 'Student B' and 'dietitian' for mock student feedback sessions based on hypothetical patient consultation scenarios. Each participant practises the 'dietitian' role of facilitating the feedback session in which both 'Student A' and 'Student B' are required to partake. As with the module delivered to students, each participant is asked to identify a point of positive feedback and/or constructive criticism. Afterwards, a debriefing or feedback session occurs, led by the academic facilitator, who has an observer role during the sessions.

Within the framework, scenario 1 may be used in any acute, rehabilitation or residential setting. Both students (A & B) go to see the same patient, and work through stages 1–5 of the patient consultation process.<sup>35</sup> The educator does not have to be present for this part of each consultation, but it is recommended that he or she is present periodically to observe. In practice, this will depend on the confidence of the educator in the competence of the students, but educators should be encouraged to let the students practise these skills independently of the educators to maximise student-directed and peer learning opportunities. Students collaborate on stage 1, data collection, but within this they have their own individual tasks, to promote positive interdependence, as described in the literature.<sup>32</sup> Student A reviews the medical and nursing notes and Student B reviews the observation records, fluid balance records, anthropometric and biochemical results. Student A conducts the patient interview (stage 2), which involves introducing both students to the patient and explaining that Student A will be conducting a nutritional assessment of the patient, while Student B will be scripting/documenting what Student A is communicating (stage 3). Students collaborate on documentation in the dietetic record card (stage 4) and on devising the nutrition care plan (stage 5). The educator (who has already reviewed the patient's chart) then meets with the students at a pre-arranged time (if not already present) and Student A presents the case (stage 6). The educator then facilitates feedback on

stages 1–6 between the two students, and any necessary amendments to the nutrition care plan are made (stage 7). Student A (i.e. the same student who conducted the patient interview) then implements the education/treatment plan with the patient while Student B and the educator observe, and the educator intervenes as necessary (stages 8 & 9). Both students work on documentation for the patient chart, and the dietetic record card (stage 10). Student A communicates with the relevant multidisciplinary team members (stage 11). The educator then facilitates reflection<sup>13,34</sup> and peer feedback<sup>24</sup> by both students on the case, away from the patient (stage 12). Students rotate being ‘Student A’ for consecutive patients.

Scenario 2 is used in a similar setting to scenario 1, once students have gained confidence using scenario 1. Students A and B are assigned separate patients, and work through stages 1–5 of the patient consultation process independently. This is a demonstration of independent ability as discussed in the literature.<sup>11</sup> At a pre-arranged time, the educator and Student B meet with Student A, who presents his/her patient case (stage 6). The educator then facilitates peer feedback on Student A’s competence during stages 1–6 of the patient consultation process (stage 7). Student A next implements the education/treatment plan with the patient while Student B and the educator observe. The educator intervenes as necessary (stages 8 & 9). This process is then repeated with Student B. Both students individually work on documentation for their respective patient charts, and the dietetic record cards (stage 10), and communicate with the relevant multidisciplinary team members (stage 11). The educator then facilitates reflection and peer feedback with both students on both cases, away from the patient (stage 12). For scenario 2, students always observe each other for the implementation of the education/treatment plan, and both partake in the peer feedback session. The only exception is when the students are having one-to-one time with the educator, which should be scheduled regularly (at least two to three patients per week) to assure the educator of the students’ individual competence.

Scenario 3 is used in an outpatient clinic setting. Students should rotate being ‘Student A’ (taking the lead) and ‘Student B’ (observing) for consecutive patients. As with a single student, if Student A is conducting the patient interview (stage 2), he or she will then ‘pass the patient back’ to the educator who may take over the consultation at that point. Students should begin by conducting stages 1–4 of the patient consultation process. As they progress, they may conduct the entire consultation (stages 1–8) and the educator will only intervene where necessary. As part of the framework, Student A invites the educator to contribute at the end of the consultation. Between patient consultations, time permitting, there is a short reflection/discussion when Student A reflects on his/her consultation, and Student B is invited to give feedback/constructive criticism and read out all or the main points of the script that Student A communicated, to facilitate Student A’s insight into his/her competence. The educator adds anything that the students may have missed.

All four sites reported that they would use the 2:1 model again, as reported previously in the literature.<sup>24</sup> In keeping with the published literature,<sup>11,24,36</sup> fears or concerns expressed by educators prior to introducing a collaborative model of PPE were largely not realised. The advisory group strongly recommended the provision of a more structured, stepwise, concrete framework based on educational theory for educators, to map the process of facilitating a 2:1 model, this recommendation resulting in the development of ‘The Lynam Framework’. Although this exploratory pilot study of a 2:1 model in dietetics PPE was limited from a research perspective, in that formal interviews were not conducted, small numbers were used, students’ perspectives were not examined and educators and students were not provided with specific training on a 2:1 model prior to PPE, the key recommendation made by the advisory group was implemented. Further research into the use of the 2:1 model during PPE and the ability of the framework to guide the implementation of this model has commenced. Full ethical approval has been granted for a longitudinal, mixed-methods study, following a cohort of dietetics students through their practice education over four years. This will examine the perceptions of educators and students on the use of the 2:1 model, implemented using ‘The Lynam Framework’. The possibility of amending the framework for use in other health-related disciplines is also currently being explored.

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## Authorship

A-ML designed and undertook the study, and wrote the initial draft of the paper, under the supervision of DC and CC. All authors critically reviewed, contributed to and approved the final version submitted for publication.

## Conflict of interest

The authors declare that they have no conflict of interests.

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## **Appendix 2: Professional practice studies module descriptor**

**Dublin Institute of Technology / University of Dublin, Trinity College**

<b>Pre-Requisite Modules code(s)</b>	<b>Co-Requisite Modules code(s)</b>	<b>ECTS Credits</b>	<b>Module Code</b>	<b>Module Title</b>
BIOL 2701		5	BIOL 2704	Professional Practice Studies

**Module authors:** Ms Mary Moloney, Dr Clare Corish, Ms Sheila Sugrue, Dr Dan McCartney.

**Module Description:**

This module builds on first year by teaching the professional nutrition and dietetic skills required for Practice Placements B and C. The module provides students with an understanding of the dietary management of chronic diseases in preparation for Practice Placement B.

**Module aim**

The aim of this module is to familiarise students with the skills required for nutrition and dietetic practice and the dietary management of chronic diseases the student will experience in Practice Placement B.

**Learning Outcomes:**

On completion of this module, the learner will be able to

- Describe an individual's dietary intake in the context of their nutrient requirements (a) over the previous 24 hours, (b) usual intake.
- Calculate the nutrient content of an individual's diet using methods which provide different degrees of accuracy and demonstrate an appreciation of the appropriate uses of each technique.
- Use anthropometry to nutritionally assess an individual.
- Calculate the nutritional requirements of an individual using different methods.
- Determine and negotiate dietary goals of an individual.
- Develop a simple education resource appropriate for a community or specified clinical setting.
- Devise a nutrition education presentation appropriate for a specified group of the population.
- Describe and discuss the dietary management of cardiovascular disease and diabetes mellitus.
- Interpret anthropometric, biochemical and clinical data relating to case studies on uncomplicated diabetes mellitus and cardiovascular disease.
- Develop a basic understanding of ethical principles applicable to professional practice.

**Learning and Teaching Methods:**

Practical sessions incorporating role-play, case studies, problem-solving exercises, video for self-assessment. Self-directed learning, Students Learning with Communities Project.

**Module content:**

This module focuses on healthy individuals, healthy population groups and those with common uncomplicated chronic diseases.

The dietetic management of common chronic diseases such as cardiovascular disease and uncomplicated diabetes mellitus including the implications of low income on the management of these conditions.

It includes the assessment of dietary intakes, use of anthropometry to nutritionally assess an individual, calculation of nutritional requirements, determination and negotiation of patient goals. Interview methods will focus on client/patient-centredness, interpersonal skills and ethical issues using role-play. Further practical work includes the comparison of nutritional requirements to dietary intakes and physical activity levels, and devising educational materials for specific population groups.

**Module Assessment**

Continuous assessment, 100%  
Practical professional competence, 80%  
Short question examination, 20%

**Essential Reading:**

Bauer, K & Sokolik, C. Basic Nutrition Counselling Skill Development, Thomson, 2002.  
Gable, J. Counselling Skills for Dietitians. 2nd Edition. Blackwell Pub. 2007.  
Garrow, JS & James WPT. Human Nutrition and Dietetics, 10<sup>th</sup> Edition. Churchill Livingstone, 2000.  
Gibney, MJ, Vorster, H. and Kok, F.J. Introduction to Human Nutrition. Blackwell Pub. 2002  
Physical Status: The use and interpretation of anthropometry. Report of a WHO Expert Committee (1995) WHO: Geneva.

Thomas B & Bishop J. Manual of Dietetic Practice. 4th Edition. Oxford: Blackwell Pub, 2007

**Web references, journals and other:** <http://www.indi.ie>; <http://www.bapen.org.uk/>

**Further Details:** 16h lectures (8h cardiovascular disease, 8h diabetes mellitus); 34h practical sessions to be delivered in Semester 2. Attendance mandatory.

**Date of Academic Council approval** .....

**Appendix 3: Practice placement education competency criteria and assessment forms**



**BSc (Human Nutrition and Dietetics)**

**Practice Placement Education**

**Learning Outcomes and Performance Indicators for Monitoring Students on Placement**

## Learning Outcomes and Abbreviations for Each Outcome

### 1: Knowledge and Practice (KP)

Justifies and implements nutrition care plans in a variety of settings based on appropriate data and demonstrating safe practice at all times

### 2: Professionalism (P)

Reflects on their professional role, including self-assessment, and prioritises their work effectively to meet the needs of changing circumstances and work demands

### 3: Communication (C)

Communicates effectively with patients and colleagues in a variety of settings using the most appropriate forms of communication

### 4: Team Working (TW)

Operates effectively as a team member

### 5: Service Delivery (SD)

Acts in a consistently professional manner in order to deliver the highest standards of service delivery in a wide variety of settings

### 6: Public Health Nutrition Management (PHNM)

Understands Nutrition Health Promotion, Public Health Nutrition and Population Health Principles and Approaches

**Abbreviations: KP – Knowledge and Practice, P - Professionalism C – Communication, SD – Service Delivery, TW – Team Work**

LEARNING OUTCOME 1: Knowledge and Practice (KP)	PERFORMANCE INDICATORS
<p>Justify and implement nutrition care plans in a variety of settings based on appropriate data and demonstrating safe practice at all times.</p>	<ul style="list-style-type: none"> <li>● <b>KP. 1 Demonstrates a thorough knowledge of:</b> <ul style="list-style-type: none"> <li>- <b>The theory of human nutrition and dietetics to a level that supports safe practice</b></li> <li>- The medical and surgical management of common disorders.</li> <li>- Physiology, microbiology, pharmacology, pathophysiology, clinical medicine and biochemistry as it pertains to nutrition and dietetics.</li> <li>- The special nutritional issues of different groups both throughout the life cycle and for those with special needs.</li> <li>- Food and food consumption patterns in Ireland.</li> <li>- Food science as it relates to nutrition and dietetics.</li> <li>- Up-to-date nutritional assessment methods.</li> </ul> </li> <li>● <b>KP. 2 Demonstrates an appreciation of:</b> <ul style="list-style-type: none"> <li>- Health service structures and schemes.</li> <li>- The theory of health promotion.</li> <li>- Nutrition audit and research methodology.</li> <li>- Public Health Nutrition.</li> <li>- Food preparation and service systems.</li> <li>- Food safety and nutrition-related legislation, regulations, standards and guidelines and how these apply to practice.</li> </ul> </li> <li>● <b>KP. 3</b> Is familiar with the methodologies used to collect information on retrospective, current and proposed food and nutrient intakes for clients.</li> <li>● <b>KP. 4</b> Can undertake a thorough dietary assessment, using the appropriate methodology.</li> <li>● <b>KP. 5</b> Can qualitatively assess dietary intake data by comparing food intakes to a food guidance system, such as national dietary guidelines, the food pyramid or the plate model.</li> </ul>

	<ul style="list-style-type: none"><li>• <b>KP. 6</b> Is able to analyse nutrient intakes, using food composition tables and relevant software packages.</li><li>• <b>KP. 7</b> Is able to compare dietary intake data with Recommended Dietary Allowances, estimated requirements and disease-specific requirements, as appropriate.</li><li>• <b>KP. 8</b> Identifies and records all relevant clinical, medical, biochemical and social data.</li><li>• <b>KP. 9</b> Is familiar with the range of anthropometric measurements available and the appropriate use and limitations of each measurement.</li><li>• <b>KP. 10</b> Is proficient in the undertaking of the range of anthropometric measurements.</li><li>• <b>KP. 11</b> Can select the appropriate nutrition screening tool for use for a specific patient, patient type or group.</li><li>• <b>KP. 12</b> Reviews all available documentation and assessment results.</li><li>• <b>KP. 13</b> Is able to analyse and critically evaluate all information collected.</li><li>• <b>KP. 14</b> Draws justifiable conclusions from these data.</li><li>• <b>KP. 15</b> Uses the assessment data to assign priorities for nutrition care planning.</li><li>• <b>KP. 16</b> Determines care plans for nutritional management in consultation with client/carers/family and other members of the health care team.</li><li>• <b>KP. 17</b> Identifies practical ways in which goals may be achieved.</li><li>• <b>KP. 18</b> Ensures that goals set are specific, measurable, achievable, realistic and timely (<b>SMART</b>).</li><li>• <b>KP. 19</b> Selects the best strategy in terms of feasibility, client benefit and best practice.</li></ul>
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	<ul style="list-style-type: none"> <li>• <b>KP. 20</b> Formulates meal plans and basic feeding regimens which are consistent with specific nutrition and dietetic goals of the client and are within the scope of the hospital/community food service.</li> <li>• <b>KP. 21</b> Communicates these needs to the appropriate personnel.</li> <li>• <b>KP. 22</b> Gathers all relevant data throughout the care process so that the progress of the client can be monitored.</li> <li>• <b>KP. 23</b> Modifies nutrition care plans as necessary.</li> <li>• <b>KP. 24</b> Appreciates the importance of monitoring, reviewing and follow-up of clients.</li> </ul>
<b>LEARNING OUTCOME 2: Professionalism (P)</b>	<b>PERFORMANCE INDICATORS</b>
<p>Reflect on their professional role, including self-assessment, and prioritise their work effectively to meet the needs of changing circumstances and work demands.</p>	<ul style="list-style-type: none"> <li>• <b>P. 1</b> Complies with the INDI Code of Professional Practice.</li> <li>• <b>P. 2</b> Practices within the legal and ethical boundaries of the profession.</li> <li>• <b>P. 3</b> Is totally reliable.</li> <li>• <b>P. 4</b> Is punctual throughout the daily course of work.</li> <li>• <b>P. 5</b> Is totally honest and trustworthy at all times.</li> <li>• <b>P. 6</b> Adheres to the dress code including modest dress.</li> <li>• <b>P. 7</b> Knows his/her professional limitations and works within them.</li> <li>• <b>P. 8</b> Works in a non-discriminatory and objective manner.</li> <li>• <b>P. 9</b> Works in a manner that maintains patient/client confidentiality and that upholds the client's trust.</li> <li>• <b>P. 10</b> Complies with human resource, health &amp; safety, risk management and occupational health activities and policies.</li> <li>• <b>P. 11</b> Manages available time effectively.</li> <li>• <b>P. 12</b> Complies with local and national standards on record keeping.</li> <li>• <b>P. 13</b> Includes entries in official records complying with local policies in relation to terminology and abbreviations.</li> </ul>

	<ul style="list-style-type: none"> <li>• <b>P. 14</b> Uses current technology, appropriately, in practice (may include software, multimedia, electronic search engines email, websites and video conferencing).</li> <li>• <b>P. 15</b> Recognises the need for effective self-management of workload and resources and is able to practice accordingly appropriate to the stage of undergraduate placement training.</li> <li>• <b>P. 16</b> Understands the need to keep skills and knowledge up-to-date in order to maintain fitness to practice.</li> <li>• <b>P. 17</b> Participates in consistent, reflective practice.</li> <li>• <b>P. 18</b> Evaluates own role as an educator e.g. with patients.</li> </ul>
<b>LEARNING OUTCOME 3: Communication (C)</b>	<b>PERFORMANCE INDICATORS</b>
<p>Communicate effectively with patients and colleagues in a variety of settings using the most appropriate forms of communication.</p>	<ul style="list-style-type: none"> <li>• <b>C.1</b> Develops appropriate methods for communication. May include: face-to-face, telephone, group meetings, letter/memo and email.</li> <li>• <b>C. 2</b> Identifies and addresses barriers to communication. May include: literacy issues, cultural issues, lack of understanding, interruptions, physical distractions, fear.</li> <li>• <b>C. 3</b> Is proficient in the use of the English language.</li> <li>• <b>C. 4</b> Develops effective verbal communication skills.</li> <li>• <b>C. 5</b> Uses active and reflective listening techniques. May include: encouraging, clarifying, restating/paraphrasing, reflecting, summarising and validating.</li> <li>• <b>C. 6</b> Interprets and responds to non-verbal communications.</li> <li>• <b>C. 7</b> Can adapt communication methods to meet the needs of the client/target group/audience.</li> <li>• <b>C. 8</b> Understands and knows the different behavioural therapy models.</li> <li>• <b>C. 9</b> Is non- judgemental, empathetic, genuine and respectful to clients.</li> </ul>

	<ul style="list-style-type: none"><li>• C. 10 Applies an integrated, client centred approach through working together with the client as an equal partner.</li><li>• C. 11 Uses collaborative language including 'we, us' in promoting self empowerment of the client.</li><li>• C. 12 Treats the client in a holistic manner taking into account their lifestyle, what matters to them and the factors that are likely to influence their health and dietary behaviour.</li><li>• C. 13 Applies motivational interviewing techniques as a direct method of attempting to resolve client ambivalence / motivating the client to change their health and dietary behaviour.</li><li>• C. 14 Allows the client/carers/family to contribute and clarify concerns or issues and identifies the barriers to compliance and willingness to change.</li><li>• C. 15 Negotiates client orientated goals and strategies.</li><li>• C. 16 Provides information and responds to client concerns.</li><li>• C. 17 Evaluates the process and outcomes of the counseling sessions.</li><li>• C. 18 Writes clearly, concisely and professionally in a technically and grammatically accurate manner.</li><li>• C. 19 Uses correct spelling at all times.</li><li>• C. 20 Demonstrates the ability to produce educational materials that are relevant and sensitive to the comprehension ability of the intended target group or individual.</li><li>• C. 21 Understands the need for effective communication with other health professionals as well as with service users.</li><li>• C. 22 Maintains clear and concise records of all aspects of the nutrition care process.</li></ul>
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	<ul style="list-style-type: none"> <li>• <b>C. 23</b> Formulates unambiguous instructions for other personnel involved in the delivery of nutrition care.</li> <li>• <b>C. 24</b> Uses current technology, appropriately (may include software, multimedia, electronic search engines, email, websites and video conferencing)</li> </ul>
<b>LEARNING OUTCOME 4: Team Working (TW)</b>	<b>PERFORMANCE INDICATORS</b>
Operate effectively as a team member.	<ul style="list-style-type: none"> <li>• <b>TW. 1</b> Appreciates the role of other professionals.</li> <li>• <b>TW. 2</b> Works co-operatively within a professional environment to achieve an integrated approach to client care, tasks and projects.</li> <li>• <b>TW. 3</b> Works in partnership with other professionals, fellow students, support staff, service users and carers.</li> <li>• <b>TW. 4</b> Understands the importance of, and is capable of, assessing a situation, determining the nature and severity of the problem and reflecting on acquired knowledge and experience to resolve the problem.</li> </ul>
<b>LEARNING OUTCOME 5: Service Delivery (SD)</b>	<b>PERFORMANCE INDICATORS</b>
Act in a consistently professional manner using evidence based practice in order to deliver the highest standards of service delivery in a wide variety of settings.	<ul style="list-style-type: none"> <li>• <b>SD. 1</b> Reviews, evaluates and interprets relevant research and information from appropriate nutritional, medical and public health related literature.</li> <li>• <b>SD. 2</b> Appreciates how research findings can be applied to practice.</li> <li>• <b>SD. 3</b> Incorporates research findings with other relevant information and draws conclusions which can be applied in practice.</li> <li>• <b>SD. 4</b> Reviews own practice periodically to ensure the implementation of best practice principles.</li> <li>• <b>SD. 5</b> Undertakes work that contributes to the progressive development of both knowledge and nutrition/dietetic practice.</li> <li>• <b>SD. 6</b> Prioritises the workload given.</li> <li>• <b>SD. 7</b> Adapts to the different environment and to the varied workload commonly experienced in complementary training.</li> </ul>



**Note: this learning outcome was not discussed at trainers meeting 21/01/09**

<b>LEARNING OUTCOME 6: Public Health Nutrition Management (PHNM)</b>	<b>PERFORMANCE INDICATORS</b>
<p>Understands Nutrition Health Promotion, Public Health Nutrition and Population Health Principles and Approaches.</p>	<p><b><u>Appreciates:</u></b>  <b>PHNM. 1</b> The role of food, diet and nutrition in population health and the theory of human nutrition and dietetics to a level that supports safe practice.  <b>PHNM. 2</b> Other determinants of health.  <b>PHNM. 3</b> The influences of other factors on food intakes and nutritional wellbeing.  <b>PHNM. 4</b> Relevant local, national and international policies.  <b>PHNM. 5</b> The role of partnership within and outside of the health services in promoting health.</p>
<p>Understands methodologies in developing, implementing, supporting and evaluating initiatives to promote good health.</p>	<p><b><u>Appreciates the importance of:</u></b>  <b>PHNM. 6</b> Project/programme proposals.  <b>PHNM. 7</b> Relevant needs assessment.  <b>PHNM. 8</b> Stakeholder involvement.  <b>PHNM. 9</b> Programme delivery.  <b>PHNM. 10</b> Project/programme evaluation.  <b>PHNM. 11</b> Developing sustainable approaches according to identified needs.  <b>PHNM. 12</b> Relevant documentation and feedback according to programme aims and stage of programme.</p>
<p>Appreciates and demonstrates, when possible, the skills In Programme Delivery.</p>	<p><b><u>Appreciates the importance of:</u></b>  <b>PHNM. 13</b> The different approaches to delivering nutrition health promotion programmes / services.  <b>PHNM. 14</b> Demonstrating group facilitation skills.  <b>PHNM. 15</b> Demonstrating skills in training others in nutrition and health.  <b>PHNM. 16</b> Personal empowerment in all programmes/services.</p>

	<p><b>PHNM. 17</b> Understanding the most relevant approach(es) within each specific programme /service according to population group and setting.</p> <p><b>PHNM. 18</b> Developing the following skills: group facilitation, training others in nutrition and health, personal empowerment and the most relevant approaches within each specific programme /service according to population group and setting.</p> <p><b>PHNM. 19</b> Develops relevant resources to support programmes according to good practice.</p> <p><b>PHNM. 20</b> Demonstrates consideration of literacy and cultural issues in programme/service development.</p>
<p>Demonstrates understanding of ongoing need for sustainable approaches to promoting nutritional health</p>	<p><b><u>Demonstrates and Understands:</u></b></p> <p><b>PHNM. 21</b> Understands and participates in research and evaluation.</p> <p><b>PHNM. 22</b> Demonstrates ability to complete relevant reports and documentation.</p>

Learning Outcomes (n, 5) and their Competency Criteria at the Three Stages of Training (Weeks 1 - 6, Weeks 7 - 12 and Weeks 13+)

LEARNING OUTCOME 1: Justify and implement nutrition care plans in a variety of settings based on appropriate data and demonstrating safe practice at all times.	COMPETENCY CRITERIA	Week 1 – 6  <u>E=essential</u> <u>D=desirable</u>	Week 7 - 12	Week 13 +
<b>Knowledge and Practice (KP)</b>  <b>KP</b> <b>1, 2, 4, 8, 12</b>	Uses appropriate sources of information to ensure a full and accurate assessment e.g. health care professional referral, medical/nursing notes, computer databases, bed end charts, other team members, the patient, relatives and carers.	<u>E</u> Shows knowledge of appropriate sources of information and is able to collect basic accurate information from medical/nursing notes, bed end charts and patients.	<u>E</u> Demonstrates ability to effectively use sources such as relatives, carers and other team members.	<u>E</u> Demonstrates ability to source relevant information from wider sources such as old medical notes, computer databases and literature.
<b>KP</b> <b>1, 4, 12</b>	Identifies relevant medical information e.g. diagnosis, prognosis, past medical history, medication, biochemistry, other test results.	<u>D</u> Is able to distinguish between medical information that is relevant and non relevant in a non complex case i.e. one condition without co-morbidities.	<u>D</u> Is able to distinguish between medical information that is relevant and non relevant in increasingly complex cases i.e. co existing morbidities.	<u>E</u> Is able to identify the need for further relevant investigations/tests so as to provide all necessary information about the patient.

<p style="text-align: center;"><b>KP</b> <b>4, 10, 11, 13, 14</b></p>	<p>Collects, records and evaluates all information relevant to the case in line with established standards and procedures (the following types of information may be relevant: medical, psychological, personal, social, lifestyle, physical activity, cultural, financial, readiness to change).</p>	<p><b>E</b> Is able to collect and record all relevant medical, social, lifestyle, cultural, financial and activity level information and can evaluate the relevance of this information to the patient's nutritional status in a non complex case.</p>	<p><b>E</b> Is able to collect and record all relevant medical, social, lifestyle, cultural, financial and activity level information and can evaluate the relevance of this information to the patients' nutritional status in increasingly complex cases.</p>	<p><b>E</b> Demonstrates ability to collect, record and evaluate personal and psychological issues and <b>D</b> can assess readiness to change in an individual / group.</p>
<p style="text-align: center;"><b>KP</b> <b>3, 5, 6, 7, 13, 14</b></p>	<p>Obtains an accurate overview of a patient's usual dietary intake or a 24 hour recall to include all relevant food groups, portion sizes, meal frequency, variety of food consumed, cooking methods, religious/cultural beliefs and foods relevant to the specific disease/condition.</p>	<p><b>E</b> Is able to obtain and record a 24 hour recall of diet on patients/clients e.g. a patient/client prescribed a high protein, high energy (HPHC) diet and obtain and record an accurate overview of a person's usual dietary intake including all relevant food groups, portion sizes, meal frequency, variety of food consumed, cooking methods, and religious/cultural beliefs.</p>	<p><b>E</b> Is able to include dietary questions that are disease specific and demonstrates knowledge of different methods of obtaining dietary information.</p>	<p><b>E</b> Demonstrates ability to adapt different methods of obtaining dietary information to suit the client's needs.</p>

<p style="text-align: center;"><b>KP</b> <b>4, 9, 10, 11</b></p>	<p>Collects and interprets anthropometric data including weight/weight history, BMI, waist circumference and any other relevant measurements. Understands the role of screening tools and is able to apply them appropriately.</p>	<p><b>E</b> Demonstrates proficiency in collecting anthropometric data such as weight, weight history, height, waist circumference and calculation of BMI. Can interpret these data and understand their relevance to the patient's nutritional status in non-complex patients.</p>	<p><b>E</b> Demonstrates proficiency in collecting anthropometric data in increasingly complex patients. Can interpret these data and understand their relevance to the patient's nutritional status in increasingly-complex patients <b>D</b> Demonstrates proficiency in collecting and interpreting alternative anthropometric measures e.g. knee height as a replacement for height, and understands how to apply these. Demonstrates proficiency in undertaking anthropometric measures such as girths and skin-folds and shows an understanding of their usefulness and limitations.</p>	<p><b>E</b> Demonstrates proficiency in collecting anthropometric data in complex patients. Can interpret these data and understand their relevance to the patient's nutritional status in complex patients <b>D</b> Demonstrates awareness of nutrition screening tools that are available and commonly used and is able to apply them appropriately.</p>
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<p style="text-align: center;"><b>KP</b> <b>1, 4, 5, 6, 7, 13, 14</b></p>	<p>Interprets appropriate quantitative and qualitative information accurately e.g. food record charts, diet history, oral nutritional supplements/ enteral feed composition, fluid balance and biochemistry.</p>	<p><b>E</b> Is able to analyse information from recorded dietary intakes both qualitatively and quantitatively using different methods e.g. manually (with and without food composition and standard portion tables) and using computer software packages. Has knowledge of nutritional composition of standard oral nutritional supplements and enteral feeds. Shows an understanding of the relationship between common biochemical tests and diet.</p>	<p><b>E</b> Demonstrates awareness of the appropriate use of the different methods of dietary analysis and can evaluate the findings in the context of the method, the client and the diagnosis. Demonstrates knowledge of the composition of a wide range of nutritional supplements and enteral feeds. Is able to analyse and interpret fluid balance charts and can use biochemical data to determine the appropriateness of supplements and enteral feeds.</p>	<p><b>E</b> Is able to critically analyse all data collected and identify further steps that may be necessary so as to obtain an accurate overview of the patient's status.</p>
<p style="text-align: center;"><b>KP</b> <b>1, 4, 13</b></p>	<p>Calculates energy and nutrient requirements accurately using equations / methodology / reference standards appropriate to the patient / group type.</p>	<p><b>E</b> Is able to calculate energy and protein requirements for healthy individuals and uncomplicated patients e.g. lipid lowering, prescribed a high protein, high energy (HPHC) diet using appropriate equations /methodology and apply appropriate physical activity levels. Demonstrates knowledge of macronutrient &amp; micronutrient requirements in simple, non-complex cases.</p>	<p><b>E</b> Is able to calculate energy and protein requirements for patients using appropriate equations/ methodologies and can apply appropriate stress and activity factors. Demonstrates an understanding of nutritional requirements related to specific disease states.</p>	<p><b>E</b> Demonstrates ability to evaluate different methodologies for calculating nutrient requirements in the context of specific patients and disease states e.g. Re-feeding syndrome or diabetic with multiple co-morbidities (e.g. CHD and CKD).</p>

<p style="text-align: center;"><b>KP</b> <b>15, 16, 17, 19</b></p>	<p>Plans, agrees and implements suitable intervention with client / carer that takes account of relevant patient issues e.g. diagnosis, food likes/dislikes, personal beliefs/religion, culture, personal support, finances, mood, mobility, communication issues, cooking/ shopping facilities, motivation to change, work/family commitments and key life events.</p>	<p><b>D</b> Is able to plan intervention for a patient that takes issues such as diagnosis, food likes/dislikes, personal beliefs/religion, culture, finances, cooking/shopping facilities, work/family commitments and key life events into account. Can implement the plan in non complex cases e.g. delivering standard advice on lipid lowering.</p>	<p><b>E</b> Is able to plan and implement intervention in non-complex and more complex cases e.g. where co-morbidities exist and can include issues such as personal support, mood, mobility and communication issues. Attempts reaching agreement on dietary goals with individuals/ groups.</p>	<p><b>E</b> Is able to agree goals with individuals / groups and <b>D</b> can evaluate motivation to change.</p>
<p style="text-align: center;"><b>KP</b> <b>2, 17, 18, 19, 20</b></p>	<p>Plans and implements interventions that take relevant institutional / organisational issues into account e.g. nursing, other staff workloads and shift patterns, budgetary issues, catering limitations and is in line with best practice.</p>	<p><b>D</b> Is able to plan and implement interventions that are in line with best practice and demonstrate understanding of the catering limitations within the institution/ organisation.</p>	<p><b>D</b> Can plan and implement interventions demonstrating awareness of issues such as staff workloads and patterns, and budgets e.g. using oral nutritional supplements on hospital contract. Observe nursing procedures relating to dietetic practice e.g. enteral / parenteral feeding.</p>	<p><b>E</b> Demonstrates ability to adapt to limitations of the institution/organisation but at the same time keeping in line with best practice.</p>

<p><b>KP 20</b></p>	<p>Formulates appropriate meal plans, menu adaptations and feeding regimens which reflect identified and agreed goals.</p>	<p><u>D</u> Is able to draft a meal plan which takes account of available menus.</p>	<p><u>E</u> Is able to prepare meal plans and adapt menus to reflect specified goals. Can formulate enteral feeding regimens based on identified targets using standard enteral feeds.</p>	<p><u>D</u> Demonstrates ability to prepare meals plans and enteral feeding regimens using a variety of nutritional products so as to achieve identified and agreed goals.</p>
<p><b>KP 12, 22, 23, 24</b></p>	<p>Reviews care plans as appropriate, collecting all relevant documentation and assessment results and is able to critically evaluate all information and justify changes made to care plans as a result of this evaluation.</p>	<p><u>E</u> Is able to collect information from sources such as medical notes, nursing notes, end of bed charts and laboratory results so as to review care plans.</p>	<p><u>E</u> Can collect all relevant information including sources such as staff and carers when reviewing patients and can formulate revised care plans.</p>	<p><u>E</u> Demonstrates ability to critically evaluate care plans and information pertaining to the care plan and implement a revised plan as appropriate.</p>
<p><b>KP 17, 18, 23, 24</b></p>	<p>For review clients negotiates and agrees changes to dietetic care plan.</p>	<p>Not applicable.</p>	<p><u>E</u> Is able to suggest revised goals which are practical for the individual/group concerned.</p>	<p><u>E</u> Shows ability to negotiate with the client/group so as to agree identified goals.</p>
<p><b>KP 23, 24.</b></p>	<p>Evaluates client's/carer's understanding of the nutritional care plan/agreed changes and answers questions.</p>	<p>Not applicable.</p>	<p><u>E</u> Is able to answer questions about revised care plan.</p>	<p><u>E</u> Is able to evaluate the client's/ carer's understanding of a care plan and make any necessary changes as a result of this evaluation.</p>



<p><b>KP 1, 2</b></p>	<p>Reports back to supervising Dietitian(s) justifying interventions based on knowledge of evidence based practice/best practice in all disciplines relevant to the case e.g. medicine, nutrition, psychology, pharmacology and sociology.</p>	<p><b>E</b> Reports to dietitian justifying basic actions based on knowledge of evidence based practice in disciplines such as medicine and nutrition in non-complex cases.</p>	<p><b>E</b> Can justify interventions based on knowledge of evidence based practice/best practice in all relevant disciplines in increasingly complex cases.</p>	<p><b>E</b> Can justify interventions based on evidence based practice/best practice and appreciates how adaptations may be necessary to achieve practical goals.</p>
<p><b>KP 8, 21</b></p>	<p>Liaises with team members, explains actions clearly and documents all relevant information inline with standard policies and procedures.</p>	<p><b>D</b> Can document in dietetic records in line with standard policies and procedures.</p>	<p><b>D</b> Is able to liaise with team members, explain actions clearly and document all relevant information in line with standard policies and procedures.</p>	<p><b>E</b> Demonstrates appreciation of the importance of liaison with relevant team members and has appropriate writing skills by giving clear documentation.</p>

LEARNING OUTCOME 2: Reflect on their professional role, including self-assessment, and prioritise their work effectively to meet the needs of changing circumstances and work demands.	COMPETENCY CRITERIA	Week 1 - 6	Week 7 - 12	Week 13 +
<p><b>Professionalism</b> (P)</p> <p>P 1, 2, 5</p>	<p>Complies with the INDI Code of Professional Practice and practices within the legal and ethical boundaries of the profession.</p>	<p><b>D</b> Knows the professional code of practice and legal and ethical issues related to practice including patient confidentiality.</p>	<p><b>E</b> Demonstrates ability to comply with legal and professional codes in areas such as patient confidentiality, record keeping and communication with other professionals and clients.</p>	<p><b>E</b> Demonstrates an understanding of the difficulties of ethical boundaries. <b>D</b> Is able to work effectively within those boundaries e.g. managing family/friends/local acquaintances.</p>
<p>P 3, 7</p>	<p>Is reliable. Knows his /her professional limitations and works within them.</p>	<p><b>E</b> Is reliable. Knows their own limitations for this stage of training and seeks help appropriately.</p>	<p><b>E</b> Is reliable. Is aware of own limitations for this stage of training and seeks help appropriately.</p>	<p><b>E</b> Is reliable. Is aware of own limitations for this stage of training and seeks help appropriately.</p>
<p>P 9</p>	<p>Works in a manner that maintains patient/client confidentiality and that upholds the client's trust.</p>	<p><b>E</b> Always maintains patient/client confidentiality and behaves in such a manner that assures the patient/client of such confidentiality.</p>	<p><b>E</b> Always maintains patient/client confidentiality and behaves in such a manner that assures the patient/client of such confidentiality.</p>	<p><b>E</b> Always maintains patient/client confidentiality and behaves in such a manner that assures the patient/client of such confidentiality.</p>

<b>P 8</b>	Works in a non-discriminatory manner.	<b>E</b> Does not discriminate against any individual/group.	<b>E</b> Does not discriminate against any individual/group.	<b>E</b> Does not discriminate against any individual/group.
<b>P 10</b>	Complies with human resource, health & safety, risk management & occupational health activities and policies.	<b>D</b> Is aware of the need for local policies that apply to work within an institution / organisation and complies with these policies.	<b>E</b> Is aware of the need for local policies that apply to work within an institution / organisation and complies with these policies.	<b>E</b> Is aware of the need for local policies that apply to work within an institution / organisation and complies with these policies.
<b>P 14</b>	Uses current technology, appropriately, in practice (may include software, multimedia, electronic search engines, email, websites and video conferencing).	<b>D</b> Is aware of local policies that apply to use of technology and complies with these policies.	<b>D</b> Is aware of local policies that apply to use of technology and complies with these policies.	<b>E</b> Is aware of local policies that apply to use of technology and complies with these policies.
<b>P 4, 11</b>	Is punctual throughout the daily course of work. Manages available time effectively.	<b>E</b> Is punctual throughout the daily course of work. Is able to meet deadlines for submission of assignments.	<b>E</b> Is punctual throughout the daily course of work. Works efficiently to complete tasks within an agreed time frame.	<b>E</b> Is punctual throughout the daily course of work. Is able to work effectively to complete required work within recommended time frames.
<b>P 12, 13, 14</b>	Includes entries in official records which comply with local and national standards on record keeping.	<b>D</b> Is able to include entries in all relevant documentation in compliance with local and national standards on record keeping with guidance and supervision.	<b>E</b> Is able to include entries in all relevant documentation in compliance with local and national standards on record keeping with guidance and supervision.	<b>E</b> Is able to include entries in all relevant documentation in compliance with local and national standards on record keeping with minimal supervision.

<b>P 15</b>	Recognises the need for effective self-management of workload and resources & is able to practice accordingly.	<b>E</b> Is able manage an agreed workload by appropriate preparation for and completion of assignments.	<b>E</b> Is able to use available resources and time efficiently so as to manage a workload of 5-8 patients taking into consideration patient complexity or a small group of patients/clients.	<b>E</b> Is able to use available resources and time efficiently so as to manage workload of 8-12 patients taking into consideration patient complexity or a small group of patients/clients.
<b>P 16</b>	Understands the need to keep skills and knowledge up-to-date in order to maintain fitness to practice.	<b>E</b> Appreciates the importance of developing up-to-date knowledge and skills.	<b>D</b> Demonstrates an awareness of the need to evaluate knowledge and skills and keep up to date.	<b>E</b> Demonstrates an awareness of the need to evaluate knowledge and skills and keep up to date.
<b>P 17</b>	Participates in consistent, reflective practice. Shows an ability to reflect on practice in a way which is descriptive and insightful and can perform self-evaluation which suggests a plan for development of practice.	<b>E</b> Is able to describe work undertaken and develops the skill of reflective practice.	<b>E</b> Demonstrates an ability to reflect on practice and suggest ways in which their practice can be improved.	<b>E</b> Demonstrates an ability to reflect on practice and suggest ways in which their practice can be improved Can self-evaluate and plan strategies for development of practice.
<b>P 18</b>	Evaluates own role as an educator e.g. with patients.	<b>E</b> Demonstrates awareness of the need to observe and evaluate patient education practices.	<b>E</b> Demonstrates awareness of the need to evaluate their own patient education practices.	<b>E</b> Demonstrates awareness of the need to evaluate their own patient education practices.
<b>P 6</b>	Adheres to the dress code including modest dress.	<b>E</b> Adheres to the dress code as per local policy.	<b>E</b> Adheres to the dress code as per local policy.	<b>E</b> Adheres to the dress code as per local policy.

<b>LEARNING OUTCOME 3: Communicate effectively with patients and colleagues in a variety of settings using the most appropriate forms of communication</b>	<b>COMPETENCY CRITERIA</b>	<b>Week 1 - 6</b>	<b>Week 7 - 12</b>	<b>Week 13 +</b>
<p style="text-align: center;"><b>Communication (C)</b></p> <p style="text-align: center;"><b>C1</b></p>	<p>Performs introductions, builds rapport and establishes purpose of interview.</p> <p>Aware of the need to display degree of sensitivity to the medical condition, social circumstances and literacy of the client.</p>	<p><b>E</b> Introduces themselves as a student Dietitian (and supervising Dietitian), spends time explaining what they are going to do.</p>	<p><b>E</b> Performs introductions and is able to build rapport by putting the patient at their ease. Can explain purpose of dietetic interview.</p>	<p><b>E</b> Shows ability to show appropriate sensitivity towards patient's condition e.g. with chronic or terminal illness, social circumstances and literacy.</p>

<p><b>C</b> <b>4, 5, 6</b></p>	<p>Demonstrates an ability to engage in active listening e.g. respond to verbal and non verbal cues, summarise, paraphrase, ensures patient knows they have been heard using appropriate minimal encouragers e.g. nodding with eye contact, an encouraging smile and minimal utterances (e.g. 'and', 'so'....).</p>	<p><b>E</b> Listens attentively (active listening) and is able to demonstrate to patient that they have been heard by nodding and asking appropriate questions so as to elicit more detailed information.</p>	<p><b>E</b> Shows ability to summarise and paraphrase what the client has said in a way which demonstrates active, attentive and reflection listening.</p>	<p><b>E</b> Demonstrates an ability to identify and respond to verbal and nonverbal cues.</p>
<p><b>C</b> <b>9, 10, 11, 12</b></p>	<p>Notes and responds to patients' individual concerns. Is non-judgemental, empathetic, genuine and respectful to clients. Has a client centred approach.</p>	<p><b>D</b> Can demonstrate empathy towards the concerns of a patient e.g. non-judgemental reactions.</p>	<p><b>E</b> Is able to allow the patient to elaborate so as to clarify concerns and shows ability to respond to these concerns by offering appropriate solutions.</p>	<p><b>E</b> Demonstrates ability to adapt intervention as a response to a client's concerns.</p>

<p><b>C</b> 2, 4, 7, 11, 12, 13, 14, 15, 20</p>	<p>Communicates with the patient using a client centred approach e.g. uses appropriate language, makes use of visual and other aids. Negotiates client oriented goals and strategies.</p>	<p><b>D</b> Demonstrates ability to explain dietary interventions for non-complex cases, i.e. one condition without co-morbidities, and begins to use language that is easily understood and free from medical terminology. Is able to use a diet sheet appropriately to support their explanations.</p>	<p><b>D</b> Is able to deliver advice, explaining interventions using language that is appropriate for the client. Uses and adapts resources appropriately taking the patient's/client's level of understanding into consideration.</p>	<p><b>E</b> Demonstrates ability to adapt communication technique and resources or develop new resources so as to suit the client / group. Is able to maintain direction in an interview in a client-centred way.</p>
<p><b>C</b> 14, 15, 16, 20</p>	<p>Provides appropriate information.</p>	<p><b>D</b> Is able to give appropriate information to non complex individual cases in verbal and written format.</p>	<p><b>E</b> Is able to give appropriate information to non-complex individual case in verbal and written format <b>D</b> Demonstrates ability to advise increasingly complex individual cases &amp; prepare &amp; deliver appropriately targeted group advice.</p>	<p><b>E</b> Is able to evaluate the appropriateness of standard information and adapt this to suit the client / group.</p>
<p><b>C</b> 8, 13</p>	<p>Demonstrates awareness of the role of behavioural change skills such as patient centeredness e.g. empathy, genuineness, acceptance and respect.</p>	<p><b>D</b> Is aware of behaviour change skills.</p>	<p><b>D</b> Demonstrates knowledge of the appropriateness of behaviour change skills with specific clients / groups.</p>	<p><b>D</b> Demonstrates ability to apply some of the principles underlying behaviour change skills in appropriate situations.</p>

<p><b>C</b> <b>10, 15</b></p>	<p>Explores the options for behaviour change and negotiates with the client to agree goals that fulfil, for example, 'SMART' criteria.</p>	<p><b>D</b> Explores the options for behaviour change using a client-centred approach and negotiates one or two goals using, for example, 'SMART' criteria.</p>	<p><b>E</b> Is able to establish appropriate goals using, for example, 'SMART' criteria and shows ability to negotiate &amp; achieve agreement with the client /group.</p>	<p><b>E</b> Is able to evaluate the effectiveness of an intervention and re-negotiate new goals as appropriate.</p>
<p><b>C</b> <b>3, 17, 18, 19, 22</b></p>	<p>Records all aspects of the nutrition care process in accordance with local and national standards.</p>	<p><b>D</b> Records all collected data on appropriate record cards in a manner which is technically and grammatically correct Demonstrates ability to write appropriate letters to other professionals which are technically and grammatically correct.</p>	<p><b>E</b> Records entries in medical notes in line with local and national standards.</p>	<p><b>E</b> Shows an appreciation of the importance of accurate and concise recording of all appropriate information inline with local and national standards.</p>
<p><b>C</b> <b>3, 21, 22, 23</b></p>	<p>Formulates unambiguous instructions for other personnel involved in the delivery of nutrition care.</p>	<p><b>D</b> Is able to formulate and record instructions in non-complex cases that are clear and technically and grammatically correct.</p>	<p><b>D</b> Shows ability to prepare appropriate, clear and concise instructions in a manner that complies with professional standards.</p>	<p><b>E</b> Demonstrates an appreciation of the importance of effective communication with all relevant parties.</p>



<p><b>C 24</b></p>	<p>Uses current technology, appropriately, as a tool to aid in communication (may include bleep systems, software, multimedia, email, websites and video conferencing). Is aware of local and national policies with regard to the use of current technology bearing in mind patient / client confidentiality.</p>	<p><b>D</b> Is able to use current technology such as bleep systems, email, websites and PowerPoint appropriately for communication with colleagues, clients and presentations to groups.</p>	<p><b>E</b> Uses technology such as multimedia appropriately in communication and education of clients/groups.</p>	<p><b>E</b> Is able to evaluate the role of technology in the practice setting and is aware of its limitations.</p>
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LEARNING OUTCOME 4: Operate effectively as a team member	COMPETENCY CRITERIA	Week 1 - 6	Week 7 - 12	Week 13 +
<p><b>Team Working (TW)</b></p> <p><b>TW</b> <b>1, 2, 3</b></p>	<p>Participates as a team member within their own department.</p> <p>Works in partnership with other professionals, support staff, service users and carers to achieve an integrated approach to client care, tasks and projects.</p>	<p><b>E</b> Shows understanding of the role of professional staff within their own department and of other professionals, carers and the clients in the delivery of service.</p> <p>Consults with appropriate professional staff e.g. nursing staff, care assistants to formulate an assessment of the patient or client.</p>	<p><b>E</b> Is able to work with guidance and supervision as a team member within their own department.</p> <p>Is able to consult with other professionals e.g. nursing, medical, speech and language therapy, carers and the client in the planning and delivery of care, tasks and projects.</p>	<p><b>E</b> Is able to work with guidance and supervision as a team member within their own department.</p> <p>Can evaluate and use as appropriate the contribution of other parties (patient, carers, nursing, medical, other health professionals) in the delivery of service.</p>
<p><b>TW</b> <b>1, 2, 3, 4</b></p>	<p>Is able to assess a situation, determine the nature and severity of the problem and call upon the required knowledge and experience to deal with the problem.</p>	<p><b>D</b> Observes / participates in discussion around problem solving and identifying the health care professionals to consult.</p>	<p><b>E</b> Is able to identify their own limitations in the delivery of appropriate care.</p>	<p><b>E</b> Is able to identify the necessity for expertise or experience in a situation and call upon the appropriate knowledge and experience to deal with the situation or problem.</p>

<b>LEARNING OUTCOME 5:</b> <b>Act in a consistently professional manner using evidence based practice in order to deliver the highest standards of service delivery in a wide variety of settings.</b>	<b>COMPETENCY CHECKLIST</b>	<b>Week 1 - 6</b>	<b>Week 7 - 12</b>	<b>Week 13 +</b>
<b>Service Delivery (SD)</b>  <b>SD</b> <b>1</b>	Reviews, evaluates and interprets relevant research and information from appropriate nutritional, medical and public health related literature.	Not applicable.	<u>D</u> Reviews research and information from appropriate sources that is relevant to disease states / conditions that arise.	<u>D</u> Is able to review and evaluate research and interpret how it can be applied to practice.
<b>SD</b> <b>2, 3</b>	Appreciates how research findings with other relevant information can be applied and draws conclusions which are practical.	Not applicable.	<u>D</u> Shows appreciation of how research and other information can inform practice which is achievable and practical.	<u>D</u> Is able to apply research in a way which is achievable and practical.
<b>SD</b> <b>1, 2, 3</b>	Critically appraises research findings as fundamental to evidence- based practice.	Not applicable.	Not applicable.	<u>D</u> Is able to critically appraise research from a number of relevant sources and interpret its use in practice.

<b>SD 4</b>	Reviews own practice periodically to ensure the implementation of best practice principles.	<b>D</b> Develops the skills to reflect on service delivery.	<b>D</b> Further development of the skills to reflect on service delivery.	<b>E</b> Demonstrates appreciation of the need to review practice periodically to ensure best practice.
<b>SD 2, 5</b>	Appreciate how research findings can be applied to practice.	Not applicable.	<b>D</b> Demonstrates understanding of the need for research.	<b>D</b> Is able to explain how research can be applied to practice.
<b>SD 5</b>	Undertakes work that contributes to the development of the knowledge base of nutrition and dietetic practice.	Not applicable.	Not applicable.	<b>D</b> Is able to carry out a research project in the practice setting which contributes to the knowledge base of practice should the opportunity arise.
<b>SD 5</b>	Supports and collaborates with others involved in research studies.	Not applicable.	Not applicable.	<b>D</b> Is able to offer support to others in research.
<b>SD 6</b>	Prioritizes the workload given for all placements.	Not applicable.	Not applicable.	<b>E</b> Is able to prioritize essential versus non-essential (desirable) tasks to be undertaken.
<b>SD 7</b>	Adapts to the different environment and to the varied workload commonly experienced in <b>complementary training</b>	Not applicable.	<b>D</b> Is able to adapt / cope with managing the varying/different client clinical conditions commonly seen in the same/one outpatient clinic in a smaller hospital	<b>E</b> Is able to adapt / cope with managing the varying/different client clinical conditions commonly seen in the same/one outpatient clinic in a smaller hospital



**BSc Human Nutrition & Dietetics**  
*Dublin Institute of Technology, Kevin Street*  
*& The University of Dublin, Trinity College*

**Assessment of Practice Placement Education**

**Learning Outcomes Practice Placement B**

**THIS FORM MUST BE COMPLETED & DISCUSSED WITH THE STUDENT BY THE PRACTICE PLACEMENT EDUCATOR BEFORE THE STUDENT PROCEEDS TO THE NEXT PRACTICE PLACEMENT EDUCATOR.**

This will enable the student and the practice placement educator to reflect on and discuss student progress.

A summary assessment form will be completed by the student coordinator at the end of the period in one location (Hospital/Community) before the student moves to the next location.

<b>Student name:</b>	<b>Date:</b>
<b>Practice Placement Educator name:</b>	
<b>Was the completion of this form student-led?</b>	Yes <input type="checkbox"/> No <input type="checkbox"/>

**Placement setting [Location (Hospital/Community) & Week No.]:** \_\_\_\_\_

**Assessment method:**

- Direct observation by your Practice Placement Educator of consultation(s) or clinic(s).
- Reflective discussion between you and the Practice Placement Educator.
- Examination of patient records and other documentation.
- Written Project work/Health Promotion/Working with Groups

**Reflection Log:**

Reflection Logs from previous weeks discussed: Yes  No   
If no, why not? \_\_\_\_\_

Did the student initiate use of the reflection logs this week? Yes  No   
- Please comment if indicated: \_\_\_\_\_



c) Demonstrates an ability to analyse this information, in terms of energy/protein and micronutrient content (e.g. Ca/Fe).		
d) Demonstrates an increasing ability to record and analyse fluid balance information.		
e) Shows knowledge of nutritional composition of standard ONS and enteral feeds.		
f) Is able to calculate energy, protein and fluid requirements for non-complex patients using appropriate equations/methodology.		
g) Demonstrates knowledge of general healthy eating guidelines.		
h) Demonstrates knowledge of relevant health promotion concepts.		
i) Shows an understanding of the relationship between relevant biochemical tests and diet.		
j) Demonstrates knowledge of: (i) common medical conditions in cardiology/diabetes/care of the elderly/obesity/nutrition through the life cycle, (ii) basic knowledge of appropriate nutritional requirements for patients in these categories.		
<b>3. Anthropometry</b>		<b>Provide Evidence as appropriate</b>
a) Demonstrates proficiency in collecting anthropometric data: • weight • weight history • height/ulna length • BMI • waist circumference		
b) Can interpret these data and understand their relevance to the patient's nutritional status.		
<b>4. Nutrition Care/Presentation/Project Planning</b>		
a) (i) Shows ability, <u>under guidance</u> , to plan and implement a dietetic intervention, with clear aims & objectives, in line with best practice, for a patient, while considering the following as applicable:		





behaves in such a manner that assures the patient of such confidentiality.		
c) Is punctual throughout the daily course of work.		
d) Adheres to the dress code as per local policy.		
e) Is able to reflect on practice in a descriptive way (including completion of reflection log).		
g) Demonstrates interest/motivation in work		
h) Shows ability to manage an agreed workload by appropriate preparation for and completion of patient consultations/ assignments/ project/ presentation within an agreed timeframe.		
<b>COMMUNICATION (C)</b>		<b>Always provide comments/evidence</b>
a) Introduces themselves to a patient or group as a student dietitian (and introduces the dietitian), spends time explaining purpose of dietetic interview/ presentation/ group session.		
b) Listens actively: is able to demonstrate understanding of what a patient/group reported, and shows the ability to elicit more detailed information/ attempt to address the issue.		
c) Can demonstrate empathy towards patient's/ group's concerns i.e. non-judgemental.		
d) Demonstrates ability to explain dietary interventions/ deliver presentation in verbal and written format, in a clear manner that is technically and grammatically correct, free from medical jargon and appropriately pitched.		
e) Shows ability to use a diet sheet/ presentation appropriately to support their explanations, and amend this under guidance as appropriate.		
f) Shows awareness of behaviour change skills and is able to identify resistance and attempt to use a behavioural change, patient-centred approach.		
g) Shows ability to negotiate one or two		





## BSc Human Nutrition & Dietetics

*Dublin Institute of Technology, Kevin Street  
& The University of Dublin, Trinity College*



### Assessment of Practice Placement Education

#### Learning Outcomes Practice Placement C

**THIS FORM MUST BE COMPLETED & FEEDBACK GIVEN BY PRACTICE PLACEMENT EDUCATOR BEFORE THE STUDENT PROCEEDS TO THE NEXT EDUCATOR.**

This will enable the student and the practice placement educator to reflect on and discuss student progress.

A summary assessment form will be completed by the student coordinator at the end of the 12 week period.

Student name:

Date:

Practice Placement Educator name:

Placement setting (Area & Week):

Is this student competent to proceed to college-based consolidation? (only to be filled out post hospital-based consolidation) Yes  No

Assessment method:

- Direct observation by your Practice Placement Educator of consultation(s) or clinic(s).
- Reflective discussion between you and the Practice Placement Educator.
- Examination of patient records and other documentation.

Reflection Log:

- Reflection logs from previous weeks discussed: Yes  No   
If no, why not? \_\_\_\_\_
- Did the student initiate use of the reflection logs this week Yes  No   
- Please comment if indicated: \_\_\_\_\_

Attendance:

- Was the student absent during this week?  
Yes  No  No. of days \_\_\_\_\_

CRITERIA	YES/NO/ NOT ASSESSED	Provide Evidence <i>as appropriate</i> (student completes, educator reviews)
<b>KNOWLEDGE &amp; PRACTICE (KP)</b>		
<b>1. Information Collection</b>		
a) Demonstrates ability to <u>independently</u> collect accurate information from: <ul style="list-style-type: none"> <li>• medical notes</li> <li>• nursing notes</li> <li>• bed end charts</li> <li>• patients</li> <li>• laboratory Results</li> <li>• nursing staff/team members</li> <li>• wider sources e.g. old medical notes, computer databases, literature.</li> </ul>		
b) Demonstrates ability to adapt different methods of obtaining dietary information to suit a patient's needs/abilities/circumstances.		
c) Shows ability to <u>independently</u> critically analyse the impact of data collected in 1a on nutritional assessment, including separating relevant and non-relevant information.		
d) Shows ability to <u>independently</u> recognise where data are insufficient to allow for an accurate overview of the patient's status, i.e. the need for further relevant investigations/tests.		
e) Demonstrates ability to record personal and psychosocial information, and <u>independently</u> evaluate their effect on nutritional status (e.g. recent bereavement).		
<b>2. Nutritional Assessment</b>		<b>Always Provide Evidence/Comments</b>
a) Is able to <u>independently</u> obtain and record an accurate 24-hour recall of diet for inpatients/outpatients.		

b) Demonstrates an ability to <u>independently</u> complete an accurate diet history (from home) for a patient including: food groups, portion sizes, meal frequency, variety of food consumed, cooking methods, religious /cultural influences.		
c) Demonstrates an ability to <u>independently</u> analyse this information, in terms of energy/protein and micronutrient content (e.g. Ca/Fe). This may be with <u>or</u> without food composition tables and computer software packages.		
d) Demonstrates ability to <u>independently</u> record and analyse fluid balance information.		
e) Shows knowledge of nutritional composition of a wide range of oral nutritional supplements, and enteral feeds.		
f) Is able to <u>independently</u> calculate energy, protein and fluid requirements for increasingly complex patients using appropriate equations/methodology.		
g) Shows an understanding of the relationship between relevant biochemical tests and diet.		
h) Demonstrates knowledge of common medical conditions in this area of rotation, and basic knowledge of appropriate nutrition requirements for patients with these conditions		
<b>3. Nutritional Care Planning</b>		<b>Always Provide Evidence/Comments</b>
a) Shows <u>independent</u> ability to plan a dietetic intervention in line with best practice for a patient, while considering: <ul style="list-style-type: none"> <li>• diagnosis</li> <li>• food likes/dislikes</li> <li>• personal &amp; cultural beliefs, if applicable</li> <li>• catering limitations (inpatients)</li> <li>• finances, cooking/shopping facilities (outpatients/planning for home)</li> <li>• work/family commitments and key life events (outpatients/planning for home)</li> </ul>		

b) Shows <u>independent</u> ability to draft a meal plan and arrange for suitable snacks/extras for a patient while considering available menus.		
c) Shows <u>independent</u> ability to formulate basic enteral feeding regimens, based on identified targets.		
d) Shows basic knowledge of ability to use nutritional requirements to select appropriate PN formulation, using PN product information. e) Demonstrates recognition of the need for, and <u>independent</u> ability to, alter nutrition care plans for oral/enteral/parenteral nutrition as necessary (i.e. monitor/problem solve).		
f) Shows ability to prioritise essential versus non-essential goals/tasks.		
<b>4. Anthropometry</b>		<b>Provide Evidence as appropriate</b>
a) Demonstrates <u>proficiency</u> in collecting and interpreting anthropometric measures including: <ul style="list-style-type: none"> <li>• weight</li> <li>• weight history</li> <li>• height/ulna length/knee height</li> <li>• BMI</li> <li>• waist circumference</li> <li>• growth charts (paediatrics)</li> </ul>		
b) Demonstrates awareness of nutrition screening tools that are available and commonly used and the ability to use them appropriately.		
<b>5. Student Dietitian Practice</b>		<b>Always Provide Evidence/Comments</b>
a) Shows ability to justify interventions based on evidence based practice/best practice/local policy, including adaptation in order to achieve practical goals.		
b) Shows ability to document in dietetic records, in line with standard policies and procedures.		
<b>PROFESSIONALISM (P)</b>		<b>Provide Evidence as appropriate</b>
<b>1. Personal Conduct</b>		
a) Is reliable.		
b) Shows awareness of own limitations for this stage of training and seeks help appropriately.		
c) Always maintains patient confidentiality and behaves in such a manner that assures the patient of such confidentiality.		

d)	Is punctual throughout the daily course of work.		
e)	Is able to work effectively to complete required workload within recommended time frames.		
f)	Is able to reflect insightfully on practice and self-evaluate skills, knowledge and practice to plan strategies for development of practice and keep up to date (includes reflection log).		
g)	Demonstrates interest/motivation in their work		
h)	Adheres to the dress code as per local policy.		
<b>COMMUNICATION (C)</b>			<b>Always Provide Evidence/Comments</b>
a)	Shows an independent ability to liaise with ward staff/team members as appropriate.		
b)	Demonstrates ability to explain dietary interventions for increasingly complex cases in a clear manner that is technically and grammatically correct, at a level appropriate for staff member/patient.		
c)	Demonstrates an <u>independent</u> ability to evaluate and adapt communication techniques and resources or develop new resources to suit the patient/group.		
d)	Shows an <u>independent</u> ability to negotiate with the patient/group/team to agree appropriate identified goals.		
e)	Shows an <u>independent</u> ability to adapt an intervention or nutritional care plan based on a patient's attitude/response/non-verbal cues (including readiness to change)		
f)	Shows ability to show appropriate sensitivity towards patient's condition.		
g)	Demonstrates ability to apply some basic behaviour change skills in appropriate situations.		
h)	Shows an <u>independent</u> ability to evaluate the effectiveness of an intervention, and is able to re-negotiate goals as appropriate.		
i)	Demonstrates ability to participate in presentation of a case and/or journal club to an audience of dietitians.		

j) Demonstrates an <u>independent</u> ability to prepare and deliver appropriately targeted group advice.		
<b>TEAM WORKING (TW)</b>		<b><i>Always Provide Evidence/Comments</i></b>
a) Demonstrates an <u>independent</u> ability to work as a team member within the dietetic department.		
b) Demonstrates appreciation of the role of the dietitian within a team and can use the contribution of other parties to aid service delivery.		
<b>SERVICE DELIVERY (SD)</b>		<b><i>Always Provide Evidence/Comments</i></b>
<b><i>Best Evidence Based Practice</i></b>		
a) Reviews research and information from appropriate sources that is relevant to disease states/conditions that arise.		
b) Shows appreciation of how research and other information can inform practice		

**Additional Comments:**

***Signatures***

**Practice Placement Educator:**

**Date:**

**Student:**

**Date:**



## **Appendix 4: Literature review key search terms**

## Key Search Terms

Clinical educator	Clinical education	Collaborative learning
Practice educator	Clinical placement	Cooperative learning
Clinical preceptor	Fieldwork	Peer learning
Allied health professional	Practice placement education	Peer-assisted learning
Nursing	Practice-based learning	2:1 model
Medicine	Clinical supervision model	3:1 model
Dietetics		Group supervision
Physiotherapy		
Physical Therapy		
Occupational Therapy		
Speech and Language Therapy		
Social Work		
Podiatry		

## **Appendix 5: Letter of ethical approval**



Dámh na nEolaíochtaí Sláinte,  
Foirgneamh na Ceimice  
Colaiste na Tríonóide,  
Baile Átha Cliath 2, Éire.

Faculty of Health Sciences,  
Chemistry Building,  
Trinity College,  
Dublin 2, Ireland.  
T:- +353 (0)1 8964255

Ann-Marie Lynam  
Department of Clinical Medicine,  
Trinity Centre for Health Sciences,  
St James's Hospital,  
Dublin 8.

21 February 2013

Study: Use and perception of a Paired Placement (2:1) Peer Education Model In Practice Placement Education In Dietetics In Ireland

Dear Applicant(s),

Further to a meeting of the Faculty of Health Sciences Ethics Committee held in October 2012, we are pleased to inform you that the above project (as amended) has been approved without further audit.

Yours sincerely,

*pp. Caroline Rooney*

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Dr. Ruth Pilkington  
Chairperson  
Faculty Research Ethics Committee

Supervisor: Dr Deirdre Connolly

## **Appendix 6: Participant information leaflets**

## **Participant information leaflet (Practice Educator)**

**1. Title of study:** The use and perception of a paired placement (2:1) peer education model in practice placement education in dietetics in Ireland.

**2. Introduction:** The aim of the study is to explore the perceptions of using a paired placement (2:1) peer education model within the practical element of the BSc Human Nutrition and Dietetics Programme (TCD/DIT). Students' perceptions of engagement in peer learning will be measured. The association between these perceptions and achievement of competency based learning outcomes, which are used to assess the students, will also be explored.

### **3. Procedures:**

If you agree to consent in this study, Ms Maria Bowles will act as a gatekeeper and will give you a code number, and retain a record of your details, but no-one else (including the Principal Investigator, Ann-Marie Lynam) will have access to this information, thus **all information collected will be coded and anonymised.**

You will be requested to complete a questionnaire once over the study period of 3 years. This questionnaire should take approximately 20 minutes to complete.

You may also be requested to participate in 1 interview over the 3 year period. If you agree to be interviewed, the interview will be conducted by an independent person, who is not involved in the assessment of these students during their BSc programme. This interviewer will be trained in qualitative interviewing beforehand. This information will then be transcribed and any identifying names or comments omitted. The anonymous transcripts will then be analysed by the Principal Investigator.

Should you be asked to participate in an interview, this will take place at your convenience either in Trinity Centre for Health Sciences at St James's Hospital, Dublin Institute of Technology at Kevin Street, or via telephone. Afterwards you will be given a transcript of the interview, and you may delete any wording that you may perceive may identify you, or that misrepresents your opinion.

You will be assigned a confidential code name, which will be used throughout the study. Only the gatekeeper and independent interviewer will have access to your actual name.

Students are also going to be approached and asked to complete a similar questionnaire. When the questionnaire results are analysed, the code numbers of those with high, medium and low degrees of satisfaction with concepts such as Peer Learning will be identified and invited to participate in an interview. The Principal Investigator will be unaware of the names of those being interviewed.

**The gatekeeper will subsequently match the names of those students interviewed, with their practice educators, from the college placement lists** (all participants will be asked not to identify any practice educators or students by name in questionnaires or interviews). **Any of those matched** practice educators that have agreed to participate in this study, **will be approached and invited to participate in an interview** by the independent interviewer. However, the independent interviewer will not know which practice educator trained which

student, which will remove the possibility of the interviewer revealing any details of the students' interview/questionnaire responses to the practice educator.

**4. Benefits:**

Participation will aid reflection on the facilitation of the 2:1 peer education model used during the practice placements B and C. This may include the facilitation of peer learning and reflective practice problem based learning. This may prompt planning and preparation for prospective practice placement education, and reflection on previous experiences.

**5. Risks:** There are no risks involved. You may decline from participation or withdraw from the study at any point. Non-participation will not have any adverse outcomes.

**6. Exclusion from participation:**

You cannot participate in this study if you did not supervise students using the paired placement (2:1) peer education model during the practice placement education component of the BSc in Human Nutrition and Dietetics (TCD/DIT).

**7. Confidentiality:**

Your identity will remain confidential. Your name will not be published and will not be disclosed to anyone outside the study group.

**8. Compensation:**

This study is covered by standard institutional indemnity insurance. Nothing in this document restricts or curtails your rights.

**9. Voluntary Participation:** If you decide to volunteer to participate in this study you may withdraw at any time.

**10. Stopping the study:** You understand that the investigators may withdraw your participation in the study at any time without your consent.

**11. Permission:** This research has Research Ethics Committee approval from the Trinity College Dublin Faculty of Health Science Ethics Committee

**12. Further information:** You can get more information or answers to your questions about the study, your participation in the study and your rights from [mariabowles@eircom.net](mailto:mariabowles@eircom.net)

## **Participant information leaflet (Student)**

**1. Title of study:** The use and perception of a paired placement (2:1) peer education model in practice placement education in dietetics in Ireland.

**2. Introduction:** The aim of the study is to explore the perceptions of using a paired placement (2:1) peer education model within the practical element of the BSc Human Nutrition and Dietetics Programme (TCD/DIT). Students' perceptions of engagement in peer learning will be measured. The association between these perceptions and achievement of competency based learning outcomes, which are used to assess the students, will also be explored.

### **3. Procedures:**

If you consent to participate in this study, the executive officer in DIT will act as a gatekeeper and will give you a code number, and retain a record of your details, but no-one else (including the Principal Investigator, Ann-Marie Lynam) will have access to this information, thus **all information collected will be coded and anonymised.**

You will be asked to complete a questionnaire up to three times over the next 3 years. The questionnaire will take approximately 20 minutes to complete.

When the questionnaire results are analysed, the code numbers of those with high, medium and low degrees of satisfaction with concepts such as Peer Learning will be identified. **If the gatekeeper matches one of those code numbers with your name, you will be invited to participate in an interview.** The Principal Investigator will be unaware of the names of those being interviewed.

If you agree to be interviewed, **the interview will be conducted by an independent person,** who is not involved in the assessment of these students during their BSc programme. This interviewer will be trained in qualitative interviewing beforehand. This information will then be transcribed and any identifying names or comments omitted. The anonymous transcripts will then be analysed by the Principal Investigator.

Should you be asked to participate in an interview, this will take place at your convenience either in Trinity Centre for Health Sciences at St James's Hospital, Dublin Institute of Technology at Kevin Street, or via telephone. Afterwards you will be given a transcript of the interview, and you may delete any wording that you may perceive may identify you, or that misrepresents your opinion

You will be assigned a confidential code name, which will be used throughout the study. Only the gatekeeper and independent interviewer will have access to your actual identification and personal information.

**The gatekeeper will subsequently match the names of those students interviewed, with their practice educators, from the college placement lists** (all participants will be asked not to identify any practice educators or students by name in questionnaires or interviews). **Any of those matched** practice educators that have agreed to participate in this study, **will be approached and invited to participate in an interview** by the independent interviewer. However, the independent interviewer will not know which practice educator trained which student, which will remove the possibility of the interviewer revealing any details of the students' interview/questionnaire responses to the practice educator.



**4. Benefits:**

Participation may aid prospective or retrospective contemplation on the central tenets of the 2:1 peer education model used during the practice placements B and C. These aspects may include peer learning and reflective practice. This may prompt planning and preparation for prospective practice placement education, and reflection on previous experiences.

**5. Risks:** There are no risks involved. You may decline from participation or withdraw from the study at any point. This research is not in any way linked to student assessment forms, and non-participation will not have any adverse outcomes.

**6. Exclusion from participation:**

You cannot participate in this study if you did not participate in the paired placement (2:1) peer education model during the practice placement education component of the BSc in Human Nutrition and Dietetics (TCD/DIT).

You cannot participate in this study if you are less than 18 years old.

**7. Confidentiality:**

Your identity will remain confidential. Your name will not be published and will not be disclosed to anyone outside the study group.

**8. Compensation:**

This study is covered by standard institutional indemnity insurance. Nothing in this document restricts or curtails your rights.

**9. Voluntary Participation:** If you decide to volunteer to participate in this study you may withdraw at any time.

**10. Stopping the study:** You understand that the investigators may withdraw your participation in the study at any time without your consent.

**11. Permission:** This research has Research Ethics Committee approval from the Trinity College Dublin Faculty of Health Science Ethics Committee

**12. Further information:** You can get more information or answers to your questions about the study, your participation in the study and your rights from Ann-Marie Lynam (annmarie.lynam@tcd.ie) or Clare Corish (clare.corish@dit.ie)

## **Appendix 7: Student and practice educator questionnaires**

## Questionnaire for Students pre-Practice Placement B

Code number: \_\_\_\_\_

Please tick this box to confirm that you are willing to be identified by the gatekeeper only, so that we can analyse corresponding questionnaires anonymously, or check your availability for interview at a later date

Please give a number representing your agreement with each statement according to this scale:

Likert Rating Scale				
1 Strongly Agree	2 Agree	3 Neutral	4 Disagree	5 Strongly Disagree

- 1) I have a good understanding of what collaborative learning is: \_\_\_\_\_
- 2) I have a good understanding of what peer observation is: \_\_\_\_\_
- 3) I have a good understanding of what peer feedback is: \_\_\_\_\_
  
- 4) Engaging in collaborative learning will provide opportunities for me to learn during placement \_\_\_\_\_
- 5) Engaging in peer observation will provide opportunities for me to learn during placement \_\_\_\_\_
- 6) Engaging in peer feedback will provide opportunities for me to learn during placement \_\_\_\_\_
  
- 7) I would prefer not to engage in collaborative learning during placement \_\_\_\_\_
- 8) I would prefer not to engage in peer observation during placement \_\_\_\_\_
- 9) I would prefer not to engage in peer feedback during placement \_\_\_\_\_

### Definitions:

**Collaborative Learning:** indirect teaching in which the instructor identifies the task and organises the students to work out a solution, independently of the educator

**Peer Observation:** one student observing the other student, and sharing those observations, e.g. scripting

**Peer Feedback:** formative feedback from one student to another (not assessment)

**Collaborative Learning:** indirect teaching in which the instructor states the problem and organises the students to work it out together, independently of the educator

Likert Rating Scale				
1 Strongly Agree	2 Agree	3 Neutral	4 Disagree	5 Strongly Disagree

**Collaborative Learning will help me become competent in:**

***Learning Outcome (LO) - Knowledge & Practice (Information Collection)***

- 1) collecting accurate information from medical/nursing/bed-end charts \_\_\_\_
- 2) collecting accurate information from patients/MDT staff \_\_\_\_
- 3) adapting a different method of obtaining dietary information to suit a particular patient/group \_\_\_\_
- 4) distinguishing between information that is relevant and non-relevant \_\_\_\_
- 5) recognising where data are insufficient to allow for an accurate overview of the patient's status, i.e. the need for further relevant investigations/tests \_\_\_\_
- 6) evaluate the effect of social and psychosocial information on nutritional status of patient, e.g. a recent bereavement \_\_\_\_

***LO - Knowledge & Practice (Nutrition Assessment)***

- 7) obtaining and recording an accurate 24-hr recall/diet history for inpatients/outpatients \_\_\_\_
- 8) analysing a 24-hour recall or diet history in terms of energy/protein and micronutrient content (e.g. Ca/Fe) \_\_\_\_
- 9) recording and analysing fluid balance information \_\_\_\_
- 10) knowledge of nutrition composition of oral nutritional supplements and enteral feeds \_\_\_\_
- 11) calculating energy, protein and fluid requirements for increasingly complex patients using appropriate equations/methodology \_\_\_\_
- 12) understanding the relationship between relevant biochemical tests and diet \_\_\_\_
- 13) knowledge of common medical conditions \_\_\_\_
- 14) knowledge of nutritional requirements for patients with these conditions \_\_\_\_

***LO - Knowledge & Practice (Nutrition Care Planning)***

- 15) making a nutrition diagnosis \_\_\_\_
- 16) planning a dietetic intervention \_\_\_\_
- 17) implementing a dietetic intervention \_\_\_\_
- 18) undertaking a presentation/group work activity/project work \_\_\_\_
- 19) formulating basic enteral feeding regimens \_\_\_\_
- 20) selecting appropriate parenteral nutrition formulations \_\_\_\_
- 21) recognising the need to monitor/alter nutrition plans for oral/enteral/parenteral nutrition \_\_\_\_
- 22) prioritising essential versus non-essential goals/tasks \_\_\_\_

***L.O. - Knowledge & Practice (Anthropometry)***

- 23) collecting anthropometric data \_\_\_\_
- 24) interpreting anthropometric data and understanding the relevance to the patient's nutritional status \_\_\_\_
- 25) using nutritional screening tools appropriately \_\_\_\_

***LO - Knowledge & Practice (Student Dietitian Practice)***

- 26) justifying interventions based on evidence based practice or departmental policy \_\_\_\_
- 27) documenting in patient records in line with standard policies and procedures \_\_\_\_

**Collaborative Learning:** indirect teaching in which the instructor states the problem and organises the students to work it out together, independently of the educator

<i>Likert Rating Scale</i>				
<b>1</b> Strongly Agree	<b>2</b> Agree	<b>3</b> Neutral	<b>4</b> Disagree	<b>5</b> Strongly Disagree

**Collaborative Learning will help me become competent in:**

***LO - Professionalism***

- 28) being reliable \_\_\_
- 29) being aware of my own limitations as appropriate for the stage of training \_\_\_
- 30) seeking help appropriately \_\_\_
- 31) maintaining patient confidentiality \_\_\_
- 32) being punctual throughout the daily course of work \_\_\_
- 33) completing the required workload within recommended timeframe \_\_\_
- 34) assessing my performance realistically and accurately \_\_\_
- 35) reflecting on my ability to meet the competences required \_\_\_
- 36) demonstrating interest motivation in my work \_\_\_
- 37) adhering to the dress code as per local policy \_\_\_
- 38) liaising with MDT members as appropriate \_\_\_

***LO - Communication***

- 39) explaining dietary interventions for increasingly complex cases clearly & pitched appropriately \_\_\_
- 40) evaluating and adapting communication techniques and/or resources to suit patient/audience \_\_\_
- 41) negotiating appropriate identified goals \_\_\_
- 42) adapting an intervention based on patient's attitude/response/non-verbal cues \_\_\_
- 43) showing sensitivity towards a patient's medical condition \_\_\_
- 44) applying some basic behavioural change skills in appropriate situations \_\_\_
- 45) evaluating the effectiveness of an intervention, including re-negotiation of goals as appropriate \_\_\_
- 46) preparing and delivering presentation of patient case or journal article \_\_\_
- 47) preparing and delivering appropriately pitched group advice \_\_\_

***LO – Team Working***

- 48) working as a team member within the dietetic department \_\_\_
- 49) appreciating the role of the dietitian within a team and using the contribution of other members to aid service delivery \_\_\_

***LO – Service Delivery***

- 50) reviewing research from appropriate sources that is relevant to conditions that arise \_\_\_
- 51) appreciating how research and other information can inform practice \_\_\_

***Other Learning Opportunities***

- 52) listening actively \_\_\_
- 53) demonstrating empathy \_\_\_
- 54) developing my clinical reasoning skills \_\_\_
- 55) developing my confidence during practice placement education \_\_\_
- 56) rehearsing during practice education \_\_\_
- 57) engaging in reflective practice \_\_\_

**Peer Observation:** one student observing the other student, and sharing those observations, e.g. scripting

<i>Likert Rating Scale</i>				
<b>1</b> Strongly Agree	<b>2</b> Agree	<b>3</b> Neutral	<b>4</b> Disagree	<b>5</b> Strongly Disagree

**Peer Observation will help me become competent in:**

***Learning Outcome (LO) - Knowledge & Practice (Information Collection)***

- 1) collecting accurate information from medical/nursing/bed-end charts \_\_\_\_
- 2) collecting accurate information from patients/MDT staff \_\_\_\_
- 3) adapting a different method of obtaining dietary information to suit a particular patient/group \_\_\_\_
- 4) distinguishing between information that is relevant and non-relevant \_\_\_\_
- 5) recognising where data are insufficient to allow for an accurate overview of the patient's status, i.e. the need for further relevant investigations/tests \_\_\_\_
- 6) evaluate the effect of social and psychosocial information on nutritional status of patient, e.g. a recent bereavement \_\_\_\_

***LO - Knowledge & Practice (Nutrition Assessment)***

- 7) obtaining and recording an accurate 24-hr recall/diet history for inpatients/outpatients \_\_\_\_
- 8) analysing a 24-hour recall or diet history in terms of energy/protein and micronutrient content (e.g. Ca/Fe) \_\_\_\_
- 9) recording and analysing fluid balance information \_\_\_\_
- 10) knowledge of nutrition composition of oral nutritional supplements and enteral feeds \_\_\_\_
- 11) calculating energy, protein and fluid requirements for increasingly complex patients using appropriate equations/methodology \_\_\_\_
- 12) understanding the relationship between relevant biochemical tests and diet \_\_\_\_
- 13) knowledge of common medical conditions \_\_\_\_
- 14) knowledge of nutritional requirements for patients with these conditions \_\_\_\_

***LO - Knowledge & Practice (Nutrition Care Planning)***

- 15) making a nutrition diagnosis \_\_\_\_
- 16) planning a dietetic intervention \_\_\_\_
- 17) implementing a dietetic intervention \_\_\_\_
- 18) undertaking a presentation/group work activity/project work \_\_\_\_
- 19) formulating basic enteral feeding regimens \_\_\_\_
- 20) selecting appropriate parenteral nutrition formulations \_\_\_\_
- 21) recognising the need to monitor/alter nutrition plans for oral/enteral/parenteral nutrition \_\_\_\_
- 22) prioritising essential versus non-essential goals/tasks \_\_\_\_

***L.O. - Knowledge & Practice (Anthropometry)***

- 23) collecting anthropometric data \_\_\_\_
- 24) interpreting anthropometric data and understanding the relevance to the patient's nutritional status \_\_\_\_
- 25) using nutritional screening tools appropriately \_\_\_\_

***LO - Knowledge & Practice (Student Dietitian Practice)***

- 26) justifying interventions based on evidence based practice or departmental policy \_\_\_\_
- 27) documenting in patient records in line with standard policies and procedures \_\_\_\_

**Peer Observation:** one student observing the other student, and sharing those observations, e.g. scripting

<i>Likert Rating Scale</i>				
<b>1</b> Strongly Agree	<b>2</b> Agree	<b>3</b> Neutral	<b>4</b> Disagree	<b>5</b> Strongly Disagree

**Peer Observation will help me become competent in:**

***LO - Professionalism***

- 28) being reliable \_\_\_
- 29) being aware of my own limitations as appropriate for the stage of training \_\_\_
- 30) seeking help appropriately \_\_\_
- 31) maintaining patient confidentiality \_\_\_
- 32) being punctual throughout the daily course of work \_\_\_
- 33) completing the required workload within recommended timeframe \_\_\_
- 34) assessing my performance realistically and accurately \_\_\_
- 35) reflecting on my ability to meet the competences required \_\_\_
- 36) demonstrating interest motivation in my work \_\_\_
- 37) adhering to the dress code as per local policy \_\_\_
- 38) liaising with MDT members as appropriate \_\_\_

***LO - Communication***

- 39) explaining dietary interventions for increasingly complex cases clearly & pitched appropriately \_\_\_
- 40) evaluating and adapting communication techniques and/or resources to suit patient/audience \_\_\_
- 41) negotiating appropriate identified goals \_\_\_
- 42) adapting an intervention based on patient's attitude/response/non-verbal cues \_\_\_
- 43) showing sensitivity towards a patient's medical condition \_\_\_
- 44) applying some basic behavioural change skills in appropriate situations \_\_\_
- 45) evaluating the effectiveness of an intervention, including re-negotiation of goals as appropriate \_\_\_
- 46) preparing and delivering presentation of patient case or journal article \_\_\_
- 47) preparing and delivering appropriately pitched group advice \_\_\_

***LO – Team Working***

- 48) working as a team member within the dietetic department \_\_\_
- 49) appreciating the role of the dietitian within a team and using the contribution of other members to aid service delivery \_\_\_

***LO – Service Delivery***

- 50) reviewing research from appropriate sources that is relevant to conditions that arise \_\_\_
- 51) appreciating how research and other information can inform practice \_\_\_

***Other Learning Opportunities***

- 52) listening actively \_\_\_
- 53) demonstrating empathy \_\_\_
- 54) developing my clinical reasoning skills \_\_\_
- 55) developing my confidence during practice placement education \_\_\_
- 56) rehearsing during practice education \_\_\_
- 57) engaging in reflective practice \_\_\_

**Peer Feedback:** formative feedback from one student to another (not assessment)

<i>Likert Rating Scale</i>				
<b>1</b> Strongly Agree	<b>2</b> Agree	<b>3</b> Neutral	<b>4</b> Disagree	<b>5</b> Strongly Disagree

**Peer Feedback will help me become competent in:**

***Learning Outcome (LO) - Knowledge & Practice (Information Collection)***

- 1) collecting accurate information from medical/nursing/bed-end charts \_\_\_\_
- 2) collecting accurate information from patients/MDT staff \_\_\_\_
- 3) adapting a different method of obtaining dietary information to suit a particular patient/group \_\_\_\_
- 4) distinguishing between information that is relevant and non-relevant \_\_\_\_
- 5) recognising where data are insufficient to allow for an accurate overview of the patient's status, i.e. the need for further relevant investigations/tests \_\_\_\_
- 6) evaluate the effect of social and psychosocial information on nutritional status of patient, e.g. a recent bereavement \_\_\_\_

***LO - Knowledge & Practice (Nutrition Assessment)***

- 7) obtaining and recording an accurate 24-hr recall/diet history for inpatients/outpatients \_\_\_\_
- 8) analysing a 24-hour recall or diet history in terms of energy/protein and micronutrient content (e.g. Ca/Fe) \_\_\_\_
- 9) recording and analysing fluid balance information \_\_\_\_
- 10) knowledge of nutrition composition of oral nutritional supplements and enteral feeds \_\_\_\_
- 11) calculating energy, protein and fluid requirements for increasingly complex patients using appropriate equations/methodology \_\_\_\_
- 12) understanding the relationship between relevant biochemical tests and diet \_\_\_\_
- 13) knowledge of common medical conditions \_\_\_\_
- 14) knowledge of nutritional requirements for patients with these conditions \_\_\_\_

***LO - Knowledge & Practice (Nutrition Care Planning)***

- 15) making a nutrition diagnosis \_\_\_\_
- 16) planning a dietetic intervention \_\_\_\_
- 17) implementing a dietetic intervention \_\_\_\_
- 18) undertaking a presentation/group work activity/project work \_\_\_\_
- 19) formulating basic enteral feeding regimens \_\_\_\_
- 20) selecting appropriate parenteral nutrition formulations \_\_\_\_
- 21) recognising the need to monitor/alter nutrition plans for oral/enteral/parenteral nutrition \_\_\_\_
- 22) prioritising essential versus non-essential goals/tasks \_\_\_\_

***L.O. - Knowledge & Practice (Anthropometry)***

- 23) collecting anthropometric data \_\_\_\_
- 24) interpreting anthropometric data and understanding the relevance to the patient's nutritional status \_\_\_\_
- 25) using nutritional screening tools appropriately \_\_\_\_

***LO - Knowledge & Practice (Student Dietitian Practice)***

- 26) justifying interventions based on evidence based practice or departmental policy \_\_\_\_
- 27) documenting in patient records in line with standard policies and procedures \_\_\_\_



**Peer Feedback:** formative feedback from one student to another (not assessment)

<i>Likert Rating Scale</i>				
<b>1</b> Strongly Agree	<b>2</b> Agree	<b>3</b> Neutral	<b>4</b> Disagree	<b>5</b> Strongly Disagree

**Peer Feedback will help me become competent in:**

***LO - Professionalism***

- 28) being reliable \_\_\_
- 29) being aware of my own limitations as appropriate for the stage of training \_\_\_
- 30) seeking help appropriately \_\_\_
- 31) maintaining patient confidentiality \_\_\_
- 32) being punctual throughout the daily course of work \_\_\_
- 33) completing the required workload within recommended timeframe \_\_\_
- 34) assessing my performance realistically and accurately \_\_\_
- 35) reflecting on my ability to meet the competences required \_\_\_
- 36) demonstrating interest motivation in my work \_\_\_
- 37) adhering to the dress code as per local policy \_\_\_
- 38) liaising with MDT members as appropriate \_\_\_

***LO - Communication***

- 39) explaining dietary interventions for increasingly complex cases clearly & pitched appropriately \_\_\_
- 40) evaluating and adapting communication techniques and/or resources to suit patient/audience \_\_\_
- 41) negotiating appropriate identified goals \_\_\_
- 42) adapting an intervention based on patient's attitude/response/non-verbal cues \_\_\_
- 43) showing sensitivity towards a patient's medical condition \_\_\_
- 44) applying some basic behavioural change skills in appropriate situations \_\_\_
- 45) evaluating the effectiveness of an intervention, including re-negotiation of goals as appropriate \_\_\_
- 46) preparing and delivering presentation of patient case or journal article \_\_\_
- 47) preparing and delivering appropriately pitched group advice \_\_\_

***LO – Team Working***

- 48) working as a team member within the dietetic department \_\_\_
- 49) appreciating the role of the dietitian within a team and using the contribution of other members to aid service delivery \_\_\_

***LO – Service Delivery***

- 50) reviewing research from appropriate sources that is relevant to conditions that arise \_\_\_
- 51) appreciating how research and other information can inform practice \_\_\_

***Other Learning Opportunities***

- 52) listening actively \_\_\_
- 53) demonstrating empathy \_\_\_
- 54) developing my clinical reasoning skills \_\_\_
- 55) developing my confidence during practice placement education \_\_\_
- 56) rehearsing during practice education \_\_\_
- 57) engaging in reflective practice \_\_\_

**In the following questions, the term ‘peer learning’ will represent an umbrella term incorporating collaborative learning, peer observation and peer feedback.**

58) To what extent will peer learning be most useful during the following periods of practice placement education:

Beginning:	Not at all <input type="checkbox"/>	A little <input type="checkbox"/>	A lot <input type="checkbox"/>
Midway:	Not at all <input type="checkbox"/>	A little <input type="checkbox"/>	A lot <input type="checkbox"/>
End:	Not at all <input type="checkbox"/>	A little <input type="checkbox"/>	A lot <input type="checkbox"/>

59) Peer feedback will only work well if students are willing to participate:

Very much agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neither agree nor disagree <input type="checkbox"/>	Disagree <input type="checkbox"/>	Very much disagree <input type="checkbox"/>
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60) The following promotes willingness from students: (please give examples of why students would want to participate in the peer learning process):

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61) I was well prepared in college for engaging in peer learning on placement:

Very much agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neither agree nor disagree <input type="checkbox"/>	Disagree <input type="checkbox"/>	Very much disagree <input type="checkbox"/>
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62) What prepared you most for engaging in peer learning?

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63) What else would have been useful for preparing you to engage in peer learning?

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64) Have you any fears or concerns about participating in peer (2:1) learning based placement?

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**Thank you, your participation is much appreciated.**

## Questionnaire for Students post-Practice Placement B

Code number: \_\_\_\_\_

Please tick this box to confirm that you are willing to be identified by the gatekeeper only, so that we can analyse corresponding questionnaires anonymously, or check your availability for interview at a later date

*Please give a number representing your agreement with each statement according to this scale:*

<i>Likert Rating Scale</i>				
<b>1</b> Strongly Agree	<b>2</b> Agree	<b>3</b> Neutral	<b>4</b> Disagree	<b>5</b> Strongly Disagree

- 1) I have a good understanding of what collaborative learning is: \_\_\_\_
- 2) I have a good understanding of what peer observation is: \_\_\_\_
- 3) I have a good understanding of what peer feedback is: \_\_\_\_
  
- 4) Engaging in collaborative learning provided opportunities for me to learn during placement \_\_\_\_
- 5) Engaging in peer observation provided opportunities for me to learn during placement \_\_\_\_
- 6) Engaging in peer feedback provided opportunities for me to learn during placement \_\_\_\_
  
- 7) I would prefer not to have engaged in collaborative learning during placement \_\_\_\_
- 8) I would prefer not to have engaged in peer observation during placement \_\_\_\_
- 9) I would prefer not to have engaged in peer feedback during placement \_\_\_\_

### **Definitions:**

**Collaborative Learning:** indirect teaching in which the instructor identifies the task and organises the students to work out a solution, independently of the educator

**Peer Observation:** one student observing the other student, and sharing those observations, e.g. scripting

**Peer Feedback:** formative feedback from one student to another (not assessment)

**Collaborative Learning:** indirect teaching in which the instructor states the problem and organises the students to work it out together, independently of the educator

Likert Rating Scale				
1 Strongly Agree	2 Agree	3 Neutral	4 Disagree	5 Strongly Disagree

**Collaborative Learning helped me become competent in:**

***Learning Outcome (LO) - Knowledge & Practice (Information Collection)***

- 1) collecting accurate information from medical/nursing/bed-end charts \_\_\_\_
- 2) collecting accurate information from patients/MDT staff \_\_\_\_
- 3) adapting a different method of obtaining dietary information to suit a particular patient/group \_\_\_\_
- 4) distinguishing between information that is relevant and non-relevant \_\_\_\_
- 5) recognising where data are insufficient to allow for an accurate overview of the patient's status, i.e. the need for further relevant investigations/tests \_\_\_\_
- 6) evaluate the effect of social and psychosocial information on nutritional status of patient, e.g. a recent bereavement \_\_\_\_

***LO - Knowledge & Practice (Nutrition Assessment)***

- 7) obtaining and recording an accurate 24-hr recall/diet history for inpatients/outpatients \_\_\_\_
- 8) analysing a 24-hour recall or diet history in terms of energy/protein and micronutrient content (e.g. Ca/Fe) \_\_\_\_
- 9) recording and analysing fluid balance information \_\_\_\_
- 10) knowledge of nutrition composition of oral nutritional supplements and enteral feeds \_\_\_\_
- 11) calculating energy, protein and fluid requirements for increasingly complex patients using appropriate equations/methodology \_\_\_\_
- 12) understanding the relationship between relevant biochemical tests and diet \_\_\_\_
- 13) knowledge of common medical conditions \_\_\_\_
- 14) knowledge of nutritional requirements for patients with these conditions \_\_\_\_

***LO - Knowledge & Practice (Nutrition Care Planning)***

- 15) making a nutrition diagnosis \_\_\_\_
- 16) planning a dietetic intervention \_\_\_\_
- 17) implementing a dietetic intervention \_\_\_\_
- 18) undertaking a presentation/group work activity/project work \_\_\_\_
- 19) formulating basic enteral feeding regimens \_\_\_\_
- 20) selecting appropriate parenteral nutrition formulations \_\_\_\_
- 21) recognising the need to monitor/alter nutrition plans for oral/enteral/parenteral nutrition \_\_\_\_
- 22) prioritising essential versus non-essential goals/tasks \_\_\_\_

***L.O. - Knowledge & Practice (Anthropometry)***

- 23) collecting anthropometric data \_\_\_\_
- 24) interpreting anthropometric data and understanding the relevance to the patient's nutritional status \_\_\_\_
- 25) using nutritional screening tools appropriately \_\_\_\_

***LO - Knowledge & Practice (Student Dietitian Practice)***

- 26) justifying interventions based on evidence based practice or departmental policy \_\_\_\_
- 27) documenting in patient records in line with standard policies and procedures \_\_\_\_

**Collaborative Learning:** indirect teaching in which the instructor states the problem and organises the students to work it out together, independently of the educator

<i>Likert Rating Scale</i>				
<b>1</b> Strongly Agree	<b>2</b> Agree	<b>3</b> Neutral	<b>4</b> Disagree	<b>5</b> Strongly Disagree

**Collaborative Learning helped me become competent in:**

***LO - Professionalism***

- 28) being reliable \_\_\_
- 29) being aware of my own limitations as appropriate for the stage of training \_\_\_
- 30) seeking help appropriately \_\_\_
- 31) maintaining patient confidentiality \_\_\_
- 32) being punctual throughout the daily course of work \_\_\_
- 33) completing the required workload within recommended timeframe \_\_\_
- 34) assessing my performance realistically and accurately \_\_\_
- 35) reflecting on my ability to meet the competences required \_\_\_
- 36) demonstrating interest motivation in my work \_\_\_
- 37) adhering to the dress code as per local policy \_\_\_
- 38) liaising with MDT members as appropriate \_\_\_

***LO - Communication***

- 39) explaining dietary interventions for increasingly complex cases clearly & pitched appropriately \_\_\_
- 40) evaluating and adapting communication techniques and/or resources to suit patient/audience \_\_\_
- 41) negotiating appropriate identified goals \_\_\_
- 42) adapting an intervention based on patient's attitude/response/non-verbal cues \_\_\_
- 43) showing sensitivity towards a patient's medical condition \_\_\_
- 44) applying some basic behavioural change skills in appropriate situations \_\_\_
- 45) evaluating the effectiveness of an intervention, including re-negotiation of goals as appropriate \_\_\_
- 46) preparing and delivering presentation of patient case or journal article \_\_\_
- 47) preparing and delivering appropriately pitched group advice \_\_\_

***LO – Team Working***

- 48) working as a team member within the dietetic department \_\_\_
- 49) appreciating the role of the dietitian within a team and using the contribution of other members to aid service delivery \_\_\_

***LO – Service Delivery***

- 50) reviewing research from appropriate sources that is relevant to conditions that arise \_\_\_
- 51) appreciating how research and other information can inform practice \_\_\_

***Other Learning Opportunities***

- 52) listening actively \_\_\_
- 53) demonstrating empathy \_\_\_
- 54) developing my clinical reasoning skills \_\_\_
- 55) developing my confidence during practice placement education \_\_\_
- 56) rehearsing during practice education \_\_\_
- 57) engaging in reflective practice \_\_\_

**Peer Observation:** one student observing the other student, and sharing those observations, e.g. scripting

<i>Likert Rating Scale</i>				
<b>1</b> Strongly Agree	<b>2</b> Agree	<b>3</b> Neutral	<b>4</b> Disagree	<b>5</b> Strongly Disagree

**Peer Observation helped me become competent in:**

***Learning Outcome (LO) - Knowledge & Practice (Information Collection)***

- 1) collecting accurate information from medical/nursing/bed-end charts \_\_\_\_
- 2) collecting accurate information from patients/MDT staff \_\_\_\_
- 3) adapting a different method of obtaining dietary information to suit a particular patient/group \_\_\_\_
- 4) distinguishing between information that is relevant and non-relevant \_\_\_\_
- 5) recognising where data are insufficient to allow for an accurate overview of the patient's status, i.e. the need for further relevant investigations/tests \_\_\_\_
- 6) evaluate the effect of social and psychosocial information on nutritional status of patient, e.g. a recent bereavement \_\_\_\_

***LO - Knowledge & Practice (Nutrition Assessment)***

- 7) obtaining and recording an accurate 24-hr recall/diet history for inpatients/outpatients \_\_\_\_
- 8) analysing a 24-hour recall or diet history in terms of energy/protein and micronutrient content (e.g. Ca/Fe) \_\_\_\_
- 9) recording and analysing fluid balance information \_\_\_\_
- 10) knowledge of nutrition composition of oral nutritional supplements and enteral feeds \_\_\_\_
- 11) calculating energy, protein and fluid requirements for increasingly complex patients using appropriate equations/methodology \_\_\_\_
- 12) understanding the relationship between relevant biochemical tests and diet \_\_\_\_
- 13) knowledge of common medical conditions \_\_\_\_
- 14) knowledge of nutritional requirements for patients with these conditions \_\_\_\_

***LO - Knowledge & Practice (Nutrition Care Planning)***

- 15) making a nutrition diagnosis \_\_\_\_
- 16) planning a dietetic intervention \_\_\_\_
- 17) implementing a dietetic intervention \_\_\_\_
- 18) undertaking a presentation/group work activity/project work \_\_\_\_
- 19) formulating basic enteral feeding regimens \_\_\_\_
- 20) selecting appropriate parenteral nutrition formulations \_\_\_\_
- 21) recognising the need to monitor/alter nutrition plans for oral/enteral/parenteral nutrition \_\_\_\_
- 22) prioritising essential versus non-essential goals/tasks \_\_\_\_

***L.O. - Knowledge & Practice (Anthropometry)***

- 23) collecting anthropometric data \_\_\_\_
- 24) interpreting anthropometric data and understanding the relevance to the patient's nutritional status \_\_\_\_
- 25) using nutritional screening tools appropriately \_\_\_\_

***LO - Knowledge & Practice (Student Dietitian Practice)***

- 26) justifying interventions based on evidence based practice or departmental policy \_\_\_\_
- 27) documenting in patient records in line with standard policies and procedures \_\_\_\_

**Peer Observation:** one student observing the other student, and sharing those observations, e.g. scripting

<i>Likert Rating Scale</i>				
<b>1</b> Strongly Agree	<b>2</b> Agree	<b>3</b> Neutral	<b>4</b> Disagree	<b>5</b> Strongly Disagree

**Peer Observation helped me become competent in:**

***LO - Professionalism***

- 28) being reliable \_\_\_
- 29) being aware of my own limitations as appropriate for the stage of training \_\_\_
- 30) seeking help appropriately \_\_\_
- 31) maintaining patient confidentiality \_\_\_
- 32) being punctual throughout the daily course of work \_\_\_
- 33) completing the required workload within recommended timeframe \_\_\_
- 34) assessing my performance realistically and accurately \_\_\_
- 35) reflecting on my ability to meet the competences required \_\_\_
- 36) demonstrating interest motivation in my work \_\_\_
- 37) adhering to the dress code as per local policy \_\_\_
- 38) liaising with MDT members as appropriate \_\_\_

***LO - Communication***

- 39) explaining dietary interventions for increasingly complex cases clearly & pitched appropriately \_\_\_
- 40) evaluating and adapting communication techniques and/or resources to suit patient/audience \_\_\_
- 41) negotiating appropriate identified goals \_\_\_
- 42) adapting an intervention based on patient's attitude/response/non-verbal cues \_\_\_
- 43) showing sensitivity towards a patient's medical condition \_\_\_
- 44) applying some basic behavioural change skills in appropriate situations \_\_\_
- 45) evaluating the effectiveness of an intervention, including re-negotiation of goals as appropriate \_\_\_
- 46) preparing and delivering presentation of patient case or journal article \_\_\_
- 47) preparing and delivering appropriately pitched group advice \_\_\_

***LO – Team Working***

- 48) working as a team member within the dietetic department \_\_\_
- 49) appreciating the role of the dietitian within a team and using the contribution of other members to aid service delivery \_\_\_

***LO – Service Delivery***

- 50) reviewing research from appropriate sources that is relevant to conditions that arise \_\_\_
- 51) appreciating how research and other information can inform practice \_\_\_

***Other Learning Opportunities***

- 52) listening actively \_\_\_
- 53) demonstrating empathy \_\_\_
- 54) developing my clinical reasoning skills \_\_\_
- 55) developing my confidence during practice placement education \_\_\_
- 56) rehearsing during practice education \_\_\_
- 57) engaging in reflective practice \_\_\_

**Peer Feedback:** formative feedback from one student to another (not assessment)

<i>Likert Rating Scale</i>				
<b>1</b> Strongly Agree	<b>2</b> Agree	<b>3</b> Neutral	<b>4</b> Disagree	<b>5</b> Strongly Disagree

**Peer Feedback helped me become competent in:**

***Learning Outcome (LO) - Knowledge & Practice (Information Collection)***

- 1) collecting accurate information from medical/nursing/bed-end charts \_\_\_\_
- 2) collecting accurate information from patients/MDT staff \_\_\_\_
- 3) adapting a different method of obtaining dietary information to suit a particular patient/group \_\_\_\_
- 4) distinguishing between information that is relevant and non-relevant \_\_\_\_
- 5) recognising where data are insufficient to allow for an accurate overview of the patient's status, i.e. the need for further relevant investigations/tests \_\_\_\_
- 6) evaluate the effect of social and psychosocial information on nutritional status of patient, e.g. a recent bereavement \_\_\_\_

***LO - Knowledge & Practice (Nutrition Assessment)***

- 7) obtaining and recording an accurate 24-hr recall/diet history for inpatients/outpatients \_\_\_\_
- 8) analysing a 24-hour recall or diet history in terms of energy/protein and micronutrient content (e.g. Ca/Fe) \_\_\_\_
- 9) recording and analysing fluid balance information \_\_\_\_
- 10) knowledge of nutrition composition of oral nutritional supplements and enteral feeds \_\_\_\_
- 11) calculating energy, protein and fluid requirements for increasingly complex patients using appropriate equations/methodology \_\_\_\_
- 12) understanding the relationship between relevant biochemical tests and diet \_\_\_\_
- 13) knowledge of common medical conditions \_\_\_\_
- 14) knowledge of nutritional requirements for patients with these conditions \_\_\_\_

***LO - Knowledge & Practice (Nutrition Care Planning)***

- 15) making a nutrition diagnosis \_\_\_\_
- 16) planning a dietetic intervention \_\_\_\_
- 17) implementing a dietetic intervention \_\_\_\_
- 18) undertaking a presentation/group work activity/project work \_\_\_\_
- 19) formulating basic enteral feeding regimens \_\_\_\_
- 20) selecting appropriate parenteral nutrition formulations \_\_\_\_
- 21) recognising the need to monitor/alter nutrition plans for oral/enteral/parenteral nutrition \_\_\_\_
- 22) prioritising essential versus non-essential goals/tasks \_\_\_\_

***L.O. - Knowledge & Practice (Anthropometry)***

- 23) collecting anthropometric data \_\_\_\_
- 24) interpreting anthropometric data and understanding the relevance to the patient's nutritional status \_\_\_\_
- 25) using nutritional screening tools appropriately \_\_\_\_

***LO - Knowledge & Practice (Student Dietitian Practice)***

- 26) justifying interventions based on evidence based practice or departmental policy \_\_\_\_
- 27) documenting in patient records in line with standard policies and procedures \_\_\_\_



**Peer Feedback:** formative feedback from one student to another (not assessment)

<i>Likert Rating Scale</i>				
<b>1</b> Strongly Agree	<b>2</b> Agree	<b>3</b> Neutral	<b>4</b> Disagree	<b>5</b> Strongly Disagree

**Peer Feedback helped me become competent in:**

***LO - Professionalism***

- 28) being reliable \_\_\_
- 29) being aware of my own limitations as appropriate for the stage of training \_\_\_
- 30) seeking help appropriately \_\_\_
- 31) maintaining patient confidentiality \_\_\_
- 32) being punctual throughout the daily course of work \_\_\_
- 33) completing the required workload within recommended timeframe \_\_\_
- 34) assessing my performance realistically and accurately \_\_\_
- 35) reflecting on my ability to meet the competences required \_\_\_
- 36) demonstrating interest motivation in my work \_\_\_
- 37) adhering to the dress code as per local policy \_\_\_
- 38) liaising with MDT members as appropriate \_\_\_

***LO - Communication***

- 39) explaining dietary interventions for increasingly complex cases clearly & pitched appropriately \_\_\_
- 40) evaluating and adapting communication techniques and/or resources to suit patient/audience \_\_\_
- 41) negotiating appropriate identified goals \_\_\_
- 42) adapting an intervention based on patient's attitude/response/non-verbal cues \_\_\_
- 43) showing sensitivity towards a patient's medical condition \_\_\_
- 44) applying some basic behavioural change skills in appropriate situations \_\_\_
- 45) evaluating the effectiveness of an intervention, including re-negotiation of goals as appropriate \_\_\_
- 46) preparing and delivering presentation of patient case or journal article \_\_\_
- 47) preparing and delivering appropriately pitched group advice \_\_\_

***LO – Team Working***

- 48) working as a team member within the dietetic department \_\_\_
- 49) appreciating the role of the dietitian within a team and using the contribution of other members to aid service delivery \_\_\_

***LO – Service Delivery***

- 50) reviewing research from appropriate sources that is relevant to conditions that arise \_\_\_
- 51) appreciating how research and other information can inform practice \_\_\_

***Other Learning Opportunities***

- 52) listening actively \_\_\_
- 53) demonstrating empathy \_\_\_
- 54) developing my clinical reasoning skills \_\_\_
- 55) developing my confidence during practice placement education \_\_\_
- 56) rehearsing during practice education \_\_\_
- 57) engaging in reflective practice \_\_\_

**In the following questions, the term ‘peer learning’ will represent an umbrella term incorporating collaborative learning, peer observation and peer feedback.**

58) To what extent was peer learning most useful during the following periods of practice placement education:

Beginning:	Not at all <input type="checkbox"/>	A little <input type="checkbox"/>	A lot <input type="checkbox"/>
Midway:	Not at all <input type="checkbox"/>	A little <input type="checkbox"/>	A lot <input type="checkbox"/>
End:	Not at all <input type="checkbox"/>	A little <input type="checkbox"/>	A lot <input type="checkbox"/>

59) Peer feedback only worked well when students were willing to participate:

Very much agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neither agree nor disagree <input type="checkbox"/>	Disagree <input type="checkbox"/>	Very much disagree <input type="checkbox"/>
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60) The following promoted willingness from students: (please give examples of why students would want to participate in the peer learning process):

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61) The influence of peer learning on my achievement of these competencies depended on the skills of the educator in facilitating this method:

Very much agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neither agree nor disagree <input type="checkbox"/>	Disagree <input type="checkbox"/>	Very much disagree <input type="checkbox"/>
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62) My educators were knowledgeable about peer learning:

Very much agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neither agree nor disagree <input type="checkbox"/>	Disagree <input type="checkbox"/>	Very much disagree <input type="checkbox"/>
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63) My educators facilitated peer learning well:

Very much agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neither agree nor disagree <input type="checkbox"/>	Disagree <input type="checkbox"/>	Very much disagree <input type="checkbox"/>
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Please comment further (without using educator or location names please)

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64) To what extent did you feel that the person that you were matched with facilitated your learning?

- |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|
| None                     | A little                 | A lot                    |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

65) Did you consider the peer feedback you received to be mostly:

- |               |                              |                             |                                     |
|---------------|------------------------------|-----------------------------|-------------------------------------|
| Fair:         | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Don't know <input type="checkbox"/> |
| Good quality: | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Don't know <input type="checkbox"/> |
| Satisfactory: | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Don't know <input type="checkbox"/> |
| Relevant:     | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Don't know <input type="checkbox"/> |

66) Did you consider the peer feedback you gave to be mostly:

- |               |                              |                             |                                     |
|---------------|------------------------------|-----------------------------|-------------------------------------|
| Fair:         | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Don't know <input type="checkbox"/> |
| Good quality: | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Don't know <input type="checkbox"/> |
| Satisfactory: | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Don't know <input type="checkbox"/> |
| Relevant:     | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Don't know <input type="checkbox"/> |

67) I was well prepared in college for engaging in peer learning on placement:

- |                          |                          |                            |                          |                          |
|--------------------------|--------------------------|----------------------------|--------------------------|--------------------------|
| Very much agree          | Agree                    | Neither agree nor disagree | Disagree                 | Very much disagree       |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |

68) What prepared you most for engaging in peer learning?

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69) What else would have been useful for preparing you to engage in peer learning?

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70) What, if any, were your fears or concerns about participating in peer (2:1) learning based placement?

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and were they realised during PPB?

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71) The 2:1 peer learning model worked better in:

the hospital setting       the community setting       No difference

Further comment:

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72) The 2:1 peer learning model worked better in:

an inpatient setting       an outpatient setting       No difference

Further comment:

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73) Were you facilitated in student-led completion of assessment forms during this placement?:

Yes       No       For some weeks

If so, did you find that this helped you develop competence during PPE?:

Yes       No       Unsure

Further comment:

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Any further comments/observations:

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**Thank you, your participation is much appreciated.**

## Questionnaire for Educators post-Practice Placement B

Code number: \_\_\_\_\_

Please tick this box to confirm that you are willing to be identified by the gatekeeper only, so that we can check your availability for interview at a later date

### *Demographics:*

1) Which best describes your role in practice placement education? [tick one or more]

Educator

Student Coordinator

Manager

2) Are you primarily based in?

Hospital

Primary Care

Other , please specify \_\_\_\_\_

3) How often have you previously facilitated students using a 1:1 education model?

Never

More than once

2-4 times

>5 times

4) Have you previously facilitated students or been facilitated yourself as a student using a 2:1 model?

Yes, as educator

Yes, as student

No

5) How many years of clinical experience do you have?

<1

2-4

5-10

11-20

21-30

>31

6) For how many days, during 2013, did you facilitate students using a 2:1 education model?

1-5

6-10

11-15

16-20

21-30

Other  \_\_\_\_\_

*Please give a number representing your agreement with each statement according to this scale:*

<i>Likert Rating Scale</i>				
<b>1</b> Strongly Agree	<b>2</b> Agree	<b>3</b> Neutral	<b>4</b> Disagree	<b>5</b> Strongly Disagree

- 7) I have a good understanding of what collaborative learning is: \_\_\_\_\_
- 8) I have a good understanding of what peer observation is: \_\_\_\_\_
- 9) I have a good understanding of what peer feedback is: \_\_\_\_\_
- 
- 10) Engaging in collaborative learning provided opportunities for students to learn during placement \_\_\_\_\_
- 11) Engaging in peer observation provided opportunities for students to learn during placement \_\_\_\_\_
- 12) Engaging in peer feedback provided opportunities for students to learn during placement \_\_\_\_\_
- 
- 13) I would prefer not to have facilitated collaborative learning during placement \_\_\_\_\_
- 14) I would prefer not to have facilitated peer observation during placement \_\_\_\_\_
- 15) I would prefer not to have facilitated peer feedback during placement \_\_\_\_\_

**Definitions:**

**Collaborative Learning:** indirect teaching in which the instructor identifies the task and organises the students to work out a solution, independently of the educator

**Peer Observation:** one student observing the other student, and sharing those observations, e.g. scripting

**Peer Feedback:** formative feedback from one student to another (not assessment)

**Collaborative Learning:** indirect teaching in which the instructor states the problem and organises the students to work it out together, independently of the educator

Likert Rating Scale				
1 Strongly Agree	2 Agree	3 Neutral	4 Disagree	5 Strongly Disagree

**Collaborative Learning helped students become competent in:**

***Learning Outcome (LO) - Knowledge & Practice (Information Collection)***

- 16) collecting accurate information from medical/nursing/bed-end charts \_\_\_\_
- 17) collecting accurate information from patients/MDT staff \_\_\_\_
- 18) adapting a different method of obtaining dietary information to suit a particular patient/group \_\_\_\_
- 19) distinguishing between information that is relevant and non-relevant \_\_\_\_
- 20) recognising where data are insufficient to allow for an accurate overview of the patient's status, i.e. the need for further relevant investigations/tests \_\_\_\_
- 21) evaluate the effect of social and psychosocial information on nutritional status of patient, e.g. a recent bereavement \_\_\_\_

***LO - Knowledge & Practice (Nutrition Assessment)***

- 22) obtaining and recording an accurate 24-hr recall/diet history for inpatients/outpatients \_\_\_\_
- 23) analysing a 24-hour recall or diet history in terms of energy/protein and micronutrient content (e.g. Ca/Fe) \_\_\_\_
- 24) recording and analysing fluid balance information \_\_\_\_
- 25) knowledge of nutrition composition of oral nutritional supplements and enteral feeds \_\_\_\_
- 26) calculating energy, protein and fluid requirements for increasingly complex patients using appropriate equations/methodology \_\_\_\_
- 27) understanding the relationship between relevant biochemical tests and diet \_\_\_\_
- 28) knowledge of common medical conditions \_\_\_\_
- 29) knowledge of nutritional requirements for patients with these conditions \_\_\_\_

***LO - Knowledge & Practice (Nutrition Care Planning)***

- 30) making a nutrition diagnosis \_\_\_\_
- 31) planning a dietetic intervention \_\_\_\_
- 32) implementing a dietetic intervention \_\_\_\_
- 33) undertaking a presentation/group work activity/project work \_\_\_\_
- 34) formulating basic enteral feeding regimens \_\_\_\_
- 35) selecting appropriate parenteral nutrition formulations \_\_\_\_
- 36) recognising the need to monitor/alter nutrition plans for oral/enteral/parenteral nutrition \_\_\_\_
- 37) prioritising essential versus non-essential goals/tasks \_\_\_\_

***L.O. - Knowledge & Practice (Anthropometry)***

- 38) collecting anthropometric data \_\_\_\_
- 39) interpreting anthropometric data and understanding the relevance to the patient's nutritional status \_\_\_\_
- 40) using nutritional screening tools appropriately \_\_\_\_

***LO - Knowledge & Practice (Student Dietitian Practice)***

- 41) justifying interventions based on evidence based practice or departmental policy \_\_\_\_
- 42) documenting in patient records in line with standard policies and procedures \_\_\_\_

**Collaborative Learning:** indirect teaching in which the instructor states the problem and organises the students to work it out together, independently of the educator

<i>Likert Rating Scale</i>				
<b>1</b> Strongly Agree	<b>2</b> Agree	<b>3</b> Neutral	<b>4</b> Disagree	<b>5</b> Strongly Disagree

**Collaborative Learning helped students become competent in:**

***LO - Professionalism***

- 43) being reliable \_\_\_
- 44) being aware of their own limitations as appropriate for the stage of training \_\_\_
- 45) seeking help appropriately \_\_\_
- 46) maintaining patient confidentiality \_\_\_
- 47) being punctual throughout the daily course of work \_\_\_
- 48) completing the required workload within recommended timeframe \_\_\_
- 49) assessing their performance realistically and accurately \_\_\_
- 50) reflecting on their ability to meet the competences required \_\_\_
- 51) demonstrating interest motivation in their work \_\_\_
- 52) adhering to the dress code as per local policy \_\_\_
- 53) liaising with MDT members as appropriate \_\_\_

***LO - Communication***

- 54) explaining dietary interventions for increasingly complex cases clearly & pitched appropriately \_\_\_
- 55) evaluating and adapting communication techniques and/or resources to suit patient/audience \_\_\_
- 56) negotiating appropriate identified goals \_\_\_
- 57) adapting an intervention based on patient's attitude/response/non-verbal cues \_\_\_
- 58) showing sensitivity towards a patient's medical condition \_\_\_
- 59) applying some basic behavioural change skills in appropriate situations \_\_\_
- 60) evaluating the effectiveness of an intervention, including re-negotiation of goals as appropriate \_\_\_
- 61) preparing and delivering presentation of patient case or journal article \_\_\_
- 62) preparing and delivering appropriately pitched group advice \_\_\_

***LO – Team Working***

- 63) working as a team member within the dietetic department \_\_\_
- 64) appreciating the role of the dietitian within a team and using the contribution of other members to aid service delivery \_\_\_

***LO – Service Delivery***

- 65) reviewing research from appropriate sources that is relevant to conditions that arise \_\_\_
- 66) appreciating how research and other information can inform practice \_\_\_

***Other Learning Opportunities***

- 67) listening actively \_\_\_
- 68) demonstrating empathy \_\_\_
- 69) developing their clinical reasoning skills \_\_\_
- 70) developing their confidence during practice placement education \_\_\_
- 71) rehearsing during practice education \_\_\_
- 72) engaging in reflective practice \_\_\_



**Peer Observation:** one student observing the other student, and sharing those observations, e.g. scripting

<i>Likert Rating Scale</i>				
<b>1</b> Strongly Agree	<b>2</b> Agree	<b>3</b> Neutral	<b>4</b> Disagree	<b>5</b> Strongly Disagree

**Peer Observation helped students become competent in:**

***Learning Outcome (LO) - Knowledge & Practice (Information Collection)***

- 73) collecting accurate information from medical/nursing/bed-end charts \_\_\_\_
- 74) collecting accurate information from patients/MDT staff \_\_\_\_
- 75) adapting a different method of obtaining dietary information to suit a particular patient/group \_\_\_\_
- 76) distinguishing between information that is relevant and non-relevant \_\_\_\_
- 77) recognising where data are insufficient to allow for an accurate overview of the patient's status, i.e. the need for further relevant investigations/tests \_\_\_\_
- 78) evaluate the effect of social and psychosocial information on nutritional status of patient, e.g. a recent bereavement \_\_\_\_

***LO - Knowledge & Practice (Nutrition Assessment)***

- 79) obtaining and recording an accurate 24-hr recall/diet history for inpatients/outpatients \_\_\_\_
- 80) analysing a 24-hour recall or diet history in terms of energy/protein and micronutrient content (e.g. Ca/Fe) \_\_\_\_
- 81) recording and analysing fluid balance information \_\_\_\_
- 82) knowledge of nutrition composition of oral nutritional supplements and enteral feeds \_\_\_\_
- 83) calculating energy, protein and fluid requirements for increasingly complex patients using appropriate equations/methodology \_\_\_\_
- 84) understanding the relationship between relevant biochemical tests and diet \_\_\_\_
- 85) knowledge of common medical conditions \_\_\_\_
- 86) knowledge of nutritional requirements for patients with these conditions \_\_\_\_

***LO - Knowledge & Practice (Nutrition Care Planning)***

- 87) making a nutrition diagnosis \_\_\_\_
- 88) planning a dietetic intervention \_\_\_\_
- 89) implementing a dietetic intervention \_\_\_\_
- 90) undertaking a presentation/group work activity/project work \_\_\_\_
- 91) formulating basic enteral feeding regimens \_\_\_\_
- 92) selecting appropriate parenteral nutrition formulations \_\_\_\_
- 93) recognising the need to monitor/alter nutrition plans for oral/enteral/parenteral nutrition \_\_\_\_
- 94) prioritising essential versus non-essential goals/tasks \_\_\_\_

***L.O. - Knowledge & Practice (Anthropometry)***

- 95) collecting anthropometric data \_\_\_\_
- 96) interpreting anthropometric data and understanding the relevance to the patient's nutritional status \_\_\_\_
- 97) using nutritional screening tools appropriately \_\_\_\_

***LO - Knowledge & Practice (Student Dietitian Practice)***

- 98) justifying interventions based on evidence based practice or departmental policy \_\_\_\_
- 99) documenting in patient records in line with standard policies and procedures \_\_\_\_

**Peer Observation:** one student observing the other student, and sharing those observations, e.g. scripting

<i>Likert Rating Scale</i>				
<b>1</b> Strongly Agree	<b>2</b> Agree	<b>3</b> Neutral	<b>4</b> Disagree	<b>5</b> Strongly Disagree

**Peer Observation helped students become competent in:**

***LO - Professionalism***

- 100) being reliable \_\_\_
- 101) being aware of their own limitations as appropriate for the stage of training \_\_\_
- 102) seeking help appropriately \_\_\_
- 103) maintaining patient confidentiality \_\_\_
- 104) being punctual throughout the daily course of work \_\_\_
- 105) completing the required workload within recommended timeframe \_\_\_
- 106) assessing their performance realistically and accurately \_\_\_
- 107) reflecting on their ability to meet the competences required \_\_\_
- 108) demonstrating interest motivation in their work \_\_\_
- 109) adhering to the dress code as per local policy \_\_\_
- 110) liaising with MDT members as appropriate \_\_\_

***LO - Communication***

- 111) explaining dietary interventions for increasingly complex cases clearly & pitched appropriately \_\_\_
- 112) evaluating and adapting communication techniques and/or resources to suit patient/audience \_\_\_
- 113) negotiating appropriate identified goals \_\_\_
- 114) adapting an intervention based on patient's attitude/response/non-verbal cues \_\_\_
- 115) showing sensitivity towards a patient's medical condition \_\_\_
- 116) applying some basic behavioural change skills in appropriate situations \_\_\_
- 117) evaluating the effectiveness of an intervention, including re-negotiation of goals as appropriate \_\_\_
- 118) preparing and delivering presentation of patient case or journal article \_\_\_
- 119) preparing and delivering appropriately pitched group advice \_\_\_

***LO – Team Working***

- 120) working as a team member within the dietetic department \_\_\_
- 121) appreciating the role of the dietitian within a team and using the contribution of other members to aid service delivery \_\_\_

***LO – Service Delivery***

- 122) reviewing research from appropriate sources that is relevant to conditions that arise \_\_\_
- 123) appreciating how research and other information can inform practice \_\_\_

***Other Learning Opportunities***

- 124) listening actively \_\_\_
- 125) demonstrating empathy \_\_\_
- 126) developing their clinical reasoning skills \_\_\_
- 127) developing their confidence during practice placement education \_\_\_
- 128) rehearsing during practice education \_\_\_
- 129) engaging in reflective practice \_\_\_

**Peer Feedback:** formative feedback from one student to another (not assessment)

<i>Likert Rating Scale</i>				
<b>1</b> Strongly Agree	<b>2</b> Agree	<b>3</b> Neutral	<b>4</b> Disagree	<b>5</b> Strongly Disagree

**Peer Feedback helped students become competent in:**

***Learning Outcome (LO) - Knowledge & Practice (Information Collection)***

- 130) collecting accurate information from medical/nursing/bed-end charts \_\_\_\_
- 131) collecting accurate information from patients/MDT staff \_\_\_\_
- 132) adapting a different method of obtaining dietary information to suit a particular patient/group \_\_\_\_
- 133) distinguishing between information that is relevant and non-relevant \_\_\_\_
- 134) recognising where data are insufficient to allow for an accurate overview of the patient's status, i.e. the need for further relevant investigations/tests \_\_\_\_
- 135) evaluate the effect of social and psychosocial information on nutritional status of patient, e.g. a recent bereavement \_\_\_\_

***LO - Knowledge & Practice (Nutrition Assessment)***

- 136) obtaining and recording an accurate 24-hr recall/diet history for inpatients/outpatients \_\_\_\_
- 137) analysing a 24-hour recall or diet history in terms of energy/protein and micronutrient content (e.g. Ca/Fe) \_\_\_\_
- 138) recording and analysing fluid balance information \_\_\_\_
- 139) knowledge of nutrition composition of oral nutritional supplements and enteral feeds \_\_\_\_
- 140) calculating energy, protein and fluid requirements for increasingly complex patients using appropriate equations/methodology \_\_\_\_
- 141) understanding the relationship between relevant biochemical tests and diet \_\_\_\_
- 142) knowledge of common medical conditions \_\_\_\_
- 143) knowledge of nutritional requirements for patients with these conditions \_\_\_\_

***LO - Knowledge & Practice (Nutrition Care Planning)***

- 144) making a nutrition diagnosis \_\_\_\_
- 145) planning a dietetic intervention \_\_\_\_
- 146) implementing a dietetic intervention \_\_\_\_
- 147) undertaking a presentation/group work activity/project work \_\_\_\_
- 148) formulating basic enteral feeding regimens \_\_\_\_
- 149) selecting appropriate parenteral nutrition formulations \_\_\_\_
- 150) recognising the need to monitor/alter nutrition plans for oral/enteral/parenteral nutrition \_\_\_\_
- 151) prioritising essential versus non-essential goals/tasks \_\_\_\_

***L.O. - Knowledge & Practice (Anthropometry)***

- 152) collecting anthropometric data \_\_\_\_
- 153) interpreting anthropometric data and understanding the relevance to the patient's nutritional status \_\_\_\_
- 154) using nutritional screening tools appropriately \_\_\_\_

***LO - Knowledge & Practice (Student Dietitian Practice)***

- 155) justifying interventions based on evidence based practice or departmental policy \_\_\_\_
- 156) documenting in patient records in line with standard policies and procedures \_\_\_\_

**Peer Feedback:** formative feedback from one student to another (not assessment)

<i>Likert Rating Scale</i>				
<b>1</b> Strongly Agree	<b>2</b> Agree	<b>3</b> Neutral	<b>4</b> Disagree	<b>5</b> Strongly Disagree

**Peer Feedback helped students become competent in:**

***LO - Professionalism***

- 157) being reliable \_\_\_
- 158) being aware of their own limitations as appropriate for the stage of training \_\_\_
- 159) seeking help appropriately \_\_\_
- 160) maintaining patient confidentiality \_\_\_
- 161) being punctual throughout the daily course of work \_\_\_
- 162) completing the required workload within recommended timeframe \_\_\_
- 163) assessing their performance realistically and accurately \_\_\_
- 164) reflecting on their ability to meet the competences required \_\_\_
- 165) demonstrating interest motivation in their work \_\_\_
- 166) adhering to the dress code as per local policy \_\_\_
- 167) liaising with MDT members as appropriate \_\_\_

***LO - Communication***

- 168) explaining dietary interventions for increasingly complex cases clearly & pitched appropriately \_\_\_
- 169) evaluating and adapting communication techniques and/or resources to suit patient/audience \_\_\_
- 170) negotiating appropriate identified goals \_\_\_
- 171) adapting an intervention based on patient's attitude/response/non-verbal cues \_\_\_
- 172) showing sensitivity towards a patient's medical condition \_\_\_
- 173) applying some basic behavioural change skills in appropriate situations \_\_\_
- 174) evaluating the effectiveness of an intervention, including re-negotiation of goals as appropriate \_\_\_
- 175) preparing and delivering presentation of patient case or journal article \_\_\_
- 176) preparing and delivering appropriately pitched group advice \_\_\_

***LO – Team Working***

- 177) working as a team member within the dietetic department \_\_\_
- 178) appreciating the role of the dietitian within a team and using the contribution of other members to aid service delivery \_\_\_

***LO – Service Delivery***

- 179) reviewing research from appropriate sources that is relevant to conditions that arise \_\_\_
- 180) appreciating how research and other information can inform practice \_\_\_

***Other Learning Opportunities***

- 181) listening actively \_\_\_
- 182) demonstrating empathy \_\_\_
- 183) developing their clinical reasoning skills \_\_\_
- 184) developing their confidence during practice placement education \_\_\_
- 185) rehearsing during practice education \_\_\_
- 186) engaging in reflective practice \_\_\_

**In the following questions, the term ‘peer learning’ will represent an umbrella term incorporating collaborative learning, peer observation and peer feedback.**

187) To what extent was peer learning most useful for students during the following periods of practice placement education:

Beginning:	Not at all <input type="checkbox"/>	A little <input type="checkbox"/>	A lot <input type="checkbox"/>
Midway:	Not at all <input type="checkbox"/>	A little <input type="checkbox"/>	A lot <input type="checkbox"/>
End:	Not at all <input type="checkbox"/>	A little <input type="checkbox"/>	A lot <input type="checkbox"/>

188) Peer feedback only worked well when students were willing to participate:

Very much agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neither agree nor disagree <input type="checkbox"/>	Disagree <input type="checkbox"/>	Very much disagree <input type="checkbox"/>
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189) The following promoted willingness from students: (please give examples of why students would want to participate in the peer learning process):

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190) Students were well prepared in college for engaging in peer learning on placement:

Very much agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neither agree nor disagree <input type="checkbox"/>	Disagree <input type="checkbox"/>	Very much disagree <input type="checkbox"/>
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191) What else would have been useful for preparing students to engage in peer learning?

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192) I (the educator) was well prepared by college for facilitating peer learning on placement:

Very much agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neither agree nor disagree <input type="checkbox"/>	Disagree <input type="checkbox"/>	Very much disagree <input type="checkbox"/>
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193) What prepared you most for facilitating in peer learning?

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194) What else would have been useful for preparing you to facilitate in peer learning?

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195) What, if any, were your fears or concerns about facilitating a peer (2:1) learning based placement?

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and were they realised during PPB?

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196) The 2:1 peer learning model worked better in:

the hospital setting       the community setting       No difference       Don't know

Further comment:

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197) The 2:1 peer learning model worked better in:

an inpatient setting       an outpatient setting       No difference       Don't know

Further comment:

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198) Did you facilitate student-led completion of assessment forms during this placement?:

Yes       No       For some weeks

If so, did you find that this helped students develop competency during PPE?:

Yes       No       Unsure

Further comment:

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**Any further comments/observations:**

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**Thank you, your participation is very much appreciated.**

# Questionnaire for Students post-Practice Placement C

Code number: \_\_\_\_\_

Please tick this box to confirm that you are willing to be identified by the gatekeeper only, so that we can analyse corresponding questionnaires anonymously, or check your availability for interview at a later date

Please give a number representing your agreement with each statement according to this scale:

Likert Rating Scale				
1 Strongly Agree	2 Agree	3 Neutral	4 Disagree	5 Strongly Disagree

- 1) I have a good understanding of what collaborative learning is: \_\_\_\_\_
- 2) I have a good understanding of what peer observation is: \_\_\_\_\_
- 3) I have a good understanding of what peer feedback is: \_\_\_\_\_
  
- 4) Engaging in collaborative learning provided opportunities for me to learn during placement \_\_\_\_\_
- 5) Engaging in peer observation provided opportunities for me to learn during placement \_\_\_\_\_
- 6) Engaging in peer feedback provided opportunities for me to learn during placement \_\_\_\_\_
  
- 7) I would prefer not to have engaged in collaborative learning during placement \_\_\_\_\_
- 8) I would prefer not to have engaged in peer observation during placement \_\_\_\_\_
- 9) I would prefer not to have engaged in peer feedback during placement \_\_\_\_\_

## Definitions:

**Collaborative Learning:** indirect teaching in which the instructor identifies the task and organises the students to work out a solution, independently of the educator

**Peer Observation:** one student observing the other student, and sharing those observations, e.g. scripting

**Peer Feedback:** formative feedback from one student to another (not assessment)

**Collaborative Learning:** indirect teaching in which the instructor states the problem and organises the students to work it out together, independently of the educator

Likert Rating Scale				
1 Strongly Agree	2 Agree	3 Neutral	4 Disagree	5 Strongly Disagree

**Collaborative Learning helped me become competent in:**

***Learning Outcome (LO) - Knowledge & Practice (Information Collection)***

- 10) collecting accurate information from medical/nursing/bed-end charts \_\_\_\_
- 11) collecting accurate information from patients/MDT staff \_\_\_\_
- 12) adapting a different method of obtaining dietary information to suit a particular patient/group \_\_\_\_
- 13) distinguishing between information that is relevant and non-relevant \_\_\_\_
- 14) recognising where data are insufficient to allow for an accurate overview of the patient's status, i.e. the need for further relevant investigations/tests \_\_\_\_
- 15) evaluate the effect of social and psychosocial information on nutritional status of patient, e.g. a recent bereavement \_\_\_\_

***LO - Knowledge & Practice (Nutrition Assessment)***

- 16) obtaining and recording an accurate 24-hr recall/diet history for inpatients/outpatients \_\_\_\_
- 17) analysing a 24-hour recall or diet history in terms of energy/protein and micronutrient content (e.g. Ca/Fe) \_\_\_\_
- 18) recording and analysing fluid balance information \_\_\_\_
- 19) knowledge of nutrition composition of oral nutritional supplements and enteral feeds \_\_\_\_
- 20) calculating energy, protein and fluid requirements for increasingly complex patients using appropriate equations/methodology \_\_\_\_
- 21) understanding the relationship between relevant biochemical tests and diet \_\_\_\_
- 22) knowledge of common medical conditions \_\_\_\_
- 23) knowledge of nutritional requirements for patients with these conditions \_\_\_\_

***LO - Knowledge & Practice (Nutrition Care Planning)***

- 24) making a nutrition diagnosis \_\_\_\_
- 25) planning a dietetic intervention \_\_\_\_
- 26) implementing a dietetic intervention \_\_\_\_
- 27) undertaking a presentation/group work activity/project work \_\_\_\_
- 28) formulating basic enteral feeding regimens \_\_\_\_
- 29) selecting appropriate parenteral nutrition formulations \_\_\_\_
- 30) recognising the need to monitor/alter nutrition plans for oral/enteral/parenteral nutrition \_\_\_\_
- 31) prioritising essential versus non-essential goals/tasks \_\_\_\_

***L.O. - Knowledge & Practice (Anthropometry)***

- 32) collecting anthropometric data \_\_\_\_
- 33) interpreting anthropometric data and understanding the relevance to the patient's nutritional status \_\_\_\_
- 34) using nutritional screening tools appropriately \_\_\_\_

***LO - Knowledge & Practice (Student Dietitian Practice)***

- 35) justifying interventions based on evidence based practice or departmental policy \_\_\_\_
- 36) documenting in patient records in line with standard policies and procedures \_\_\_\_



**Collaborative Learning:** indirect teaching in which the instructor states the problem and organises the students to work it out together, independently of the educator

<i>Likert Rating Scale</i>				
<b>1</b> Strongly Agree	<b>2</b> Agree	<b>3</b> Neutral	<b>4</b> Disagree	<b>5</b> Strongly Disagree

**Collaborative Learning helped me become competent in:**

***LO - Professionalism***

- 37) being reliable \_\_\_
- 38) being aware of my own limitations as appropriate for the stage of training \_\_\_
- 39) seeking help appropriately \_\_\_
- 40) maintaining patient confidentiality \_\_\_
- 41) being punctual throughout the daily course of work \_\_\_
- 42) completing the required workload within recommended timeframe \_\_\_
- 43) assessing my performance realistically and accurately \_\_\_
- 44) reflecting on my ability to meet the competences required \_\_\_
- 45) demonstrating interest/motivation in my work \_\_\_
- 46) adhering to the dress code as per local policy \_\_\_
- 47) liaising with MDT members as appropriate \_\_\_

***LO - Communication***

- 48) explaining dietary interventions for increasingly complex cases clearly & pitched appropriately \_\_\_
- 49) evaluating and adapting communication techniques and/or resources to suit patient/audience \_\_\_
- 50) negotiating appropriate identified goals \_\_\_
- 51) adapting an intervention based on patient's attitude/response/non-verbal cues \_\_\_
- 52) showing sensitivity towards a patient's medical condition \_\_\_
- 53) applying some basic behavioural change skills in appropriate situations \_\_\_
- 54) evaluating the effectiveness of an intervention, including re-negotiation of goals as appropriate \_\_\_
- 55) preparing and delivering presentation of patient case or journal article \_\_\_
- 56) preparing and delivering appropriately pitched group advice \_\_\_

***LO – Team Working***

- 57) working as a team member within the dietetic department \_\_\_
- 58) appreciating the role of the dietitian within a team and using the contribution of other members to aid service delivery \_\_\_

***LO – Service Delivery***

- 59) reviewing research from appropriate sources that is relevant to conditions that arise \_\_\_
- 60) appreciating how research and other information can inform practice \_\_\_

***Other Learning Opportunities***

- 61) listening actively \_\_\_
- 62) demonstrating empathy \_\_\_
- 63) developing my clinical reasoning skills \_\_\_
- 64) developing my confidence during practice placement education \_\_\_
- 65) rehearsing during practice education \_\_\_
- 66) engaging in reflective practice \_\_\_

**Peer Observation:** one student observing the other student, and sharing those observations, e.g. scripting

<i>Likert Rating Scale</i>				
<b>1</b> Strongly Agree	<b>2</b> Agree	<b>3</b> Neutral	<b>4</b> Disagree	<b>5</b> Strongly Disagree

**Peer Observation helped me become competent in:**

***Learning Outcome (LO) - Knowledge & Practice (Information Collection)***

- 67) collecting accurate information from medical/nursing/bed-end charts \_\_\_\_
- 68) collecting accurate information from patients/MDT staff \_\_\_\_
- 69) adapting a different method of obtaining dietary information to suit a particular patient/group \_\_\_\_
- 70) distinguishing between information that is relevant and non-relevant \_\_\_\_
- 71) recognising where data are insufficient to allow for an accurate overview of the patient's status, i.e. the need for further relevant investigations/tests \_\_\_\_
- 72) evaluate the effect of social and psychosocial information on nutritional status of patient, e.g. a recent bereavement \_\_\_\_

***LO - Knowledge & Practice (Nutrition Assessment)***

- 73) obtaining and recording an accurate 24-hr recall/diet history for inpatients/outpatients \_\_\_\_
- 74) analysing a 24-hour recall or diet history in terms of energy/protein and micronutrient content (e.g. Ca/Fe) \_\_\_\_
- 75) recording and analysing fluid balance information \_\_\_\_
- 76) knowledge of nutrition composition of oral nutritional supplements and enteral feeds \_\_\_\_
- 77) calculating energy, protein and fluid requirements for increasingly complex patients using appropriate equations/methodology \_\_\_\_
- 78) understanding the relationship between relevant biochemical tests and diet \_\_\_\_
- 79) knowledge of common medical conditions \_\_\_\_
- 80) knowledge of nutritional requirements for patients with these conditions \_\_\_\_

***LO - Knowledge & Practice (Nutrition Care Planning)***

- 81) making a nutrition diagnosis \_\_\_\_
- 82) planning a dietetic intervention \_\_\_\_
- 83) implementing a dietetic intervention \_\_\_\_
- 84) undertaking a presentation/group work activity/project work \_\_\_\_
- 85) formulating basic enteral feeding regimens \_\_\_\_
- 86) selecting appropriate parenteral nutrition formulations \_\_\_\_
- 87) recognising the need to monitor/alter nutrition plans for oral/enteral/parenteral nutrition \_\_\_\_
- 88) prioritising essential versus non-essential goals/tasks \_\_\_\_

***L.O. - Knowledge & Practice (Anthropometry)***

- 89) collecting anthropometric data \_\_\_\_
- 90) interpreting anthropometric data and understanding the relevance to the patient's nutritional status \_\_\_\_
- 91) using nutritional screening tools appropriately \_\_\_\_

***LO - Knowledge & Practice (Student Dietitian Practice)***

- 92) justifying interventions based on evidence based practice or departmental policy \_\_\_\_
- 93) documenting in patient records in line with standard policies and procedures \_\_\_\_

**Peer Observation:** one student observing the other student, and sharing those observations, e.g. scripting

<i>Likert Rating Scale</i>				
<b>1</b> Strongly Agree	<b>2</b> Agree	<b>3</b> Neutral	<b>4</b> Disagree	<b>5</b> Strongly Disagree

**Peer Observation helped me become competent in:**

***LO - Professionalism***

- 94) being reliable \_\_\_
- 95) being aware of my own limitations as appropriate for the stage of training \_\_\_
- 96) seeking help appropriately \_\_\_
- 97) maintaining patient confidentiality \_\_\_
- 98) being punctual throughout the daily course of work \_\_\_
- 99) completing the required workload within recommended timeframe \_\_\_
- 100) assessing my performance realistically and accurately \_\_\_
- 101) reflecting on my ability to meet the competences required \_\_\_
- 102) demonstrating interest motivation in my work \_\_\_
- 103) adhering to the dress code as per local policy \_\_\_
- 104) liaising with MDT members as appropriate \_\_\_

***LO - Communication***

- 105) explaining dietary interventions for increasingly complex cases clearly & pitched appropriately \_\_\_
- 106) evaluating and adapting communication techniques and/or resources to suit patient/audience \_\_\_
- 107) negotiating appropriate identified goals \_\_\_
- 108) adapting an intervention based on patient's attitude/response/non-verbal cues \_\_\_
- 109) showing sensitivity towards a patient's medical condition \_\_\_
- 110) applying some basic behavioural change skills in appropriate situations \_\_\_
- 111) evaluating the effectiveness of an intervention, including re-negotiation of goals as appropriate \_\_\_
- 112) preparing and delivering presentation of patient case or journal article \_\_\_
- 113) preparing and delivering appropriately pitched group advice \_\_\_

***LO – Team Working***

- 114) working as a team member within the dietetic department \_\_\_
- 115) appreciating the role of the dietitian within a team and using the contribution of other members to aid service delivery \_\_\_

***LO – Service Delivery***

- 116) reviewing research from appropriate sources that is relevant to conditions that arise \_\_\_
- 117) appreciating how research and other information can inform practice \_\_\_

***Other Learning Opportunities***

- 118) listening actively \_\_\_
- 119) demonstrating empathy \_\_\_
- 120) developing my clinical reasoning skills \_\_\_
- 121) developing my confidence during practice placement education \_\_\_
- 122) rehearsing during practice education \_\_\_
- 123) engaging in reflective practice \_\_\_

**Peer Feedback:** formative feedback from one student to another (not assessment)

<i>Likert Rating Scale</i>				
<b>1</b> Strongly Agree	<b>2</b> Agree	<b>3</b> Neutral	<b>4</b> Disagree	<b>5</b> Strongly Disagree

**Peer Feedback helped me become competent in:**

***Learning Outcome (LO) - Knowledge & Practice (Information Collection)***

- 124) collecting accurate information from medical/nursing/bed-end charts \_\_\_\_
- 125) collecting accurate information from patients/MDT staff \_\_\_\_
- 126) adapting a different method of obtaining dietary information to suit a particular patient/group \_\_\_\_
- 127) distinguishing between information that is relevant and non-relevant \_\_\_\_
- 128) recognising where data are insufficient to allow for an accurate overview of the patient's status, i.e. the need for further relevant investigations/tests \_\_\_\_
- 129) evaluate the effect of social and psychosocial information on nutritional status of patient, e.g. a recent bereavement \_\_\_\_

***LO - Knowledge & Practice (Nutrition Assessment)***

- 130) obtaining and recording an accurate 24-hr recall/diet history for inpatients/outpatients \_\_\_\_
- 131) analysing a 24-hour recall or diet history in terms of energy/protein and micronutrient content (e.g. Ca/Fe) \_\_\_\_
- 132) recording and analysing fluid balance information \_\_\_\_
- 133) knowledge of nutrition composition of oral nutritional supplements and enteral feeds \_\_\_\_
- 134) calculating energy, protein and fluid requirements for increasingly complex patients using appropriate equations/methodology \_\_\_\_
- 135) understanding the relationship between relevant biochemical tests and diet \_\_\_\_
- 136) knowledge of common medical conditions \_\_\_\_
- 137) knowledge of nutritional requirements for patients with these conditions \_\_\_\_

***LO - Knowledge & Practice (Nutrition Care Planning)***

- 138) making a nutrition diagnosis \_\_\_\_
- 139) planning a dietetic intervention \_\_\_\_
- 140) implementing a dietetic intervention \_\_\_\_
- 141) undertaking a presentation/group work activity/project work \_\_\_\_
- 142) formulating basic enteral feeding regimens \_\_\_\_
- 143) selecting appropriate parenteral nutrition formulations \_\_\_\_
- 144) recognising the need to monitor/alter nutrition plans for oral/enteral/parenteral nutrition \_\_\_\_
- 145) prioritising essential versus non-essential goals/tasks \_\_\_\_

***L.O. - Knowledge & Practice (Anthropometry)***

- 146) collecting anthropometric data \_\_\_\_
- 147) interpreting anthropometric data and understanding the relevance to the patient's nutritional status \_\_\_\_
- 148) using nutritional screening tools appropriately \_\_\_\_

***LO - Knowledge & Practice (Student Dietitian Practice)***

- 149) justifying interventions based on evidence based practice or departmental policy \_\_\_\_
- 150) documenting in patient records in line with standard policies and procedures \_\_\_\_

**Peer Feedback:** formative feedback from one student to another (not assessment)

<i>Likert Rating Scale</i>				
<b>1</b> Strongly Agree	<b>2</b> Agree	<b>3</b> Neutral	<b>4</b> Disagree	<b>5</b> Strongly Disagree

**Peer Feedback helped me become competent in:**

***LO - Professionalism***

- 151) being reliable \_\_\_
- 152) being aware of my own limitations as appropriate for the stage of training \_\_\_
- 153) seeking help appropriately \_\_\_
- 154) maintaining patient confidentiality \_\_\_
- 155) being punctual throughout the daily course of work \_\_\_
- 156) completing the required workload within recommended timeframe \_\_\_
- 157) assessing my performance realistically and accurately \_\_\_
- 158) reflecting on my ability to meet the competences required \_\_\_
- 159) demonstrating interest motivation in my work \_\_\_
- 160) adhering to the dress code as per local policy \_\_\_
- 161) liaising with MDT members as appropriate \_\_\_

***LO - Communication***

- 162) explaining dietary interventions for increasingly complex cases clearly & pitched appropriately \_\_\_
- 163) evaluating and adapting communication techniques and/or resources to suit patient/audience \_\_\_
- 164) negotiating appropriate identified goals \_\_\_
- 165) adapting an intervention based on patient's attitude/response/non-verbal cues \_\_\_
- 166) showing sensitivity towards a patient's medical condition \_\_\_
- 167) applying some basic behavioural change skills in appropriate situations \_\_\_
- 168) evaluating the effectiveness of an intervention, including re-negotiation of goals as appropriate \_\_\_
- 169) preparing and delivering presentation of patient case or journal article \_\_\_
- 170) preparing and delivering appropriately pitched group advice \_\_\_

***LO – Team Working***

- 171) working as a team member within the dietetic department \_\_\_
- 172) appreciating the role of the dietitian within a team and using the contribution of other members to aid service delivery \_\_\_

***LO – Service Delivery***

- 173) reviewing research from appropriate sources that is relevant to conditions that arise \_\_\_
- 174) appreciating how research and other information can inform practice \_\_\_

***Other Learning Opportunities***

- 175) listening actively \_\_\_
- 176) demonstrating empathy \_\_\_
- 177) developing my clinical reasoning skills \_\_\_
- 178) developing my confidence during practice placement education \_\_\_
- 179) rehearsing during practice education \_\_\_
- 180) engaging in reflective practice \_\_\_

**In the following questions, the term ‘peer learning’ will represent an umbrella term incorporating collaborative learning, peer observation and peer feedback.**

181) For how many weeks during PPC did you participate in the 2:1 peer learning model?  
0       1       2       3   
4       5       6       7   
8       9       10       Other \_\_\_\_\_

182) To what extent was the 2:1 peer learning model most useful during the following periods of PPC?

Beginning:	Not at all <input type="checkbox"/>	A little <input type="checkbox"/>	A lot <input type="checkbox"/>
Midway:	Not at all <input type="checkbox"/>	A little <input type="checkbox"/>	A lot <input type="checkbox"/>
End:	Not at all <input type="checkbox"/>	A little <input type="checkbox"/>	A lot <input type="checkbox"/>

183) The 2:1 peer learning model was most useful during:

PPB	PPC	No difference
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Further comment:

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184) Peer feedback only worked well when students were willing to participate:

Very much agree	Agree	Neither agree nor disagree	Disagree	Very much disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

185) The following promoted willingness from students: (please give examples of why students would want to participate in the peer learning process):

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186) The influence of peer learning on my achievement of these competencies depended on the skills of the educator in facilitating this method:

Very much agree	Agree	Neither agree nor disagree	Disagree	Very much disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

187) My educators were knowledgeable about peer learning:

Very much agree	Agree	Neither agree nor disagree	Disagree	Very much disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

188) My educators facilitated peer learning well:

Very much agree	Agree	Neither agree nor disagree	Disagree	Very much disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please comment further (without using educator or location names please)

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189) To what extent did you feel that the person that you were matched with facilitated your learning?

None	A little	A lot
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

190) Did you consider the peer feedback you received to be mostly:

Fair:	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Don't know <input type="checkbox"/>
Good quality:	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Don't know <input type="checkbox"/>
Satisfactory:	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Don't know <input type="checkbox"/>
Relevant:	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Don't know <input type="checkbox"/>

191) Did you consider the peer feedback you gave to be mostly:

Fair:	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Don't know <input type="checkbox"/>
Good quality:	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Don't know <input type="checkbox"/>
Satisfactory:	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Don't know <input type="checkbox"/>
Relevant:	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Don't know <input type="checkbox"/>

192) Participating in a 2:1 peer education model during PPB made it easier to do so in PPC:

Very much agree	Agree	Neither agree nor disagree	Disagree	Very much disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

193) I was well prepared in college for engaging in peer learning on placement:

Very much  
agree

Agree

Neither agree  
nor disagree

Disagree

Very much  
disagree

194) What prepared you most for engaging in peer learning?

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195) What else would have been useful for preparing you to engage in peer learning?

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196) What, if any, were your fears or concerns about participating in peer (2:1) learning based placement?

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and were they realised during PPC?

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197) The 2:1 peer learning model worked better in:

an inpatient setting

an outpatient setting

No difference

Further comment:

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198) Were you facilitated in student-led completion of assessment forms during this placement?:

Yes

No

For some weeks

If so, did you find that this helped you develop competence during PPE?:

Yes

No

Unsure

Further comment:

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Any further comments/observations:

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**Thank you, your participation is much appreciated.**



## Questionnaire for Educators post-Practice Placement C

Code number: \_\_\_\_\_

Please tick this box to confirm that you are willing to be identified by the gatekeeper only, so that we can check your availability for interview at a later date

### *Demographics:*

1) Which best describes your role in practice placement education? [tick one or more]

Educator

Student Coordinator

Manager

2) Are you primarily based in?

Inpatients

Outpatients

Other , please specify \_\_\_\_\_

3) How often have you previously facilitated students using a 1:1 education model?

Never

More than once

2-4 times

>5 times

4) Have you previously facilitated students or been facilitated yourself as a student using a 2:1 model?

Yes, as educator

Yes, as student

No

5) How many years of clinical experience do you have?

<1

2-4

5-10

11-20

21-30

>31

6) a) For which week(s) of PPC did you facilitate students?

1

2

3

4

5

6

7

8

9

10

11

12

b) For how many days, during 2014, did you facilitate students using a 2:1 education model?

1-5

6-10

11-15

16-20

21-30

Other  \_\_\_\_\_

c) Was this for?

Inpatients only

Outpatients only

Both

*Please give a number representing your agreement with each statement according to this scale:*

<i>Likert Rating Scale</i>				
<b>1</b> Strongly Agree	<b>2</b> Agree	<b>3</b> Neutral	<b>4</b> Disagree	<b>5</b> Strongly Disagree

- 7) I have a good understanding of what collaborative learning is: \_\_\_\_\_
- 8) I have a good understanding of what peer observation is: \_\_\_\_\_
- 9) I have a good understanding of what peer feedback is: \_\_\_\_\_
- 
- 10) Facilitating collaborative learning provided learning opportunities during placement \_\_\_\_\_
- 11) Facilitating peer observation provided learning opportunities during placement \_\_\_\_\_
- 12) Facilitating peer feedback provided learning opportunities during placement \_\_\_\_\_
- 
- 13) I would prefer not to have facilitated collaborative learning during placement \_\_\_\_\_
- 14) I would prefer not to have facilitated peer observation during placement \_\_\_\_\_
- 15) I would prefer not to have facilitated peer feedback during placement \_\_\_\_\_

**Definitions:**

**Collaborative Learning:** indirect teaching in which the instructor identifies the task and organises the students to work out a solution, independently of the educator

**Peer Observation:** one student observing the other student, and sharing those observations, e.g. scripting

**Peer Feedback:** formative feedback from one student to another (not assessment)

**Collaborative Learning:** indirect teaching in which the instructor states the problem and organises the students to work it out together, independently of the educator

Likert Rating Scale				
1 Strongly Agree	2 Agree	3 Neutral	4 Disagree	5 Strongly Disagree

**Collaborative Learning helped students become competent in:**

***Learning Outcome (LO) - Knowledge & Practice (Information Collection)***

- 16) collecting accurate information from medical/nursing/bed-end charts \_\_\_\_
- 17) collecting accurate information from patients/MDT staff \_\_\_\_
- 18) adapting a different method of obtaining dietary information to suit a particular patient/group \_\_\_\_
- 19) distinguishing between information that is relevant and non-relevant \_\_\_\_
- 20) recognising where data are insufficient to allow for an accurate overview of the patient's status, i.e. the need for further relevant investigations/tests \_\_\_\_
- 21) evaluate the effect of social and psychosocial information on nutritional status of patient, e.g. a recent bereavement \_\_\_\_

***LO - Knowledge & Practice (Nutrition Assessment)***

- 22) obtaining and recording an accurate 24-hr recall/diet history for inpatients/outpatients \_\_\_\_
- 23) analysing a 24-hour recall or diet history in terms of energy/protein and micronutrient content (e.g. Ca/Fe) \_\_\_\_
- 24) recording and analysing fluid balance information \_\_\_\_
- 25) knowledge of nutrition composition of oral nutritional supplements and enteral feeds \_\_\_\_
- 26) calculating energy, protein and fluid requirements for increasingly complex patients using appropriate equations/methodology \_\_\_\_
- 27) understanding the relationship between relevant biochemical tests and diet \_\_\_\_
- 28) knowledge of common medical conditions \_\_\_\_
- 29) knowledge of nutritional requirements for patients with these conditions \_\_\_\_

***LO - Knowledge & Practice (Nutrition Care Planning)***

- 30) making a nutrition diagnosis \_\_\_\_
- 31) planning a dietetic intervention \_\_\_\_
- 32) implementing a dietetic intervention \_\_\_\_
- 33) undertaking a presentation/group work activity/project work \_\_\_\_
- 34) formulating basic enteral feeding regimens \_\_\_\_
- 35) selecting appropriate parenteral nutrition formulations \_\_\_\_
- 36) recognising the need to monitor/alter nutrition plans for oral/enteral/parenteral nutrition \_\_\_\_
- 37) prioritising essential versus non-essential goals/tasks \_\_\_\_

***L.O. - Knowledge & Practice (Anthropometry)***

- 38) collecting anthropometric data \_\_\_\_
- 39) interpreting anthropometric data and understanding the relevance to the patient's nutritional status \_\_\_\_
- 40) using nutritional screening tools appropriately \_\_\_\_

***LO - Knowledge & Practice (Student Dietitian Practice)***

- 41) justifying interventions based on evidence based practice or departmental policy \_\_\_\_
- 42) documenting in patient records in line with standard policies and procedures \_\_\_\_

**Collaborative Learning:** indirect teaching in which the instructor states the problem and organises the students to work it out together, independently of the educator

<i>Likert Rating Scale</i>				
<b>1</b> Strongly Agree	<b>2</b> Agree	<b>3</b> Neutral	<b>4</b> Disagree	<b>5</b> Strongly Disagree

**Collaborative Learning helped students become competent in:**

***LO - Professionalism***

- 43) being reliable \_\_\_
- 44) being aware of their own limitations as appropriate for the stage of training \_\_\_
- 45) seeking help appropriately \_\_\_
- 46) maintaining patient confidentiality \_\_\_
- 47) being punctual throughout the daily course of work \_\_\_
- 48) completing the required workload within recommended timeframe \_\_\_
- 49) assessing their performance realistically and accurately \_\_\_
- 50) reflecting on their ability to meet the competences required \_\_\_
- 51) demonstrating interest motivation in their work \_\_\_
- 52) adhering to the dress code as per local policy \_\_\_
- 53) liaising with MDT members as appropriate \_\_\_

***LO - Communication***

- 54) explaining dietary interventions for increasingly complex cases clearly & pitched appropriately \_\_\_
- 55) evaluating and adapting communication techniques and/or resources to suit patient/audience \_\_\_
- 56) negotiating appropriate identified goals \_\_\_
- 57) adapting an intervention based on patient's attitude/response/non-verbal cues \_\_\_
- 58) showing sensitivity towards a patient's medical condition \_\_\_
- 59) applying some basic behavioural change skills in appropriate situations \_\_\_
- 60) evaluating the effectiveness of an intervention, including re-negotiation of goals as appropriate \_\_\_
- 61) preparing and delivering presentation of patient case or journal article \_\_\_
- 62) preparing and delivering appropriately pitched group advice \_\_\_

***LO – Team Working***

- 63) working as a team member within the dietetic department \_\_\_
- 64) appreciating the role of the dietitian within a team and using the contribution of other members to aid service delivery \_\_\_

***LO – Service Delivery***

- 65) reviewing research from appropriate sources that is relevant to conditions that arise \_\_\_
- 66) appreciating how research and other information can inform practice \_\_\_

***Other Learning Opportunities***

- 67) listening actively \_\_\_
- 68) demonstrating empathy \_\_\_
- 69) developing their clinical reasoning skills \_\_\_
- 70) developing their confidence during practice placement education \_\_\_
- 71) rehearsing during practice education \_\_\_
- 72) engaging in reflective practice \_\_\_

**Peer Observation:** one student observing the other student, and sharing those observations, e.g. scripting

<i>Likert Rating Scale</i>				
<b>1</b> Strongly Agree	<b>2</b> Agree	<b>3</b> Neutral	<b>4</b> Disagree	<b>5</b> Strongly Disagree

**Peer Observation helped students become competent in:**

***Learning Outcome (LO) - Knowledge & Practice (Information Collection)***

- 73) collecting accurate information from medical/nursing/bed-end charts \_\_\_\_
- 74) collecting accurate information from patients/MDT staff \_\_\_\_
- 75) adapting a different method of obtaining dietary information to suit a particular patient/group \_\_\_\_
- 76) distinguishing between information that is relevant and non-relevant \_\_\_\_
- 77) recognising where data are insufficient to allow for an accurate overview of the patient's status, i.e. the need for further relevant investigations/tests \_\_\_\_
- 78) evaluate the effect of social and psychosocial information on nutritional status of patient, e.g. a recent bereavement \_\_\_\_

***LO - Knowledge & Practice (Nutrition Assessment)***

- 79) obtaining and recording an accurate 24-hr recall/diet history for inpatients/outpatients \_\_\_\_
- 80) analysing a 24-hour recall or diet history in terms of energy/protein and micronutrient content (e.g. Ca/Fe) \_\_\_\_
- 81) recording and analysing fluid balance information \_\_\_\_
- 82) knowledge of nutrition composition of oral nutritional supplements and enteral feeds \_\_\_\_
- 83) calculating energy, protein and fluid requirements for increasingly complex patients using appropriate equations/methodology \_\_\_\_
- 84) understanding the relationship between relevant biochemical tests and diet \_\_\_\_
- 85) knowledge of common medical conditions \_\_\_\_
- 86) knowledge of nutritional requirements for patients with these conditions \_\_\_\_

***LO - Knowledge & Practice (Nutrition Care Planning)***

- 87) making a nutrition diagnosis \_\_\_\_
- 88) planning a dietetic intervention \_\_\_\_
- 89) implementing a dietetic intervention \_\_\_\_
- 90) undertaking a presentation/group work activity/project work \_\_\_\_
- 91) formulating basic enteral feeding regimens \_\_\_\_
- 92) selecting appropriate parenteral nutrition formulations \_\_\_\_
- 93) recognising the need to monitor/alter nutrition plans for oral/enteral/parenteral nutrition \_\_\_\_
- 94) prioritising essential versus non-essential goals/tasks \_\_\_\_

***L.O. - Knowledge & Practice (Anthropometry)***

- 95) collecting anthropometric data \_\_\_\_
- 96) interpreting anthropometric data and understanding the relevance to the patient's nutritional status \_\_\_\_
- 97) using nutritional screening tools appropriately \_\_\_\_

***LO - Knowledge & Practice (Student Dietitian Practice)***

- 98) justifying interventions based on evidence based practice or departmental policy \_\_\_\_
- 99) documenting in patient records in line with standard policies and procedures \_\_\_\_

**Peer Observation:** one student observing the other student, and sharing those observations, e.g. scripting

<i>Likert Rating Scale</i>				
<b>1</b> Strongly Agree	<b>2</b> Agree	<b>3</b> Neutral	<b>4</b> Disagree	<b>5</b> Strongly Disagree

**Peer Observation helped students become competent in:**

***LO - Professionalism***

- 100) being reliable \_\_\_
- 101) being aware of their own limitations as appropriate for the stage of training \_\_\_
- 102) seeking help appropriately \_\_\_
- 103) maintaining patient confidentiality \_\_\_
- 104) being punctual throughout the daily course of work \_\_\_
- 105) completing the required workload within recommended timeframe \_\_\_
- 106) assessing their performance realistically and accurately \_\_\_
- 107) reflecting on their ability to meet the competences required \_\_\_
- 108) demonstrating interest motivation in their work \_\_\_
- 109) adhering to the dress code as per local policy \_\_\_
- 110) liaising with MDT members as appropriate \_\_\_

***LO - Communication***

- 111) explaining dietary interventions for increasingly complex cases clearly & pitched appropriately \_\_\_
- 112) evaluating and adapting communication techniques and/or resources to suit patient/audience \_\_\_
- 113) negotiating appropriate identified goals \_\_\_
- 114) adapting an intervention based on patient's attitude/response/non-verbal cues \_\_\_
- 115) showing sensitivity towards a patient's medical condition \_\_\_
- 116) applying some basic behavioural change skills in appropriate situations \_\_\_
- 117) evaluating the effectiveness of an intervention, including re-negotiation of goals as appropriate \_\_\_
- 118) preparing and delivering presentation of patient case or journal article \_\_\_
- 119) preparing and delivering appropriately pitched group advice \_\_\_

***LO - Team Working***

- 120) working as a team member within the dietetic department \_\_\_
- 121) appreciating the role of the dietitian within a team and using the contribution of other members to aid service delivery \_\_\_

***LO - Service Delivery***

- 122) reviewing research from appropriate sources that is relevant to conditions that arise \_\_\_
- 123) appreciating how research and other information can inform practice \_\_\_

***Other Learning Opportunities***

- 124) listening actively \_\_\_
- 125) demonstrating empathy \_\_\_
- 126) developing their clinical reasoning skills \_\_\_
- 127) developing their confidence during practice placement education \_\_\_
- 128) rehearsing during practice education \_\_\_
- 129) engaging in reflective practice \_\_\_

**Peer Feedback:** formative feedback from one student to another (not assessment)

<i>Likert Rating Scale</i>				
<b>1</b> Strongly Agree	<b>2</b> Agree	<b>3</b> Neutral	<b>4</b> Disagree	<b>5</b> Strongly Disagree

**Peer Feedback helped students become competent in:**

***Learning Outcome (LO) - Knowledge & Practice (Information Collection)***

- 130) collecting accurate information from medical/nursing/bed-end charts \_\_\_\_
- 131) collecting accurate information from patients/MDT staff \_\_\_\_
- 132) adapting a different method of obtaining dietary information to suit a particular patient/group \_\_\_\_
- 133) distinguishing between information that is relevant and non-relevant \_\_\_\_
- 134) recognising where data are insufficient to allow for an accurate overview of the patient's status, i.e. the need for further relevant investigations/tests \_\_\_\_
- 135) evaluate the effect of social and psychosocial information on nutritional status of patient, e.g. a recent bereavement \_\_\_\_

***LO - Knowledge & Practice (Nutrition Assessment)***

- 136) obtaining and recording an accurate 24-hr recall/diet history for inpatients/outpatients \_\_\_\_
- 137) analysing a 24-hour recall or diet history in terms of energy/protein and micronutrient content (e.g. Ca/Fe) \_\_\_\_
- 138) recording and analysing fluid balance information \_\_\_\_
- 139) knowledge of nutrition composition of oral nutritional supplements and enteral feeds \_\_\_\_
- 140) calculating energy, protein and fluid requirements for increasingly complex patients using appropriate equations/methodology \_\_\_\_
- 141) understanding the relationship between relevant biochemical tests and diet \_\_\_\_
- 142) knowledge of common medical conditions \_\_\_\_
- 143) knowledge of nutritional requirements for patients with these conditions \_\_\_\_

***LO - Knowledge & Practice (Nutrition Care Planning)***

- 144) making a nutrition diagnosis \_\_\_\_
- 145) planning a dietetic intervention \_\_\_\_
- 146) implementing a dietetic intervention \_\_\_\_
- 147) undertaking a presentation/group work activity/project work \_\_\_\_
- 148) formulating basic enteral feeding regimens \_\_\_\_
- 149) selecting appropriate parenteral nutrition formulations \_\_\_\_
- 150) recognising the need to monitor/alter nutrition plans for oral/enteral/parenteral nutrition \_\_\_\_
- 151) prioritising essential versus non-essential goals/tasks \_\_\_\_

***L.O. - Knowledge & Practice (Anthropometry)***

- 152) collecting anthropometric data \_\_\_\_
- 153) interpreting anthropometric data and understanding the relevance to the patient's nutritional status \_\_\_\_
- 154) using nutritional screening tools appropriately \_\_\_\_

***LO - Knowledge & Practice (Student Dietitian Practice)***

- 155) justifying interventions based on evidence based practice or departmental policy \_\_\_\_
- 156) documenting in patient records in line with standard policies and procedures \_\_\_\_

**Peer Feedback:** formative feedback from one student to another (not assessment)

<i>Likert Rating Scale</i>				
<b>1</b> Strongly Agree	<b>2</b> Agree	<b>3</b> Neutral	<b>4</b> Disagree	<b>5</b> Strongly Disagree

**Peer Feedback helped me become competent in:**

***LO - Professionalism***

- 157) being reliable \_\_\_
- 158) being aware of their own limitations as appropriate for the stage of training \_\_\_
- 159) seeking help appropriately \_\_\_
- 160) maintaining patient confidentiality \_\_\_
- 161) being punctual throughout the daily course of work \_\_\_
- 162) completing the required workload within recommended timeframe \_\_\_
- 163) assessing their performance realistically and accurately \_\_\_
- 164) reflecting on their ability to meet the competences required \_\_\_
- 165) demonstrating interest motivation in their work \_\_\_
- 166) adhering to the dress code as per local policy \_\_\_
- 167) liaising with MDT members as appropriate \_\_\_

***LO - Communication***

- 168) explaining dietary interventions for increasingly complex cases clearly & pitched appropriately \_\_\_
- 169) evaluating and adapting communication techniques and/or resources to suit patient/audience \_\_\_
- 170) negotiating appropriate identified goals \_\_\_
- 171) adapting an intervention based on patient's attitude/response/non-verbal cues \_\_\_
- 172) showing sensitivity towards a patient's medical condition \_\_\_
- 173) applying some basic behavioural change skills in appropriate situations \_\_\_
- 174) evaluating the effectiveness of an intervention, including re-negotiation of goals as appropriate \_\_\_
- 175) preparing and delivering presentation of patient case or journal article \_\_\_
- 176) preparing and delivering appropriately pitched group advice \_\_\_

***LO – Team Working***

- 177) working as a team member within the dietetic department \_\_\_
- 178) appreciating the role of the dietitian within a team and using the contribution of other members to aid service delivery \_\_\_

***LO – Service Delivery***

- 179) reviewing research from appropriate sources that is relevant to conditions that arise \_\_\_
- 180) appreciating how research and other information can inform practice \_\_\_

***Other Learning Opportunities***

- 181) listening actively \_\_\_
- 182) demonstrating empathy \_\_\_
- 183) developing their clinical reasoning skills \_\_\_
- 184) developing their confidence during practice placement education \_\_\_
- 185) rehearsing during practice education \_\_\_
- 186) engaging in reflective practice \_\_\_



**In the following questions, the term ‘peer learning’ will represent an umbrella term incorporating collaborative learning, peer observation and peer feedback.**

187) To what extent was peer learning most useful for students during the following periods of practice placement C:

Beginning:	Not at all <input type="checkbox"/>	A little <input type="checkbox"/>	A lot <input type="checkbox"/>
Midway:	Not at all <input type="checkbox"/>	A little <input type="checkbox"/>	A lot <input type="checkbox"/>
End:	Not at all <input type="checkbox"/>	A little <input type="checkbox"/>	A lot <input type="checkbox"/>

188) Peer feedback only worked well when students were willing to participate:

Very much agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neither agree nor disagree <input type="checkbox"/>	Disagree <input type="checkbox"/>	Very much disagree <input type="checkbox"/>
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189) The following promoted willingness from students: (please give examples of why students would want to participate in the peer learning process):

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190) Students were well prepared in college for engaging in peer learning on placement:

Very much agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neither agree nor disagree <input type="checkbox"/>	Disagree <input type="checkbox"/>	Very much disagree <input type="checkbox"/>
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191) What else would have been useful for preparing students to engage in peer learning?

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192) I (the educator) was well prepared by college for facilitating peer learning on placement:

Very much agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neither agree nor disagree <input type="checkbox"/>	Disagree <input type="checkbox"/>	Very much disagree <input type="checkbox"/>
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193) What prepared you most for facilitating in peer learning?

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194) What else would have been useful for preparing you to facilitate in peer learning?

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195) What, if any, were your fears or concerns about facilitating a peer (2:1) learning based placement?

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---

and were they realised during PPC?

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---

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196) The 2:1 peer learning model would be likely to work better in:

PPB  PPC  No difference  Don't know

Further comment:

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197) The 2:1 peer learning model worked better in:

an inpatient setting  an outpatient setting  No difference  Don't know

Further comment:

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198) Did you facilitate student-led completion of assessment forms during this placement?:

Yes  No  For some weeks

If so, did you find that this helped students develop competency during PPE?:

Yes  No  Unsure

Further comment:

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**Any further comments/observations:**

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**Thank you, your participation is very much appreciated.**

## **Appendix 8: Interview structure**

### Interview structure for students

Open Question: How did you find PPB/PPC? Or, Will you tell me about your placement?
How did you find the 2:1 model/how did the 2:1 model work?
How did you find working with your partner?
What worked well?
What didn't work so well?
Were you well prepared in college for using the 2:1 model? (prompts for what worked well?, what else would have been useful?)
What elements of the 2:1 approach did you find useful during PPE? (prompts for collaborative learning, peer observation, peer feedback)
Do you think that you learned as much as you would have on a 1:1 placement (prompt why?)

## Interview structure for practice educators

Open Question: How did you find PPB/PPC?
How did you find the 2:1 model/how did the 2:1 model work?
How did you find that the students worked together?
What worked well?
What didn't work so well?
Were the students well prepared for using the 2:1 model? (prompts for what worked well?, what else would have been useful?)
Were you well prepared for using the 2:1 model? (prompts for what worked well?, what else would have been useful?)
What elements of the 2:1 approach were useful for students during PPE? (prompts for collaborative learning, peer observation, peer feedback)
Do you think that the students learned as much as they would have on a 1:1 placement (prompt why?)

**Appendix 9: Schedule of Interactive Training Sessions for Students and Practice Educators using The Lynam Framework for the facilitation of a collaborative peer learning 2:1 Model of practice placement education**

## **Schedule of Interactive Training Sessions for Students and Practice Educators using The Lynam Framework for the facilitation of a collaborative peer learning 2:1 Model of practice placement education**

**Ann-Marie Lynam – Practice Education Coordinator, Nutrition & Dietetics, TCD**

- A spiral curriculum (Practice Placement A, B, C in consecutive years versus previous programmes with all practice placement education in final year)
  - Shift from didactic learning to more integrated approach/student directed learning
  - Modified Kolb Learning Cycle (theory, practice, reflection, rehearsal)
  - Enhanced participation and performance in class during college based time between placements

Practical: Learning to drive a car using didactic versus integrated (modified Kolb model) approach

- Learning Outcomes, Performance Indicators and Competency Criteria
  - As per BSc Human Nutrition & Dietetics Programme (TCD/DIT)
  - Note focus on communication, professionalism and teamwork versus full focus on knowledge and practice.
  - Incorporation of reflective practice within this
- Reflective Practice
  - Brief overview of theories of reflective practice
  - Reasoning for facilitating reflection with students
  - Use of reflection for educator/practitioner continuous professional development
  - See work by Fade S. Reflection and assessment. In: Tate S, Sills M, eds. The Development of Critical Reflection in the Health Professions. London: Higher Education Authority, 2004; 96–100

Practical – Use of a scenario for each participant to complete student reflection log. May do so in groups, discuss what works well and not well. Trouleshooting around best time to reflect, reflection in action etc

- Student-led completion of assessment forms
  - Rationale for introducing
  - Benefits (see attached document)

Practical – Participants split into groups and complete different components of the form. Then practice facilitating feedback with alternative groups on the completion of the form.

- A collaborative peer learning 2:1 model of practice placement education
  - Explanation of terms collaborative learning, peer observation and peer feedback and umbrella term of peer learning.  
Collaborative learning – indirect teaching in which the instructor identifies the task and organises the students to work out a solution, interdependently of the educator  
Peer Observation – one student observing the other student and sharing those observations e.g. scripting  
Peer Feedback – formative feedback from one student to another (i.e. not assessment) (DeClute & Ladyshefsky, 1993; CSP, 2002)
  - Benefits and challenges of using such a model, literature review (based on published paper)
  - Brief overview of results of pilot study to trial the model and subsequent development of framework
  
- The Lynam Framework
  - Scenario 1
  - Scenario 2
  - Scenario 3

Discuss all three in detail, use examples, use detail in published paper and make relevant to participants attending training

- Facilitation of Feedback
  - Positive Feedback (+) versus Negative Feedback (-) otherwise known as Constructive Criticism

Practical – The dynamics of + versus – feedback 1) to a friend 2) healthcare professional 3) yourself 4) that you are most likely to remember.

- If feedback is 'Fluffy' it is not clear. What has been done well or not is not clearly explained, give examples ('That was grand', 'That wasn't too bad', 'That was good for a student'). This is unhelpful as students may not know what aspect of their consultation went well/not well and most importantly, why.
- Need to explain clearly and directly what exactly was done well ('what went well') or what would be done differently to improve a particular aspect ('what you'd change')



- Feedback sandwich model (+ - +) is not recommended as the – tends to get lost in the middle of the + and there is a tendency to ‘fluff’ up the +

Practical – All participants rate examples of feedback as either fluffy or non-fluffy and how they might change fluffy into non-fluffy and vice versa

- Balanced + feedback and – feedback should instead be facilitated. E.g. ‘Student A suggest one aspect of the previous consultation that went well for you’; ‘Student A suggest one aspect of this assessment that you would change and why’

Practical – All participants give examples of how an educator/student might ensure feedback is facilitated in a balanced, fair and useful way

- Ground rules need to be established prior to feedback. E.g. a brief feedback session will take place after each patient consultation (this is advised if at all possible, rather summarising at the end of the day), the student who takes the lead during the consultation will commence the feedback, the educator will facilitate rather than lead the feedback, only adding in where the students omit to avoid unnecessary repetition, it will be done in relative privacy away from the patient/client, a specified number of + and – feedback will be required, participation in feedback process is mandatory

Practical – Examples of useful groundrules that educators/students would recommend in different clinical settings

- How to use the ISBI model when a student is not comprehending more subtle feedback regarding professionalism/behaviour

Practical – Divide participants into groups. Allow each group to choose a ‘problem’ behaviour, give ideas e.g. an ‘overconfident’ student, an ‘underconfident’ student, an ‘uninterested’/‘unresponsive’ student

E.g. An ‘overconfident’ student. Explain overconfidence is not a behaviour, it is an interpretation. What is a student actually doing/not doing to make an educator interpret their behaviour as ‘overconfident’.

<b>Intention/Source</b>	<b>Behaviour (verb)</b>	<b>Interpretation</b>
<i>Masking nervous disposition</i>	<i>Advising patients on nutrition care plan without consultation/agreement with educator</i>	<i>Overconfident</i>
<i>Wishing to appear interested/motivated/confident</i>	<i>Not listening to educator</i>	<i>Rude</i>
<i>Does not respect educator</i>	<i>Talking at same time as</i>	<i>Not interested</i>

	<i>peer/educator</i>	
<i>Unable to concentrate due to personal problems</i>		<i>'Knows it all'</i>
		<i>Lack of respect for educator/peer</i>

This model needs to be explained correctly on how and most importantly when to use it. How to construct a clear 'feedback statement' to use with a student who has not comprehended previous attempts at feedback regarding their behaviour.

- Behavioural Change

- All practicing dietitians in Ireland may apply to do a series of Behavioural Change Training Sessions run by Ms Dympna Pearson  
<http://www.bctonline.co.uk/dympna-pearson.html>
- These are financially supported by the Irish Nutrition and Dietetic Institute and the Irish Health Service Executive (HSE)
- With permission, the principles of the Level One training course are briefly revised during training sessions with educators and students, with some practical work also. The principles are outlined in Rapoport L, Pearson D. Changing Health Behaviour. In: Thomas B, Bishop J, eds. Manual of Dietetic Practice. London: Blackwell Publishing, 2007; 46–58.
- The practice of scripting is done as a practical for both students and educators.
- **'Scripting'** is where e.g. Student B writes verbatim what Student A has said to the patient. It includes any verbal communication like 'eh', 'em', 'what I mean is', i.e. not just the thrust of the conversation. It also includes comments on non-verbal communication. e.g. Student A not making eye contact, looked at floor etc. It is if you like, instead of videoing the students (which would do in an ideal world if we had recording studios set up like some professional programmes have access to). For practice at behavioural change, I also get the students to identify 'behavioural change' components as part of this, e.g. that was a 'verbal follow' or a 'summary' or a 'reflection', as part of scripting.