
Faculty of Human and Social Development

Faculty Publications

Characteristics and processes of the dedicated education unit practice education model for undergraduate nursing students: a scoping review

Lenora Marcellus, Darlaine Jantzen, Robin Humble, Diane Sawchuck, Carol Gordon
2021

© 2021 Marcellus et al. This is an open access article distributed under the terms of the Creative Commons Attribution License. <https://creativecommons.org/licenses/by-nc-nd/4.0/>

This article was originally published at:

<https://doi.org/10.11124/JBIES-20-00462>

Citation for this paper:

Marcellus, L., Jantzen, D., Humble, R., Sawchuck, D., Gordon, C. (2021). Characteristics and processes of the dedicated education unit practice education model for undergraduate nursing students: a scoping review. *JBI Evidence Synthesis*, Volume 19 (Issue 11), p. 2993-3039. doi: 10.11124/JBIES-20-00462

OPEN

Characteristics and processes of the dedicated education unit practice education model for undergraduate nursing students: a scoping review

Lenora Marcellus^{1,2} • Darlaine Jantzen^{2,3} • Robin Humble^{2,4} • Diane Sawchuck^{2,5} • Carol Gordon^{2,6}

¹School of Nursing, University of Victoria, Victoria, BC Canada, ²The University of Victoria (UVic) Centre for Evidence-Informed Nursing and Healthcare (CEiNHC): A JBI Centre of Excellence, University of Victoria, Victoria, BC, Canada, ³School of Nursing, Trinity Western University, Langley, BC, Canada, ⁴Department of Nursing, Camosun College, Victoria, BC, Canada, ⁵Research and Capacity Building, Island Health, Victoria, BC, Canada, and ⁶Libraries, University of Victoria, Victoria, BC, Canada

ABSTRACT

Objective: The objective was to review literature related to the dedicated education unit practice education model for undergraduate nursing students, and identify common characteristics and processes for implementing and sustaining this model.

Introduction: Although practice education is central to undergraduate nursing education, evidence-informed practices for learning in the clinical setting remain elusive. Changes to health care over the past decades related to the role and scope of practice for nurses, gradual shifts to community- and population-based care delivery, and expectations for interprofessional practice require forward-looking education models. The dedicated education unit model was developed in 1997 as a potential solution to globally recognized challenges in nursing education amidst discourses of nursing resource scarcity. Despite more than two decades of innovation and expansion, there is still limited understanding of the effectiveness of the dedicated education unit as a solution to those challenges, or for the anticipated benefits for students and patients, through enhanced evidence-informed health care. This analysis of the characteristics and processes of the model is timely for evaluating and sustaining implementation of the dedicated education unit across nursing practice and education settings.

Inclusion criteria: English-only publications related to the dedicated education unit practice education model for undergraduate nursing students in baccalaureate and associate degree programs using qualitative, quantitative, or mixed methods research, and quality improvement, program evaluation, and opinion publications were included.

Methods: Using selected keywords including “dedicated education unit,” we searched CINAHL, Google Scholar, MEDLINE, Academic Premier Search, ERIC, Cochrane Database of Systematic Reviews, JBI EBP Database, and ProQuest Dissertations and Theses. Two independent reviewers screened titles and abstracts against inclusion criteria. We reviewed reference lists for gray literature and additional references. Data were extracted from the included articles and categorized for characteristics and processes. Eighty-two publications from January 1997 to May 2020 were included. The findings were presented descriptively with tables and figures to support the data.

Results: Dedicated education unit models were based on five characteristics and four processes. Characteristics of the dedicated education unit model included effective academic-practice partnership, adaptability to diverse contexts, unit culture of educational excellence, responsive and supportive unit leadership, and clarity of roles and responsibilities. Processes included building nurse and faculty capacity, facilitating student learning, communicating regularly at systems and unit levels, and evaluating and sustaining the model.

Conclusions: Evidence demonstrated that the dedicated education unit practice education model is well-established. However, there were existing gaps in this evidence, specifically evaluation and economic analyses. There was also limited attention to long-term sustainability of the model. The common characteristics and processes identified in this review may be used to support planning, implementation, and evaluation, including development and validation of evaluation tools. Although administrative infrastructure was noted as central to the dedicated education unit strategy, it was rarely acknowledged as part of management and thus also requires further study.

Correspondence: Lenora Marcellus, lenoram@uvic.ca

The authors declare no conflict of interest.

This is an open access article distributed under the terms of the Creative Commons Attribution-Non Commercial-No Derivatives License 4.0 (CCBY-NC-ND), where it is permissible to download and share the work provided it is properly cited. The work cannot be changed in any way or used commercially without permission from the journal.

DOI: 10.11124/JBIES-20-00462

Keywords: characteristics; dedicated education unit; practice education model; processes; undergraduate nursing student

JBI Evid Synth 2021; 19(11):2993–3039.

Introduction

The establishment of nursing as an academic discipline in post-secondary settings stimulated rapid progress in the development of theoretical nursing knowledge and its application into practice.^{1,2} Contemporary nursing education programs incorporate both theoretical and experiential knowledge, and are aimed at the development of professional competencies through acquiring and integrating this knowledge into nursing practice.^{3–5} The quality of clinical experiential learning has a significant impact on preparation for professional practice.^{6,7} There is accumulating evidence pointing to traditional clinical education processes and models not keeping pace with changes in demographics, the health system, and scientific advances.⁸ Thus, new graduate nurses report feeling unprepared for the full scope and complexity of current nursing practice, and employers continue to express concerns that new graduates are not practice ready.^{9–11}

Some nurse educators argue that dominant clinical practice models are misaligned with contemporary health care realities including shifts in the role and scope for nurses, re-alignment of the health care system to community-based and population-based care delivery, and interprofessional and team-based practice.^{3–5} As such, nursing education leaders have called for the transformation of clinical education models.⁶ Many clinical education approaches have been described in the literature. For example, Budgen and Gamroth¹² identified and critically analyzed the benefits and limitations of 10 different approaches, including faculty-supervised practicums, preceptorships, and education units. However, clinical practice education has only modestly changed in the past few decades, despite calls to action, critique, and numerous attempts at innovations^{13–19}

Pioneered in Australia, the dedicated education unit (DEU) is one innovation in practice education that was designed to provide optimal learning for students, increase access to practice placements, ease transition to graduate roles, and build capacity for implementing best practice and a culture of evidence and research.^{20,21} Within this model, these outcomes

are achieved through strategic collaboration between practice and education sectors. The DEU model has transformed patient care units into learning environments for nursing students *and* point-of-care nurses by promoting students' readiness to practice while continuing the critical work of providing quality care.^{22–24} As this model continues to grow in popularity, a review of literature related to key characteristics and processes of the DEU is timely and essential.

In a preliminary search for existing scoping and systematic reviews (January 3, 2018) in PROSPERO, MEDLINE, CINAHL, the Cochrane Database of Systematic Reviews, and the *JBI Database of Systematic Reviews and Implementation Reports*, no current or in-progress systematic reviews on this topic were identified. Fifty-three relevant publications were initially identified, suggesting there was enough evidence to support a scoping review. After this preliminary search and publication of our protocol, we noted publication of another JBI protocol by Harris,²⁵ "Dedicated education units as a clinical rotation for nursing students: a scoping review protocol." However, the protocol focused on student and nurse perceptions and outcomes, which will be complementary to this focus on characteristics and processes.

The published protocol for this scoping review employed the term "collaborative learning unit" to represent a particular practice education model.²⁶ During the process of data extraction, it was noted that "dedicated education unit" was the most frequently employed term to identify this practice model, based on the work of Edgcombe *et al.*²⁰ and Gonda *et al.*²¹ in Australia. For clarity and consistency of language throughout this article, and effective title and keyword searching, the terminology in this publication has been adapted. In consultation with JBI, the term "dedicated education unit" replaces "collaborative learning unit" and will be used throughout the remainder of this review. This adaptation did not affect the search strategy because the "dedicated education unit" was previously included as a search term.

The findings from this scoping review will be used to guide future directions for research and program development related to essential characteristics and processes for developing, expanding, sustaining, and evaluating education using this practice education model.

Review question

What evidence is available that describes characteristics and processes of the DEU practice education model for undergraduate nursing students?

Inclusion criteria

Participants

This review considered publications related to undergraduate nursing students preparing for the role of registered nurse (RN), including baccalaureate and associate degree programs. Participants were identified by different terms depending on the country, including pre-registration or pre-licensure students. Publications that included licensed practical nursing students or residential care aide students were excluded.

Concepts

Publications outlining characteristics and processes of the DEU model were included. In addition to the most commonly used term, DEU, the preliminary search identified other terms in the literature representing a similar clinical practice education model, including collaborative learning unit, dedicated learning unit, dedicated education learning unit, team preceptorship, clinical teaching unit, student ward, learning community, and collaborative cluster. For the purpose of this review, we began with the following definitions:

Dedicated education unit: a health care unit where education, in addition to patient care, is a primary function. Students are responsible for their learning and peer teaching. Registered nurses are responsible for overall patient care and mentoring students. Faculty ensure that students have relevant learning opportunities and evaluate student progress.¹²

Characteristics: typical or noticeable qualities of something.²⁷

Processes: sequences of interdependent and linked actions taken to achieve known outcomes or results.²⁸

Context

This review considered publications that described the DEU within health system and community contexts where undergraduate nursing students learned to practice. These contexts included, but were not limited to, hospitals, public health, home care, and community agencies. There were no geographical limits to the contexts or settings.

Types of sources

This scoping review considered both experimental and quasi-experimental study designs, including randomized controlled trials, non-randomized controlled trials, before and after studies, and interrupted time series studies. In addition, analytical observational studies, including prospective and retrospective cohort studies, case-control studies, and analytical cross-sectional studies were considered for inclusion. This review also considered descriptive observational study designs, including case series, individual case reports, and descriptive cross-sectional studies.

Qualitative studies were considered, including designs such as phenomenology, grounded theory, ethnography, qualitative description, action research, and feminist research. Mixed methods studies were also included. In addition, systematic reviews, program evaluations, and quality improvement reports that met the inclusion criteria were considered. Text and opinion publications were considered for inclusion if they were published in peer-reviewed academic journals and met the review objective. Dissertations and theses were included if they met the review objective. Conference papers were not included.

The search for gray literature was limited to websites for national and international nursing education organizations and nursing organizations referenced in included publications.

Methods

This review was conducted in accordance with the JBI methodology for scoping reviews²⁹ based on the published protocol.²⁶

Search strategy

The search strategy aimed to locate peer-reviewed articles, unpublished dissertations and theses, and national nursing education documents. A three-step search strategy was utilized in this review. First, an initial limited search of CINAHL was undertaken (January 3, 2018) to identify sources on the topic. The text words contained in the titles and abstracts of relevant sources, and the index terms used to describe the sources, were used to develop a full search strategy (see Appendix I). The second step (July 11, 2018) included applying all identified keywords and index terms to each included database. An additional search was conducted on May 13, 2020, to identify articles published after July 11, 2018. Finally, reference lists of articles included in the review were screened for additional relevant studies and gray literature.

Sources published in English were included and non-English sources with an English abstract were counted. Studies published from 1997 onward were included because this was the date of the first publication related to this model of practice education. Although 1999 was established in the published protocol as the initial year for the search,²⁶ during the reference checking process, a 1997 article was located employing the DEU term³⁰; therefore, this scoping review drew on publications from 1997 to 2020.

The databases searched included CINAHL Complete (EBSCO), Google Scholar, MEDLINE with Full Text (EBSCO), Academic Premier Search (EBSCO), Cochrane Database of Systematic Reviews (Ovid), ERIC (EBSCO), and the JBI EBP Database (Ovid). ProQuest Dissertations and Theses was searched for unpublished studies. The search for gray literature included the International Council of Nurses, World Health Organization, and targeted national nursing education organizations from countries with sources in this review, including the American Association of Colleges of Nursing, the Australian College of Nursing, the Canadian Association of Schools of Nursing, and New Zealand Nursing Education in the Tertiary Sector.

Study selection

Following the search, all identified citations were entered into EndNote v.X8 (Clarivate Analytics, PA, USA) and duplicates were removed. Collated titles and abstracts were compiled in an inclusion/exclusion MS Excel spreadsheet (Redmond, WA, USA).

Titles and abstracts were screened by two independent reviewers (LM and DJ) for assessment against the inclusion criteria (participants, DEU model, health system and community context, and types of sources). Collated full-text publications were uploaded to the JBI System for the Unified Management, Assessment and Review of Information (JBI SUMARI; JBI, Adelaide, Australia).³¹ Any disagreements that arose between the reviewers were resolved through discussion or with a third reviewer (RH). Papers that did not meet the inclusion criteria were excluded. Reasons for exclusion are provided in Appendix II.

Data extraction

Data were extracted from publications included in the scoping review by one reviewer (RH) and corroborated independently by two other reviewers (LM and DJ) using the data extraction tool developed by the reviewers. The draft data extraction tool was refined during the process of extracting data from each included publication. The data extracted included specific details about the location of sources, year of publication, area of focus, publication type, practice education model terminology, level and type of undergraduate student education, practice setting, and key findings relevant to the review objective. Any disagreements or discrepancies were resolved through discussion. When key data were not clear in the publications, authors were contacted. During data extraction, two authors were contacted for clarification about data in their publications. Responses were received that confirmed exclusion of the sources.

Data analysis and presentation

Each source was independently read by three reviewers (LM, DJ, RH) and analyzed for descriptions of characteristics and processes. Data related to year of publication, type, and focus of publication were summarized in narrative form and one bar chart. Data related to article characteristics, and characteristics and processes of the DEU model from included articles were extracted and recorded verbatim. Through tabular and visual mapping processes, data were collated and grouped together into key article characteristics and core DEU model characteristics and processes. The extracted data are provided in Appendix III and presented in figures, tables, and a narrative summary to describe how the results relate to the review objective and questions.

Results

Study inclusion

A Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram³² showing details of the article search, selection, and

inclusion process is provided in Figure 1. A total of 455 potential citations were identified through the systematic search of the information sources previously identified. The search for gray literature did not identify any additional citations. There were

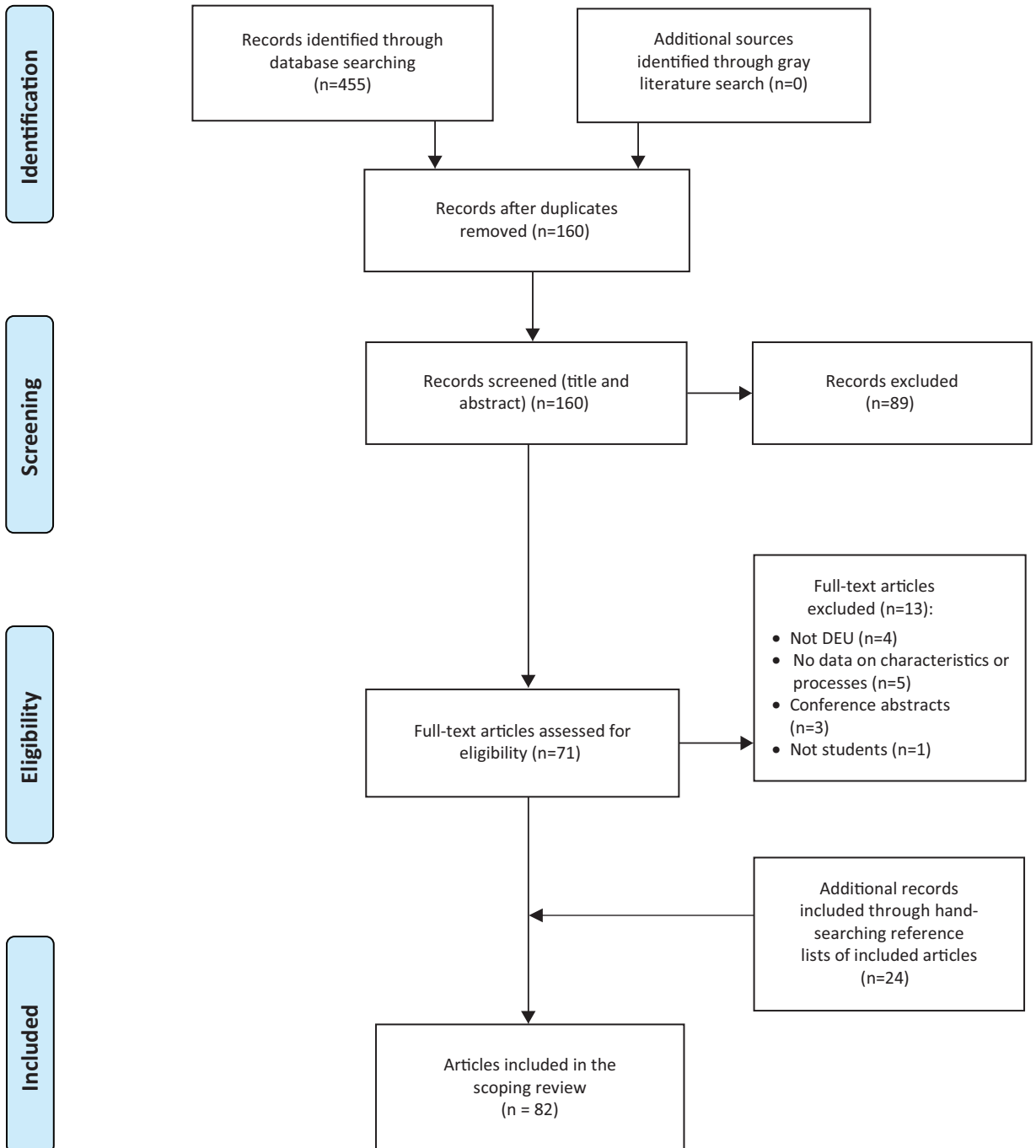


Figure 1: Search results and publication selection and inclusion process³²

no non-English language studies to count. After removing duplicates ($n = 295$), 160 publications remained for title and abstract screening, of which 71 progressed to full-text review. After full-text review, 13 articles were excluded because they did not meet the inclusion criteria (Appendix II), leaving 58 records eligible for inclusion. An additional 24 records were included after hand-searching reference lists of included articles. In total, 82 articles met

the eligibility criteria and were included for data extraction.

Characteristics of included articles

An overview of article characteristics, including geographical location of sources, year of publication, area of focus, publication type, and practice setting, are found in Table 1.^{12,18,20,21,23,24,29,33-107}

Table 1: Summary of practice education terminology from included publications

Author Year Country	Area of focus	Publication type	Terminology: practice education model; level and type of undergraduate education	Practice setting
Auxier (2018a) US ³³	Role description	Program description	Dedicated education unit Undergraduate	Acute care, post-acute care, community care
Auxier (2018b) US ³⁴	Nurse experience	Quantitative research	Dedicated education unit Undergraduate	Post-acute care, obstetrics, pediatrics, behavioral health
Betony (2013) New Zealand ³⁵	Student learning	Literature review	Dedicated education unit Undergraduate Y1–3	Primary health care
Budgen (2008) Canada ¹²	Description of practice models	Literature review	Education unit Undergraduate	Complex care
Burke (2011) US ³⁶	Development and implementation	Program description	Dedicated education unit Undergraduate	Medical surgical
Callaghan (2009) Canada ³⁷	Student experience	Qualitative research	Collaborative learning unit Undergraduate Y3,4	Not specified
Castner (2012) US ³⁸	Patient outcome or experience	Quantitative research	Dedicated education unit Undergraduate	Tertiary care hospitals
Chmura (2016) US ³⁹	Development and implementation	Qualitative research	Dedicated education unit Prelicensure Senior	Hospice, palliative care
Claeys (2015) Belgium ⁴⁰	Student learning	Qualitative research	Dedicated education unit Undergraduate Y4	Hospital, residential care, psychiatric hospital
Crawford (2018) New Zealand ⁴¹	Student experience Nurse experience	Mixed methods research	Dedicated education unit Undergraduate Y3	Surgical and vascular, heart and lung, rehabilitation

Table 1: (Continued)

Author Year Country	Area of focus	Publication type	Terminology: practice education model; level and type of undergraduate education	Practice setting
Dapremont (2013) US ⁴²	Development and implementation	Program description	Dedicated education unit Undergraduate Baccalaureate	Hospital
Dean (2013) US ⁴³	Development and implementation	Program description	Dedicated education unit Undergraduate Baccalaureate	Tertiary cancer centre
DeMeester (2012) US ⁴⁵	Faculty experience	Qualitative research	Dedicated education unit Prelicensure Baccalaureate	Hospital inpatient
DeMeester (2016) US ⁴⁴	Faculty experience	Qualitative research	Dedicated education unit Prelicensure Baccalaureate	Hospital inpatient
DEU project team (2008) New Zealand ⁴⁶	Development and implementation	Program description	Dedicated education unit Undergraduate Baccalaureate	Hospital, acute care, surgical
Devereaux Melillo (2014) US ⁴⁷	Development and implementation	Mixed methods research	Dedicated education unit Prelicensure Baccalaureate	Long-term care, post-acute, short stay, rehabilitation
Dorcy (2016) US ⁴⁸	Development and implementation	Program description	Dedicated education unit Baccalaureate Senior	Ambulatory oncology
Dyar (2019) Sweden ¹⁸	Student learning	Qualitative research	Student ward Term 3 and 6	Acute medical
Edgecombe (1999) Australia ²⁰	Development and implementation	Program description	Dedicated education unit Undergraduate	Not specified
Eskilsson (2015) Sweden ⁴⁹	Patient experience or outcome	Qualitative research	Dedicated education unit Nursing students	Orthopedics
Fox (2017) US ⁵⁰	Development and implementation	Literature review	Dedicated education unit Baccalaureate	Long-term care
Freundl (2012) US ⁵¹	Development and implementation	Program description	Dedicated education unit Undergraduate Baccalaureate Prelicensure	Long-term care, palliative, home-based primary care, surgical, perioperative, preadmission clinic

Table 1: (Continued)

Author Year Country	Area of focus	Publication type	Terminology: practice education model; level and type of undergraduate education	Practice setting
Galuska (2015) US ⁵²	Student learning	Mixed methods research	Dedicated education unit Undergraduate	Medical, surgical
George (2017) US ⁵³	Student learning	Quantitative research	Dedicated education unit Undergraduate	Acute care
Glazer (2011) US ⁵⁴	Development and implementation	Program description	Dedicated education unit Undergraduate Junior Senior	Trauma, surgical, medical step-down
Glynn (2017) US ⁵⁶	Nurse experience	Qualitative research	Dedicated education unit Undergraduate Baccalaureate	Not specified
Glynn (2019) US ⁵⁵	Nurse experience	Quantitative research	Dedicated education unit Baccalaureate Senior	Acute care, medical
Gonda (1999) Australia ²¹	Student experience Nurse experience	Qualitative research	Dedicated education unit Undergraduate	Medical, high acuity medical surgical
Gordon (2020) US ⁵⁷	Faculty experience	Qualitative research	Dedicated education unit Baccalaureate Prelicensure	Not specified
Goslee (2020) US ⁵⁸	Development and implementation	Mixed methods research	Dedicated education unit Associate degree nursing students	Rural primary care
Grealish (1997) Australia ²⁹	Development and implementation	Quantitative research	Dedicated education unit Undergraduate Final year	Not specified
Grealish (2004) Australia ⁵⁹	Development and implementation	Qualitative research	Dedicated education unit Undergraduate Y3,4	In-patient cancer care
Hannon (2012) US ⁶⁰	Development and implementation	Qualitative research	Dedicated education unit Nursing students	Hospital, acute care
Harmon (2013) US ⁶¹	Development and implementation	Program description	Dedicated education unit Undergraduate	Rural hospital, medical, surgical, emergency room, operating room, obstetrics
Heidelberg (2017) US ⁶²	Student learning	Quantitative research	Dedicated education unit Undergraduate	Not specified

Table 1: (Continued)

Author Year Country	Area of focus	Publication type	Terminology: practice education model; level and type of undergraduate education	Practice setting
Heiskell (2019) US ⁶³	Student learning	Quantitative research	Dedicated education unit Undergraduate Baccalaureate Junior	Medical, surgical
Hunt (2015) US ⁶⁴	Development and implementation	Program description	Dedicated education unit Baccalaureate Junior, senior	Medical, surgical
Jayasekara (2018) Australia ⁶⁵	Student learning	Literature review	Clinical education unit Undergraduate	Acute care
Jeffries (2013) US ⁶⁶	Development and implementation	Program description	Clinical academic practice partnership Baccalaureate	Not specified
Jones (2017) US ⁶⁷	Nurse experience	Quantitative research	Dedicated education unit Baccalaureate	Medical, surgical
Koharchik (2017) US ⁶⁸	Nurse experience	Qualitative research	Dedicated education unit Baccalaureate Senior	Critical care
Krampe (2013) US ⁶⁹	Role description	Program description	Dedicated education unit Accelerated BSN	Medical, surgical
Lloyd-Ponza (2019) US ⁷⁰	Student learning	Qualitative research	Veterans Affairs' nursing Academic partnership Learning community Undergraduate Junior, sophomore	Medical, surgical
McKown (2011) US ⁷¹	Student learning	Mixed methods research	Dedicated education unit Second degree BSN	Acute care, neurology, orthopedics
Masters (2016) US ⁷²	Student learning	Mixed methods research	Dedicated education unit Undergraduate Baccalaureate	Medical, acute care
Miller (2005) US ²⁴	Development and implementation	Quantitative research	Dedicated education unit Undergraduate Baccalaureate Master BSN – prelicensure component	Acute care, medical, surgical, oncology

Table 1: (Continued)

Author Year Country	Area of focus	Publication type	Terminology: practice education model; level and type of undergraduate education	Practice setting
Moore (2013) US ⁷³	Student experience	Quantitative research	Dedicated education unit Undergraduate Baccalaureate Junior, senior	Medical, surgical
Moscato (2007) US ²³	Development and implementation	Program description	Dedicated education unit Baccalaureate Junior, senior	Medical, surgical
Moscato (2013) US ⁷⁴	Development and implementation	Program description	Dedicated education unit Undergraduate Baccalaureate	Oncology, intensive care, neurology, long-term care, emergency room, pediatric, maternity, medical, surgical, psychiatric
Mullenbach (2012) US ⁷⁵	Development and implementation	Mixed methods research	Dedicated education unit Undergraduate Baccalaureate	Long-term care, assisted living, hospice, senior center, adult daycare, agencies on aging
Mulready-Shick (2009) US ⁷⁸	Student learning	Qualitative research	Dedicated education unit Undergraduate	Acute care
Mulready-Shick (2013) US ⁷⁷	Student learning Student experience	Quantitative research	Dedicated education unit Nursing students Junior, senior	Acute care, medical, surgical
Mulready-Shick (2014) US ⁷⁶	Sustainability	Mixed methods research	Dedicated education unit Baccalaureate Junior	Medical, surgical
Murray (2011) US ⁷⁹	Partnership	Program description	Dedicated education unit Undergraduate	Not specified
Murray (2010) US ⁸⁰	Development and implementation	Program description	Dedicated education unit Baccalaureate	Cardiac progressive, pediatrics
Nguyen (2020) Australia ⁸¹	Partnership	Literature review	Dedicated education unit Nursing students	Acute care
Nishioka (2014a) US ⁸²	Student experience	Mixed methods research	Dedicated education unit Baccalaureate Associate degree Junior, senior	Acute care

Table 1: (Continued)

Author Year Country	Area of focus	Publication type	Terminology: practice education model; level and type of undergraduate education	Practice setting
Nishioka (2014b) US ⁸³	Nurse experience	Mixed methods research	Dedicated education unit Baccalaureate Associate degree Junior, senior Second-degree Master of Nursing – prelicensure component	Acute care, medical, surgical, psychiatric, community, obstetrics, gynecology, pediatrics
O'Lynn (2013) US ⁸⁴	Development and implementation	Mixed methods research	Dedicated education unit Undergraduate Baccalaureate Direct-entry prelicensure Master of Nursing	Long-term care
Parker (2012) US ⁸⁵	Development and implementation	Quantitative research	Dedicated education unit Baccalaureate	Inpatient acute care
Pfannes (2019) US ⁸⁶	Sustainability	Guide	Dedicated education unit Undergraduate	Not specified
Plemmons (2018) US ⁸⁷	Student learning	Quantitative research	Dedicated education unit Baccalaureate	Not specified
Polvado (2015) US ⁸⁸	Development and implementation	Mixed methods research	Dedicated education unit Undergraduate Prelicensure	Medical, surgical
Raines (2016) US ⁸⁹	Development and implementation	Program description	Dedicated education unit Undergraduate Baccalaureate Junior, Year 3	Maternal-newborn
Ranse (2007) Australia ⁹⁰	Student experience	Qualitative research	Dedicated education unit Baccalaureate Y2,3	Not specified
Rhodes (2012) US ⁹¹	Student experience Faculty experience Nurse experience	Mixed methods research	Dedicated education unit Undergraduate	Adult medical, surgical
Rusch (2018a) US ⁹²	Student learning	Quantitative research	Dedicated education unit Baccalaureate Senior	Acute care

Table 1: (Continued)

Author Year Country	Area of focus	Publication type	Terminology: practice education model; level and type of undergraduate education	Practice setting
Rusch (2018b) US ⁹³	Development and implementation	Program description	Dedicated education unit Undergraduate	Acute care, critical care, obstetrics, medical, surgical, mental health
Ryan (2011) US ⁹⁴	Development and implementation	Program description	Dedicated education unit Baccalaureate	Pediatrics
Saxton (2015) US ⁹⁵	Nurse experience Student experience	Qualitative research	Dedicated education unit Baccalaureate Junior	Medical-surgical intensive care unit
Schechter (2017) US ⁹⁶	Student learning	Quantitative research	Dedicated education unit Baccalaureate	Respiratory
Seibert (2016) US ⁹⁷	Role description	Qualitative research	Dedicated education unit Nursing students	Not specified
Sharpnack (2014) US ⁹⁸	Student learning	Quantitative research	Dedicated education unit Baccalaureate Second-degree accelerated	Acute care, medical, surgical, psychiatric community, obstetrics, gynecology, pediatrics
Smyer (2015a) US ⁹⁹	Role description	Program description	Dedicated education unit Registered nursing students	Medical, surgical
Smyer (2015b) US ¹⁰⁰	Student learning	Quantitative research	Dedicated education unit Registered nursing students	Medical, surgical
Springer (2012) US ¹⁰¹	Student learning Economic analysis	Mixed methods research	Dedicated education unit Baccalaureate Prelicensure	Medical, surgical
Terry (2019) US ¹⁰²	Development and implementation	Program description	Dedicated education unit Nursing students Upper division	Not specified
Tochterman (2016) US ¹⁰³	Patient outcome or experience	Quantitative research	Dedicated education unit Baccalaureate Prelicensure	Medical, surgical
Vnenchak (2019) US ¹⁰⁴	Student learning	Quantitative research	Dedicated education unit Baccalaureate	Acute care
Walker (2012) US ¹⁰⁵	Development and implementation	Mixed methods research	Dedicated education unit Baccalaureate Prelicensure	Medical, surgical

Table 1: (Continued)

Author Year Country	Area of focus	Publication type	Terminology: practice education model; level and type of undergraduate education	Practice setting
Warner (2009) US ¹⁰⁶	Development and implementation	Program description	Dedicated education unit Baccalaureate	Medical, surgical

Location of sources and year of publication

Articles from six countries included: 66 from the United States (US),^{23,24,33,34,36,38,39,42-45,47,48,50-58,60-64,66-80,82-89,91-106} eight from Australia,^{20,21,29,59,65,81,90,107} three from New Zealand,^{35,41,46} two from Canada,^{12,37} two from Sweden,^{18,49} and one from Belgium.⁴⁰ In the first decade of development, articles emerged from Australia, Canada, and the US. In the second decade, the DEU model expanded to New Zealand and Belgium. The number of annual publications on this topic have been increasing steadily since 2012, with a peak of 10 in 2013.

Practice model terminology

Seventy-six of the publications in this scoping review referred to the practice education model as a DEU. Other terminology included education unit,¹² student ward,¹⁸ collaborative learning unit,³⁷ clinical education unit,⁶⁵ clinical academic-practice partnership,⁶⁶ Veterans Affairs Nursing Academic Partnership learning community (Table 1).⁷⁰ In referring to the DEU model, Dyar *et al.* observed that regardless of the name, “settings have been specially adapted to student learning.”^{18(p.277)}

Terminology about level and type of undergraduate education

Nursing students were referred to by a range of terminology that reflected the country of origin and the range of program structures available for education delivery. Seven publications used the generic term “nursing student.”^{49,60,77,81,97,99,102} These sources were included because there was additional evidence to clarify that students met the inclusion criteria, including program context (eg, country, type of program), category of staff nurse, language of RNs as preceptors, or a companion article that included student information. Three publications that studied Master of Nursing students

were included because they also included information about programs with a prelicensure component.^{24,83,84} A summary of terminology related to level and type of undergraduate education and practice contexts is provided in Table 1.

Practice settings

This review included publications that described the DEU model within health settings where undergraduate nursing students typically engaged in practice (Table 1). The majority of DEUs (n = 54; 66%) were located in hospital medical or surgical settings. Seventeen publications included multiple practice settings. Fourteen articles did not identify a practice context.

Type and focus of publications

The following types of publications were included in this review: 52 research publications, 24 program descriptions, five literature reviews,^{12,35,50,65,81} and one thesis outlining a guide for development of a DEU.⁸⁶ There were 19 quantitative studies, 18 qualitative studies, and 15 mixed method studies. Eleven foci were noted across these publications (Table 1 and Figure 2). The most common foci were development and implementation of the DEU model (n = 32), followed by student learning (n = 20). Seven sources included more than one foci: Crawford *et al.* (student and nurse experience),⁴¹ Gonda *et al.* (student and nurse experience),²¹ Mulready-Shick *et al.* (student experience and student learning),⁷⁷ Rhodes *et al.* (student, nurse, and faculty experience),⁹¹ Saxton *et al.* (student and nurse experience),⁹⁵ Springer *et al.* (student learning and economic analysis),¹⁰¹ and Wotton and Gonda (student and nurse experience).¹⁰⁷

Review findings

This scoping review identified five characteristics and four processes that supported implementation

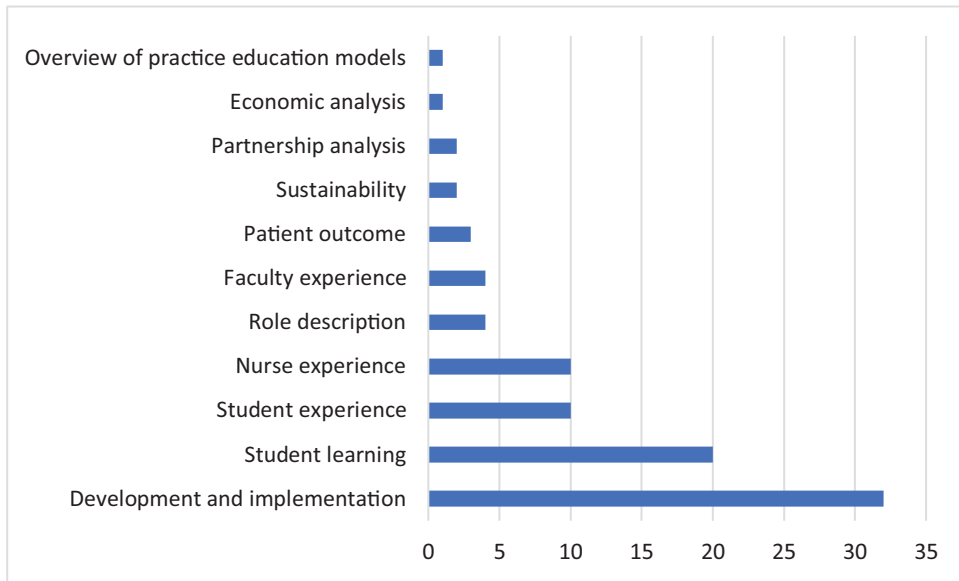


Figure 2: Number of publications related to the dedicated education unit practice education model, by substantive focus

and sustainability of the DEU practice education model. Extracted data are presented in Appendix III.

Characteristics

Effective academic-practice partnership

Forty-four (54%) publications included descriptions of at least one attribute of a cross-sectoral academic-practice partnership. Effective partnerships were reportedly based on a formal and concrete agreement between clinical and academic institutions, founded on a united commitment to enhance both student learning and quality clinical outcomes.

Attributes. Attributes of reported effective partnerships included collaboration,^{20,35,36,39,64,68,102} mutual respect,^{12,20,39,50,74,76,89,93,106} trust and goodwill,^{12,20,36,42,50,54,61,74,89,93,107} and equal voice.^{47,80} DeMeester⁴⁴ described a dyadic partnership where academic-service partners were committed to working together to build optimal practice environments for nursing students, teaching environments for nurses, and clinical environments for patient care. Students, faculty, and nurses were all considered valued partners who positively contributed to both education and practice processes and outcomes.⁷⁹

Shared governance structures. Academic-practice partnerships for DEU development were characterized by formal governance structures and shared visions. Governance was typically supported through

formal mechanisms such as: memoranda of understanding, agreements or contracts,^{42,44,48,80,86} alliances, oversight at the level of senior administration in the form of steering teams,^{44,51,80,106} and involvement of decision-makers who could move initiatives forward. Shared visions were reported to promote a culture of learning and providing quality nursing care, and included philosophies of trust and respect, missions, principles, goals, purposes, and strategic plans.^{23,24,36,44,45,47,54,57,66,67,75,77,79,86,89,98,101,105,107}

Fox⁵⁰ reported that, through the shared work of developing a DEU, the essence of the academic-practice relationship shifted from being competitive to being collaborative. In some cases, shared visions were linked to strategic priorities in both the academic and practice sector.^{51,54}

Sustained foundations. Mutual commitment to carefully sustaining strong structural foundations was reported.^{67,75,77} Thus, goals extended beyond planning and implementation to anticipating evaluation and sustainability.⁵⁴ This involved members of the academic-practice partnership being active, responsive to changes in each sector, and well-resourced.^{35,55,56,75,77,87,92,95,100} Despite clear

guidelines, a need was identified for ongoing dialogue through frequent meetings to address unforeseen issues or details.⁸⁰ Jeffries *et al.*⁶⁶ described development of an operations task force to maintain

infrastructure elements, such as an organizational chart, position descriptions, budget, and guidelines for clinical evaluation. Devereaux Melillo *et al.*⁴⁷ included a visual representation of their organizational structure in their description of the development of a DEU model in a long-term care setting. Similarly, O'Lynn⁸⁴ adapted the DEU model for a long-term setting and outlined the relationship between different academic and practice roles in a visual model. Overall, 14 publications specifically identified the formation of a joint governance group, operations group, task force, advisory committee, steering committee, leadership group, planning team, stakeholder team, working group, or action group to support development, implementation, expansion, and evaluation of the model.^{41,46,51,54,61,66,74,78,84,86,97,101,102,105}

Adaptability to diverse contexts

Adaptability was the capacity to implement the DEU model across a range of clinical contexts and to adjust the model over time in response to changing academic and practice requirements and resources. Twenty (24%) publications addressed adaptability by describing how the DEU model was adapted for specific practice contexts and how it was adapted to fit with unit or organizational culture and resources. Publications showed the expansion and adaptation of the DEU model to a range of practice settings (Appendix III). Factors such as student ratio, visit schedule, and the student assignment process were considered during planning for implementation of the DEU. Processes, roles, and logistics were then tailored by faculty and unit leaders to the unique needs of each local unit culture.^{45,99,100} Because each clinical unit had its own culture, implementation required flexibility.^{35,39,51,58,100} For example, Schecter *et al.*⁹⁶ required that a faculty member be present and working with the students and nursing staff at all times during the clinical rotations in a respiratory unit, compared with a community school DEU model where the clinical experience was supplemented with weekly site visits from faculty.³³

Unit culture of educational excellence

A positive unit culture of teaching and learning was an environment where education was deemed important within the context of a commitment to quality patient care. Thus, supporting student learning was considered foundational to the point-of-care

nursing role. This characteristic was identified in 56 (68%) publications. Learning was reported to be integrated as a “central part of daily life”^{18(p.279)} and developed through shared (academia and practice) investment in student learning, a unit-wide commitment to the teaching and learning process, and normalization of precepting, mentoring, and learning.^{20,33,54,77,84,92,96,99,100} Dyar *et al.*¹⁸ noted that positive learning environments were developed through personalized nurse-student relationships, peer learning, active student-led learning, unified interprofessional approaches to learning, and student-dedicated spaces. Warner and Burton¹⁰⁶ framed the learning enterprise as part of a shared formation environment that extended to include supporting the transition of new graduates.

Theoretical foundations. A number of theoretical foundations underpinned the creation of a positive teaching and learning environment. From a pedagogical perspective, nursing and education theories included Benner's novice to expert theory,^{96,98} Peplau's theory of interpersonal relationships,⁵⁷ Boychuk Duchscher's stages of transition theory and transition shock model,^{95,104} Berna's partners in caring model,⁴⁷ Ekeberghs' lifeworld didactics,⁴⁹ Kolb's experiential learning theory,⁵⁷ Bandura's social learning and self-efficacy theories,^{53,87} Hertzberg's motivator-hygiene theory of job satisfaction,³⁴ and community of practice or learning community models.^{51,60,88,90,97,103} Four publications referred to Knowles' principles of adult learning.^{61,89,90,97}

Student engagement. Students reported feeling protected and valued as members of the unit, and experienced enhanced critical thinking, knowledge transfer, and theory/practice integration.^{12,18,37,41,42,51,52,60,71,75,78,83,91,92,97,99} Authors reported that a culture of teaching and learning was noted to translate into improved nurse retention, increased quality of care, and increased confidence in teaching, which transferred to improved patient education.^{36,37,77,98,102} Some nurses reported that they were inspired to return to graduate school to become educators and advance their career.^{23,91}

Responsive and supportive unit leadership

In addition to partnership at systems levels, stable, supportive, and responsible leadership at unit levels was identified in 38 (46%) sources as crucial for establishing, maintaining, and resourcing a vision for teaching and learning. Unit leadership needed to

be open and flexible to adapting shift schedules to align with students' clinical schedule and to allow for additional orientation and education to enhance student learning.^{36,38,44,70,89,101,106} Leadership responsibilities noted to contribute to the success of the DEU model included recruitment and selection of nurses for the clinical educator role,^{23,33,64,66,74,78,89,97,100,105} ongoing unit staff development, endorsement and commitment of resources,^{51,86} scheduling,^{44,54,66,74,76,94,106} monitoring staff workload,^{50,56,64,73,89} addressing concerns,^{44,57,68,91} and ensuring unit-wide commitment to teaching and student support.^{39,41,54,59,60,73,76,83,89} Grealish⁵⁹ and Polvado *et al.*⁸⁸ highlighted the challenges that arose within the DEU model when nursing staff were not included in decisions that affect workload, unit functioning, and nursing responsibilities within the DEU model. Dedicated education units that were reported as successful had inclusive and collaborative leadership that offered supportive and welcoming environments for students while maintaining workflow, appropriate workload, quality patient care, and unit cohesiveness.^{36,54,56,92,94,107}

Monitoring environment. Responsive and supportive unit leaders were reported as important for monitoring operational logistics critical to maintaining the quality learning environment.^{44,50,75} Two sources reported adjusting nurse workload to provide adequate time for teaching, particularly during the early part of the rotation while students were becoming familiar with the practice environment.^{50,91} Regularly assessing workload was reported to be important because staffing shortages and turnover could periodically interrupt the continuity of the model.^{23,50,75} Reports included recommendations for ongoing consideration of how many students each unit could accommodate related to factors such as unit size, layout, flow, patient acuity, change over time, staff mix, and staff experience and expertise.^{38,40,56}

Clarity of roles and responsibilities

Clear descriptions of the roles and responsibilities of students, practice partners, and faculty were identified as critical for smooth functioning of this practice education model. Seventy-two (88%) sources included at least one descriptive element of any of these three roles. Consequently, sharing information about roles and responsibilities was reported as a key function of orientation and ongoing education. In the DEU model, the roles of academic faculty and

staff nurses were reorganized to maximize use of the point-of-care nurse's expertise and the teaching expertise of faculty.

Key roles. Two common roles specific to the DEU were described, although related terminology varied. Both roles were described as critical to the daily functioning of the DEU and ensuring that students were well supported in meeting their learning outcomes. Clinical faculty coordinators were full-time, appointed college or university faculty assigned by the academic institution to one or more DEU settings. They were also referred to in the literature as clinical nursing faculty⁵⁷ and academic liaison nurses.⁴¹ Clinical instructors were practice-based (staff) nurses assigned by the health care institution to a DEU setting. They were also referred to in the literature as clinical nurse preceptors,⁷⁶ staff nurse instructors,⁹³ clinical teaching partners,⁹⁷ clinical dedicated unit instructors,⁹⁹ clinical teaching associates,^{68,70} clinical nurse teachers,⁵⁸ practicing experienced nurses,¹⁰⁴ and clinical liaison nurses.⁴¹

Processes

Building nurse and faculty capacity

Providing initial and ongoing orientation to clinical nursing team members and faculty, as well as the standard student orientation, was reported as key to ensuring that all stakeholders held a shared understanding of the goals of practice learning on the DEU. Seventy-one (87%) of the included publications described strategies used to build nurse and faculty capacity related to teaching and learning within the DEU model.

Orientation for nurses prior to launching the model. The primary strategy described across sources was providing orientation workshops prior to students beginning practice in the clinical setting. Table 2 summarizes the most commonly identified orientation content areas for nurses. Supporting resources were identified in some sources, with a caveat that they needed to be individualized to each practice setting. These resources included manuals, course syllabi, skills checklists, prepared handbooks, suggested role-modeling behaviors, and student assignment examples (ie, care plans, concept maps, case studies). In addition to traditional didactic learning activities, authors described integration of simulation,^{23,80,89,97} annual skill maintenance,¹⁰¹ and video scenarios to simulate teaching situations.^{47,95} Seibert and Bonham⁹⁷ identified themes

Table 2: Initial and ongoing orientation content for nurses on the dedicated education unit, as reported in included studies

Initial orientation
Overview of the program and curriculum ^{43,46,58,69,71,90,91,100,102}
Information on the practice model ^{39,43,69,97}
Roles and responsibilities ^{20,42-44,56,58,89,90,95,97,100}
Course expectations and learning outcomes, including student level of learning ^{20,39,43,71,54,58,69,71,79,83,89,98}
Principles of adult teaching and learning – the art of clinical instruction, including theories, processes, and strategies ^{20,33,36,48,51,97,98,100}
Specific student policies ¹⁰⁰
Accommodating different learning styles ⁵⁴
Coaching critical thinking, clinical reasoning ^{51,69,70,96,100}
Student evaluation ^{33,43,58,71,98,100}
Providing constructive feedback ^{43,70,91,98}
Conflict management ⁹⁸
Supporting struggling students ⁸⁴
Generational differences ⁹⁸
Best practices with medication administration ⁶⁹
Ongoing orientation
Continued orientation each semester for new and ongoing registered nurses ¹⁰¹
Continued education and workshops for professional development of preceptors provided by faculty ^{48,67,101}
Continued consulting with nurses to keep orientation up to date ⁵¹
Provide unit team with information about curriculum and student learning goals through orientation and ongoing support ^{40,51,55,59,62}
Develop student shift schedule collaboratively with unit team, plan student orientation ⁴⁸
Provide strategies about creating an environment that supports learning, including pacing teaching to help develop mastery, critical questioning, providing appropriate levels of feedback, socializing to professional nursing role ^{37,59,77,102}
Be present in the clinical setting several hours per week to support student learning, address clinician concerns, and evaluate student practice ^{12,42,62}
Provide formal and informal mentorship and coaching to nurses to develop skills as educators ^{33,36,44,90,107}
Use of faculty rounding guide and student progression guide ⁹⁵

for both content and pedagogy for building nurse capacity, observing that this shift in the nurses' role also built a culture of learning in the unit as a community of practice. Three publications described the development of web-based modules to address the challenge many nurses experienced in attending in-person orientation sessions.^{50,67,105}

Ongoing orientation for nurses. Ongoing orientation was recommended for each practice education semester for both new and ongoing nurses to address turnover and promotion.^{15,36,42,44,54,55,76,77,90,100} The initial and ongoing orientation was seen as critical to fostering a strong working relationship

between the clinical instructors and clinical faculty coordinators, with a goal of developing a mutually collaborative, student-centered focus in the DEU.¹⁰⁶ Because of turnover and rapid changes in practice, it was considered important to continue consulting with nursing staff to maintain an up-to-date orientation. In addition to orientation formats, clinical faculty coordinators also provided workshops for professional development of preceptors, weekly teaching seminars, lunch and learn sessions, and research support.^{33,48,69,99,101} These activities were noted to provide opportunities for nurses to engage in professional development, learn about new

evidence-informed practices, provide evaluation feedback of the practice model functioning, and gain student teaching and problem-solving strategies.^{70,76,106,107} All team members in the DEU had the potential to benefit from the shift to a learning culture through growth of a continuous learning perspective for all professionals at all stages.¹²

Preparing faculty. A number of strategies were also identified to support clinical faculty coordinators to prepare for engaging with students and clinical teams. These included reviewing current literature, spending time on the unit to gain insight into nursing practice specific to the context, establishing relationships with the team, and gathering feedback about previous unit experiences with students.^{15,38,61} Ideally, academics had strong long-term relationships within a unit and a preexisting sense of belonging.^{34,42,44,94,96} Faculty who had shifted to supporting students in a DEU model versus a traditional instructor-led model reported that they required orientation to develop a different kind of presence with the students and the unit. They had to learn to be comfortable with relinquishing control, stepping back, and supporting the students as they gained confidence within the unit team.⁴⁵ As part of this shift, faculty members described seeking the appropriate level of presence, which varied depending on the student, the unit, and the time in the term.^{12,41,44,48}

Facilitating student learning

Facilitating student learning, a central process, was reported to be contingent on a unit culture of educational excellence and quality patient care. Sixty-eight (83%) sources identified at least one pedagogical approach that facilitated student learning and created an environment of student-centeredness. Immersion for a prolonged period of time in the practice environment with a consistent and engaging nurse was reported to be key to learning. Educational strategies employed by faculty included linking practice to theoretical and conceptual knowledge,^{33,74} encouraging critical reflection,^{20,37,55,59,75,103} offering individual or group debriefing,^{42,57,98,101,106,107} facilitating peer teaching,^{20,21,23,47,64,65,90,107} providing situated coaching,^{77,90} preparing through simulation,^{80,84} encouraging self-directed learning,^{37,89} and hosting online forums, weekly seminars, lectures, and grand rounds.^{20,21,30,42,48,68} Other strategies reported to be employed in the practice setting included

nurses being accessible and respectful,^{57,60,64} increasing independence and responsibilities,^{18,37,50,60,61,80,83,84,91,94} practicing within an interdisciplinary team,^{18,37,46,50,81,82,83,87,103} drawing on patients as teaching and learning partners,⁴⁹ and integrating learning with unit-based, evidence-based practice or quality-improvement projects.^{51,54,75,76,78,89}

Providing student orientation. Facilitating student learning required a robust orientation. Table 3 summarizes the most commonly identified orientation content areas for students. In addition to an orientation period at the beginning of the term, sources identified several strategies for nurses and faculty to gradually and intentionally increase student learning. These strategies were enacted by expert nurses with at least several years of experience and within the context of a unit team culture that accepted students and faculty as part of the practice team.⁵⁹ Finally, accommodation of staffing schedules and nurse-to-student ratios was reported as helpful for providing nurses with adequate time for teaching and student supervision.^{38,78}

Learning goals for students. Three key learning goals were identified in the literature for students: becoming increasingly independent and confident,^{37,51,91} developing critical thinking and clinical reasoning skills,^{23,91,93,94,99,108} and developing their personal way of practicing nursing.³⁷ Students reported meeting these goals by continuing to reflect on their learning and practice competencies,³⁷ taking responsibility for actively contributing their own evaluation,¹⁰⁶ and coming to know the complex nature of professional nursing practice.^{37,57,72,82,92} Four publications noted that students reported developing the capacity for increased workload responsibilities through responding to both faculty and practice learning requirements.^{3,16,42,108}

Communicating regularly at systems and unit levels

Ongoing, timely, and targeted bilateral communication at multiple levels was reported as necessary for connecting academic program educators and leaders with nursing practice administration and unit leadership, thereby supporting the academic-practice partnership. Forty-nine (60%) publications described specific communication mechanisms or strategies that facilitated identification of issues and unit changes in a timely way, and kept academia informed of emerging clinical trends and current quality and safety

Table 3: Initial and ongoing orientation content for nursing students on the dedicated education unit

Initial orientation
Individualized to each practice setting ^{84,98}
Meet nurse mentors, nurse leaders, nurse educators ¹⁰⁶
Roles and responsibilities ⁹²
Highlight teaching and learning strategies ²⁰
Competency checklist ⁸⁷
Unit orientation, scavenger hunt ^{69,106}
Skills lab and/or simulation ¹⁰⁶
Specific unit practices: assessment, education administration, documentation ¹⁰⁶
Ongoing orientation
Workload and patient acuity/complexity appropriate for year level and individual practice trajectory ⁹¹
Organize rotation so that student's time is not fragmented and is more immersive ⁶⁰
Focus on clinical reasoning skills and transfer of learning, not just on skill repetition ^{99,107}
Encourage and guide students to connect theory with nursing concepts ^{20,24,56,91}
Help students grasp the complex nature of professional practice ⁹¹
Support students to question practice ⁹¹
Students critically reflect on and repeatedly articulate their goals and capacities – contributes to increased independence ³⁷
Students develop weekly progression expectations and negotiate their assignments based on learning goals – self-directed learning ^{37,95}

standards.¹⁰⁷ Communication strategies were developed at unit and partnership levels. Unit-level strategies included inserting updates on student learning into regular meetings,^{54,89,90} communicating regularly via other means such as posters or web platforms,⁵¹ and having meetings at the end of each semester, or more frequently, with unit staff to debrief on workload and student progress.^{21,47,64,65,66,67,74} Partnership-level strategies for enhancing communication related to sustaining an operations task force or steering committee^{29,47,51,54,66,74,79,80,98} and debriefing at the end of the rotation.^{66,89} A key issue that was reported to benefit from early and clear communication planning was scheduling for future rotations because of the lengthy academic and practice timelines related to hiring and schedule development.^{59,66,106} Faculty also needed to be able to quickly problem solve student issues with the team and manager.^{57,61,91,94}

Evaluating and sustaining the model

Evaluation of this practice model was described as a shared academic-practice responsibility.^{24,44,66,67,74,76,80,92} However, there was limited emphasis on

continued and consistent evaluation to sustain the DEU model beyond early implementation. Although 27 (33%) sources addressed the importance of evaluating, continually improving, and sustaining the model, the majority of sources did not provide details about these processes.

Evaluation theories and strategies. Six publications included a systems theory approach to planning, implementation, and evaluation, including Donabedian's health care quality model,⁸⁵ Kotter's change model,⁸⁶ Roger's diffusion of innovation theory,⁶⁷ change theories,²³ and logic model/single alliance success model/Organisation for Economic Co-operation and Development's Local Employment and Economic Development (OECD-LEED) partnership model.^{79,80} Specific evaluation strategies identified in publications included developing a shared set of standardized evaluation tools to allow comparison over time,^{60,66,86} maintaining a feedback loop to academia on student learning to provide faculty with information on gaps in program curricula and potential improvements needed,^{43,51,89} developing an evaluation committee with the responsibilities of collecting and analyzing data,⁶⁶

producing regular reports,^{59,76} designating a role with responsibility for evaluating,^{29,74} establishing a financial committee to evaluate the economic impact,⁶⁶ conducting semester reviews,⁸⁹ examining practice team demographics to ensure there were enough experienced nurses to support students,^{64,89} and regularly assessing the readiness of clinical units for student learning.^{50,77,99,102} Rhodes *et al.*⁹¹ suggested that these strategies need to be embedded locally and systemically to ensure continuity and quality.

Nurse engagement. A key element of maintaining the DEU model was sustaining nurse engagement. Both extrinsic and intrinsic incentives were used with the DEU models to support nurse engagement. It is important to note when describing incentives that post-secondary and health funding systems vary across countries and that incentives described in this review primarily reflected US health and academic systems. Extrinsic strategies included providing a continuing education day,^{40,66,100} offering credits for university courses,^{54,66,77,89} providing continuing education credits,^{34,70,100} continually supporting the development of new nurses,^{60,76} providing opportunities to attend a paid conference,⁶⁶ being given some preference in determining work schedules or patient assignments^{66,77} including in hospital clinical ladder/clinical recognition programs,^{66,77,89} providing stipends or pay differentials,^{15,16,48,66,77,89,92} and linking to pay raises and promotions.^{66,89} Intrinsic incentives included valuing their contributions to the next generation of nurses,^{62,66,77,83,92,95} supporting student mentorship and new graduate transition,³⁷ contributing to a culture of learning,^{40,68} and receiving professional development as an educator.^{24,34,38,48,68-70,77} Mulready-Shick and Flanagan⁷⁶ indicated that nurses often reported the intrinsic incentives as more meaningful, in particular, contributing to educating nurses for the future. Physical recognition of the model was also reported, such as having unit signage about the designation and partnership, having pins or badges, and holding unit celebrations to recognize nurses and other staff who contributed to student learning.^{34,51,99} Jeffries *et al.*⁶⁶ reported development of an awards/incentives task force to determine meaningful ways of recruiting and rewarding nurses for their participation and retaining them in this role.

Addressing sustainability. Only three studies specifically addressed sustainability of the DEU beyond

the early implementation period. Mulready-Shick and Flanagan⁷⁶ developed a sustainability cycle that linked student education with nurse recruitment, retention, and development as educators. Parker and Smith⁸⁵ utilized Donabedian's structure-process-outcome theory to develop a conceptual model for their DEU assessment and planning process. In this model they addressed organizational characteristics, unit characteristics, unit practice, patient outcomes, staff satisfaction, and new graduate transition. Dorcy *et al.*⁴⁸ described how a DEU was sustained over a five-year period through a new graduate residency program. This model supported nurse retention, recruitment, teamwork, relationship building, and unit collaboration as students transitioned from being a DEU student to being a workforce member.

Discussion

The aim of this scoping review was to describe characteristics and processes of the DEU practice education model. The DEU is a practice model that has been tested, adapted, and expanded across three continents and two decades. Although initially conceptualized in Australia, DEUs have become well established in the United States. The majority of literature included in this review was from these two countries and therefore reflects the academic and practice contexts that have shaped how the model has developed over time.

The characteristics and processes identified during this review shared similarities with other practice models. For example, Budgen and Gamroth¹² indicated that all the models in their review benefited from clarity of roles and responsibilities, had some degree of relationship between practice and academic partners, and had flexibility in relation to implementation. Jayasekara *et al.*⁶⁵ examined the effectiveness of five clinical nursing education models, and suggested that support and opportunities for developing nurses' theoretical and teaching skills, and ongoing collaboration between academic and health care organizations were two key factors in helping students achieve learning outcomes. In their scoping review of partnership models, Nguyen *et al.*⁸¹ noted that despite variation in terminology, these models shared the purpose of strengthening communication between academic and practice partners and creating supportive learning environments. Despite diversity in practice education models, it appears that there are shared characteristics

and processes that support optimal student learning. The findings from this review may thus have applicability beyond the DEU model.

The DEU model was consistently presented in the literature as a solution to an underlying discourse of resource scarcity within nursing academic and practice settings, and described as cost-effective compared with the traditional clinical teaching model. Although economic considerations are important, drivers of cost containment and efficiency are not appropriate primary motivators for developing partnerships for practice education.¹⁰⁸ This scoping review highlighted that DEUs require ongoing financial resources from both the health and academic sectors to achieve and sustain the key characteristics and processes. Only one article in this review focused on economic analysis.¹⁰¹ Given the increased demand for accountability to diverse stakeholders this is a critical gap in our knowledge related to DEUs.

Overall, the results of this scoping review reinforce the need for continued innovation in developing practice education models aligned with change in health delivery systems, to be followed by careful evaluation for long-term sustainability. Edgecombe and Bowden,¹⁰⁸ in their reflection on growth and global expansion of the DEU model, noted that although administrative infrastructure is central to the DEU strategy, it was rarely acknowledged as part of management and thus required more attention. They framed this observation as the need to work toward a greater balance between the excitement of new partnerships and innovation and ensuring that important day-to-day administrative functions are sustained. Long-term analysis of a sustainability cycle linking DEU student education with nursing recruitment, retention, and development of nurse leaders and educators is required if the DEU is to be considered a viable and efficient solution to nursing practice and education resource scarcity, as exists globally today.

This scoping review revealed limited literature on evaluation methodology, evaluation findings, or processes and resources required for sustainability of the DEU model. Edgecombe and Bowden¹⁰⁸ indicated that a well-established DEU should have the ability to flex and change as the contextual environment changes. This level of adaptability, however, requires continuous shared evaluation. Although evaluative components focusing on implementation

of pilot projects were present in the literature, a long-term perspective of the DEU model and partnership based on evidence was still underdeveloped. Mulready-Shick *et al.*⁷⁷ provide one example of longitudinal outcomes in their multi-year, multi-site evaluation of established DEUs. They found that over time, the DEU model transformed academic-practice relationships and unit functioning, and positively impacted unit-based outcomes through a self-sustaining loop of capacity building.

Offered through collaborative academic-service partnerships, the DEU was described fundamentally as being innovative. Recent literature continues to describe the DEU as an innovative collaborative model of practice education, even more than two decades after the initial publication. We propose that with significant expansion and integration of the model over the past two decades, the principles of the DEU itself are no longer essentially innovative but are established and durable. In future DEU implementation, evaluation, research, academic, and practice partners can confidently refer to the DEU model, and the characteristics and processes outlined above, to adapt the model to new settings within dynamic health care contexts. The notion of innovation may then be more appropriately applied to substantial advances in the model, or other new models.

Limitations of this review

In their scoping review of the effectiveness of partnership models in clinical nursing education, Nguyen *et al.*⁸¹ noted the use of varied nomenclature for practice education models with shared structural features. We also noted this in our review. Due to a variety of alternative terminology used for the DEU model, some publications with relevant data may not have been identified during the search. An additional limitation was that the search was limited to English language publications.

Conclusions

This scoping review has provided a comprehensive view of the literature available on the DEU nursing practice education model, typically described as an innovative model. A substantial body of literature was noted describing the characteristics and processes of the DEU model as they related to initial planning, adaptation, and implementation. There

was less literature available on long-term evaluation, maintenance, and sustainability of this model.

Implications for research

Continued research of the DEU as a sustainable and beneficial practice education model for student learning, nurse recruitment, transition and retention, and development of clinical instructors as educators is recommended. The DEU is presented as a solution to a discourse of scarce resources to support nursing practice education in both practice and academic sectors, thus evaluation of its effectiveness and contextual benefits for stakeholders and student learning is critical, as well as the economic costs and benefits. Further research is needed to determine strategies and resources required to maintain the quality of this model over time. For example, questions remain about a number of operational considerations, such as nurse-to-patient ratio, faculty-to-student ratio, length of clinical term, exclusive use of unit by one school, selection process of RNs, mixing of student levels, and level of faculty presence on unit.

In addition to supporting education, continued research is also recommended into how the DEU model may benefit nursing practice, and thus client outcomes, through linking to new graduate transition into the workforce.^{104,109} Finally, while this review focused on the DEU model of undergraduate RN student education, the challenges of clinical practice placement availability and accessibility likely apply to all practice education models across all health care professional student groups. As interprofessional and team-based educational approaches continue to develop, it would be valuable to study the potential of the DEU model to facilitate development of interprofessional practice competencies.

Acknowledgments

Dr. Susan Duncan and Joanne Maclaren, additional members of the Collaborative Learning Unit Research team, for their support in the conduct of this scoping review.

Funding

Michael Smith Foundation for Health Research (MSFHR) British Columbia Nursing Research Initiative (BCNRI) - Practice-based Nursing Research Program (December 2017). The funds obtained for

this review were from a targeted call for grant proposals. The funder did not have a role in content development.

References

1. Pringle D, Green L, Johnson S. Nursing education in Canada: historical review and current capacity. Ottawa, ON: Nursing Sector Study Corporation; 2004; 132 p.
2. Baker C, Guest E, Jorgenson L, Crosby K, Boyd J. Ties that bind: the evolution of education for professional nursing in Canada from the 17th century to the 21st century. Ottawa, ON: Canadian Association of Schools of Nursing; 2012; 36 p.
3. Billett S, Henderson A. Developing learning professionals. New York: Springer; 2011; 220 p.
4. Benner P, Sutphen M, Leonard, Day L, Shulman L. Educating nurses: a call for radical transformation. San Francisco: Jossey-Bass; 2010; 288 p.
5. Pijl-Zieber E, Grypma S, Barton S. Baccalaureate nursing education: has it delivered? A retrospective critique. *Nurs Leader* 2014;27(2):27–34.
6. Neiderhauser V, Schloessler M, Gubrud-Howe P, Codier E. Creating innovative models of clinical education nursing. *J Nurs Educ* 2012;51(11):1–6.
7. Sedgewick M, Harris S. A critique of the undergraduate nursing preceptorship model. *Nursing Res Pract* 2012; 248356.
8. Forber J, DiGiacomo M, Davidson P, Carter B, Jackson D. The context, influences and challenges for undergraduate nurse clinical education: continuing the dialogue. *Nurs Educ Today* 2015;35:1114–8.
9. Hickerson K, Taylor L, Terhaar M. The preparation-practice gap: an integrative literature review. *J Contin Educ Nurs* 2016;47(1):17–23.
10. Regan S, Wong C, Laschinger H, Cummings G, Leiter M, MacPhee M, et al. Starting out: qualitative perspectives of new graduate nurses and nurse leaders on transition to practice. *J Nurs Manag* 2017;25(4):246–55.
11. Wolff A, Regan S, Pesut B, Black J. Ready for what? an exploration of the meaning of new graduate nurses' readiness for practice. *Int J Nurs Educ Scholarsh* 2010; 7(1):1–14.
12. Budgen C, Gamroth L. An overview of practice education models. *Nurs Educ Today* 2008;28:273–83.
13. McClure E, Black L. The role of the clinical preceptor: an integrative literature review. *J Nurs Educ* 2013;52(6): 335–41.
14. Myrick F. Preceptorship and critical thinking in nursing education. *J Nurs Educ* 2002;41(4):154–64.
15. Luhanga F, Billay D, Grundy Q, Myrick F, Yonge O. The one-to-one relationship: is it really key to an effective preceptorship experience? A review of the literature. *Int J Nurs Educ Scholarsh* 2010;7(1):Article 21.

16. Valizadeh S, Borimnejad L, Rahmani A, Gholizadeh L, Shahbazi S. Challenges of the preceptors working with new nurses: a phenomenological research study. *Nurs Educ Today* 2016;44:92–7.
17. Banister G, Portney L, Vega-Barachowitz C, Jampel A, Schnider M, Inzana R, et al. The interprofessional dedicated education unit: design, implementation and evaluation of an innovative model for fostering interprofessional collaborative practice. *J Interprof Educ Pract* 2020;19:100308.
18. Dyar A, Lachmann H, Stenfors T, Kiessling A. The learning environments on a student ward: an observational study. *Perspect Med Educ* 2019;8:276–83.
19. Roxburgh M, Conlon M, Banks D. Evaluating hub and spoke models of practice learning in Scotland, UK: a multiple case study approach. *Nurs Educ Today* 2012;32(7):782–9.
20. Edgecombe K, Wotton K, Gonda J, Mason P. Dedicated education units: 1. A new concept for clinical teaching and learning. *Contemp Nurse* 1999;8(4):166–71.
21. Gonda J, Wotton K, Edgecombe K, Mason P. Dedicated education units: 2. An evaluation. *Contemp Nurse* 1999; 8(4):172–6.
22. American Association of Colleges of Nursing. Leading excellence and innovation in nursing in academic nursing: 2015 annual report. Washington DC: AACN: 2015 [cited 2020 Sep 15]. Available from: <https://www.aacnnursing.org/portals/42/publications/annual-reports/annualreport15.pdf>.
23. Moscato S, Miller J, Logsdon K, Weinberg S, Chorpenning L. Dedicated education unit: an innovative clinical partner education model. *Nurs Outlook* 2007;55(1):31–7.
24. Miller T. The dedicated education unit: a practice and education partnership. *Nurs Leadersh Forum* 2005;9(4): 169–73.
25. Harris J, Keller S, Hinton E. Dedicated education units as a clinical rotation for nursing students: a scoping review protocol. *JBI Database System Rev Implement Rep* 2018;16(3):642–7.
26. Marcellus L, Jantzen D, Sawchuck D, Gordon C, Humble R. Characteristics of the collaborative learning unit practice education model for undergraduate nursing students: a scoping review protocol. *JBI Database System Rev Implement Rep* 2019;17(6):1051–9.
27. Cambridge Dictionary. Cambridge, UK: Cambridge University Press; 2021. Characteristic [internet]. n.d. [cited 2020 Sep 15]. Available from: <https://dictionary.cambridge.org/dictionary/english/characteristic>.
28. Business Dictionary. Processes [internet]. n.d. [cited 2020 Sep 15]. Available from: <http://www.businessdictionary.com/> [link no longer available].
29. Peters MDJ, Godfrey C, McInerney P, Munn Z, Tricco AC, Khalil H. Chapter 11: scoping reviews. In: Aromataris E, Munn Z, editors. *JBI Manual for Evidence Synthesis* [internet]. Adelaide: JBI; 2020 [cited 2020 Sep 15]. Available from: <https://synthesismanual.jbi.global>.
30. Grealish L, Carroll G. Beyond preceptorship and supervision: a third clinical teaching model emerges for Australian nursing education. *J Adv Nurs* 1997;15(2):3–11.
31. Munn Z, Aromataris E, Tufanaru C, Stern C, Porritt K, Farrow J, et al. The development of software to support multiple systematic review types: the JBI System for the Unified Management, Assessment and Review of Information (JBI SUMARI). *Int J Evid Based Healthc* 2018;17(1):36–43.
32. Moher D, Liberati A, Tetzlaff J, Altman DG; The PRISMA Group. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA Statement. *PLoS Med* 2009;6(6):e1000097.
33. Auxier N, Simpson H. Transforming the role of the clinical faculty coordinator in the dedicated education unit. *Nurs Educ Perspect* 2018;39(6):383–4.
34. Auxier N, Woodruff L. Job satisfaction and intent to leave among dedicated education unit and traditional clinical teachers. *J Cont Educ Nurs* 2018;49(12):575.
35. Betony K, Yarwood J. What exposure do student nurses have to primary health care and community nursing during the New Zealand undergraduate Bachelor of Nursing programme? *Nurs Educ Today* 2013;33(10):1136–42.
36. Burke K, Craig C. The dedicated education unit: innovating within the regulatory framework. *J Nurs Reg* 2011;1(4):9–12.
37. Callaghan D, Watts W, McCullough D, Moreau J, Little M, Gamroth L, et al. The experience of two practice education models: collaborative learning unit and preceptorship. *Nurs Educ Pract* 2009;9:244–52.
38. Castner J, Ceravalo D, Tomasoc B, Mariano K. Dedicated education units: what's the impact on patient satisfaction? *Nurs Manage* 2012;36(3):14–8.
39. Chmura J. Dedicated education unit model in a hospice and palliative care setting. *Nurs Educ* 2016;41(1):25–8.
40. Claeys M, Deplaecie M, Vanderplancke T, Delbaere I, Mynny D, Beeckman D, et al. The difference in learning culture and learning performance between a traditional clinical placement, a dedicated education unit and work-based learning. *Nurs Educ Today* 2015;35:e70–7.
41. Crawford M, Dresen S, Tschikota S. From “getting to know you to soloing”: the preceptor–student relationship. *NT Res* 2000;5:5–19.
42. Dapremont J, Lee S. Partnering to educate: dedicated education units. *Nurs Educ Pract* 2013;13:335–7.
43. Dean G, Reishtein J, McVey J, Ambrose M, Burke S, Haskins M, et al. Implementing a dedicated education unit: a practice partnership with oncology nurses. *Clin J Oncol Nurs* 2013;17(2):208–10.
44. Demeester D. The lived experience of nursing faculty in a dedicated education unit. *J Nurs Educ* 2016;55(12):669–74.
45. DeMeester D. The meaning of the lived experience of nursing faculty on a dedicated education unit [dissertation]. Las Vegas, NV: University of Nevada; 2012.
46. DEU Project Team. Dedicated education units: a new way of supporting clinical learning. *Nurs NZ* 2008;14(11):24–5.

47. Devereaux Melillo K, Abdallah L, Dodge L, Dowling J, Prendergast N, Rathbone A, et al. Developing a dedicated education unit in long-term care: a pilot project. *Geriatr Nurs* 2014;35:264–71.
48. Dorcy K, Elgar S, Heye D, Ford R, Bohl S, Eisenberg S, et al. From student to practicing oncology nurse: a novel collaboration to create a transition to practice program in ambulatory cancer care. *Clin J Oncol Nurs* 2016;20(3):298–302.
49. Eskillson C, Carlsson G, Ekebergh M, Horberg U. The experiences of patients receiving care from nursing students at a dedicated education unit: a phenomenological study. *Nurs Educ Pract* 2015;15:353–8.
50. Fox J. Creating a dedicated education unit in long-term care. *J Geront Nurs* 2017;43(5):23–9.
51. Freundl M, Anthony M, Johnson B, Harmer B, Carter J, Boudiab L, et al. A dedicated education unit VA Medical Centers and Baccalaureate Nursing Programs Partnership Model. *J Prof Nurs* 2012;28(6):344–50.
52. Galuska L. Dedicated education units: partnerships for building leadership competency. *J Nurs Educ* 2015;54(7):385–8.
53. George L, Locasto L, Pyo K, Cline T. Effect of the dedicated education unit on nursing student self-efficacy: a quasi-experimental research study. *Nurs Educ Pract* 2017;23:48–53.
54. Glazer G, Ives Erickson J, Mylott L. Partnering and leadership: core requirements for developing a dedicated education unit. *J Nurs Admin* 2011;41(10):401–6.
55. Glynn D, Wendt J, Russell B, Conley G, Hill P. Clinical nurses' perceptions of a senior capstone dedicated educational unit. *Nurs Educ Perspect* 2019;40(2):107–9.
56. Glynn D, McVey C, Wendt J, Russell B. Dedicated educational nursing unit: clinical instructors' role perceptions and learning needs. *J Prof Nurs* 2017;33(2):108–12.
57. Gordon M. Nursing faculty communication behaviors and experiences on dedicated education units [dissertation]. Minneapolis, MN: Capella University; 2020.
58. Goslee E, Chesak S, Forsyth D, Foote J, Bergen S. Implementation of a dedicated education unit model for ADN students in a rural primary care setting. *Nurs Educ* 2020;45(2):97–101.
59. Grealish L, Kaye L. Change and challenge: the implementation of a new model of clinical learning for undergraduate nursing students in a cancer setting. *Aust J Cancer Nurs* 2004;5(2):11.
60. Hannon P, Hunt C, Haleem D, King L, Day L, Casals P. Implementation of a dedicated education unit for Baccalaureate students: process and evaluation. *Int J Nurs Educ* 2012;4(2):155–9.
61. Harmer B, Huffman J, Johnson B. Clinical peer mentoring: partnering BSN seniors and sophomores on a dedicated education unit. *Nurs Educ* 2011;36(5):197–202.
62. Heidelberg T. Registered nurses' beliefs regarding the preparedness of nursing students who have completed the DEU program. *ABNF J* 2017;28(3):81–4.
63. Heiskell J. Evaluating the impact that the dedicated education unit model of clinical experience has on student learning [dissertation]. Denver, CO: American Sentinel University; 2019.
64. Hunt D, Milani M, Wilson S. Dedicated education units: an innovative model for clinical education. *Am Nurs Today*; 10(5):46-9.
65. Jayasekara R, Smith C, Hall C, Rankin E, Smith M, Visvanathan V, et al. The effectiveness of clinical education models for undergraduate nursing programs: a systematic review. *Nurs Educ Pract* 2018;29:116–26.
66. Jeffries P, Rose L, Belcher A, Dang D, Hochuli J, Fleischmann D, et al. A clinical academic practice partnership: a clinical education redesign. *J Prof Nurs* 2013;29:128–36.
67. Jones E, Simpson V, Hendricks S. Enhancement of professional development of front-line nurse preceptors in a dedicated education unit. *J Cont Educ Nurs* 2017;48(1):40–6.
68. Koharchik L, Jakub K, Witsberger C, Brooks K, Petras D, Weideman Y, et al. Staff nurses' perception of their role in a dedicated education unit within the intensive care unit. *Teach Learn Nurs* 2017;12:17–20.
69. Krampe J, L'Ecuyer K, Palmer J. Development of an online orientation course for preceptors in a dedicated education unit program. *J Contin Educ Nurs* 2013;44(8):352–6.
70. Lloyd-Penza M, Rose A, Roach A. Using feedback to improve clinical education of nursing students in an academic-practice partnership. *Teach Learn Nurs* 2019;14(2):125–7.
71. McKown T, McKeon L, Webb S. Using quality and safety education for nurses to guide clinical teaching on a new dedicated education unit. *J Nurs Educ* 2011;50(12):706–10.
72. Masters K. Integrating quality and safety education into clinical nursing education through a dedicated education unit. *Nurs Educ Pract* 2016;17:153–60.
73. Moore J, Nahigian E. Nursing student perceptions of nurse-to-nurse collaboration in dedicated education units and in traditional clinical instruction units. *J Nurs Educ* 2013;52:346–50.
74. Moscato S, Nishioka V, Coe M. Dedicated education unit: implementing an innovation in replication sites. *J Nurs Educ* 2013;52:259–67.
75. Mullenbach K, Burggraf V. A dedicated learning unit in long-term care: a clinical immersion for students. *Geriatr Nurs* 2012;33:63–7.
76. Mulready-Shick J, Flanagan K. Building the evidence for dedicated education unit sustainability and partnership success. *Nurs Educ Perspect* 2014;35:287–93.
77. Mulready-Shick J, Flanagan K, Banister G, Mylott L, Curtin L. Evaluating dedicated education units for clinical education quality. *J Nurs Educ* 2013;52(11):606–14.
78. Mulready-Shick J, Kafel K, Banister G, Mylott L. Enhancing quality and safety competency development at the unit level: an initial evaluation of student learning and clinical

- teaching on dedicated education units. *J Nurs Educ* 2009;48(12):716–9.
79. Murray T, MacIntyre R, Teel C. An analysis of partnership performance: the St. Johns Mercy Medical Center Saint Louis University School of Nursing dedicated education unit project. *J Prof Nurs* 2011;27(6):e58ee63.
80. Murray T, Crain C, Meyer G, McDonough M, Schweiss D. Building bridges: an innovative academic-service partnership. *Nurs Outlook* 2010;58(5):252e260.
81. Nguyen V, Lawrence K, McGillion A. The effectiveness of partnership models in clinical nursing education: a scoping review. *Nurs Educ Today* 2020;90:104438.
82. Nishioka V, Coe M, Hanita M, Moscato S. Dedicated education unit: nurse perspectives on their clinical teaching role. *Nurs Educ Perspect* 2014;35:294–300.
83. Nishioka V, Coe M, Hanita M, Moscato S. Dedicated education unit: student perspectives. *Nurs Educ Perspect* 2014; 35:301–7.
84. O'Lynn C. Comparison between the Portland model dedicated education unit in acute-care and long-term care settings in meeting medical-surgical nursing course outcomes: a pilot study. *Geriatr Nurs* 2013;34:187–93.
85. Parker K, Smith C. Assessment and planning for a dedicated education unit. *J Nurses Staff Dev* 2012;28:E1–6.
86. Pfannes J. A guide for outcomes evaluation and sustainability of a dedicated education unit within an academic-practice partnership [dissertation]. Las Vegas, NV: University of Nevada; 2019.
87. Plemmons C, Clark M, Feng D. Comparing student clinical self-efficacy and team process outcomes for a DEU, blended, and traditional clinical setting: a quasi-experimental research study. *Nurs Educ Today* 2018;62: 107–11.
88. Polvado K, Sportsman S, Bradshaw P. Pilot study of a dedicated education unit: lessons learned. *J Nurs Educ Pract* 2015;5:122–30.
89. Raines D. A dedicated education unit for maternal-newborn nursing clinical education. *Nurs Womens Health* 2016;20(1):20–7.
90. Ranse K, Grealish L. Nursing students' perceptions of learning in the clinical setting of the dedicated education unit. *J Adv Nurs* 2007;58(2):171–9.
91. Rhodes M, Meyers C, Underhill M. Evaluation outcomes of a dedicated education unit in a baccalaureate nursing program. *J Prof Nurs* 2012;28:223–30.
92. Rusch L, McCafferty K, Schoening A, Hercinger M, Manz J. Impact of the dedicated education unit teaching model on the perceived competencies and professional attributes of nursing students. *Nurs Educ Pract* 2018;33:90–3.
93. Rusch L, Beiermann T, Schoening A, Slone C, Flott B, Manz J, et al. Defining roles and expectations for faculty, nurses, and students in a dedicated education unit. *Nurs Educ* 2018;43(1):14–7.
94. Ryan C, Shabo B, Tatum K. Using experienced clinicians to facilitate clinical education. *Nurs Educ* 2011;36(4): 165–70.
95. Saxton R, Warmbrodt L, Mahley S, Reberry D, McNeece P. The dedicated education unit experience: what's in it for professional development nurses? *J Nurses Prof Devel* 2015;31:145–50.
96. Schecter R, Gallagher J, Ryan M. Enhancing Baccalaureate nursing students' perception of competence and confidence during an alternative dedicated education unit experience: a pilot study. *J Nurses Prof Dev* 2017;33(3):120–6.
97. Seibert S, Bonham E. Preparing dedicated education unit staff nurses for the role of clinical teacher. *J Nurses Prof Dev* 2016;32(4):205–11.
98. Sharpnack P, Koppelman C, Fellows B. Using a dedicated education unit clinical education model with second-degree accelerated nursing program students. *J Nurs Educ* 2014;53(12):685–91.
99. Smyer T, Bundalian-Tejada M, Alforque Tan R. Systematic and deliberate orientation and instruction for dedicated education unit staff. *J Nurs Educ* 2015;54(3):165–8.
100. Smyer T, Gatlin T, Tan R, Tejada M, Feng D. Academic outcome measures of a dedicated education unit over time: help or hinder? *Nurs Educ* 2015;40:294–7.
101. Springer P, Johnson P, Lind B, Walker E, Clavelle J, Jensen N. The Idaho dedicated education unit model: cost effective, high quality education. *Nurs Educ* 2012;37:262–7.
102. Terry A. A collaborative approach to prepare nursing students to implement relationship-based care. *Nurs Educ Perspect* 2019;40(6):376–8.
103. Tochterman L. The relationships between a dedicated education unit and quality of nursing care [dissertation]. Spokane, WA: Washington State University; 2016.
104. Vnenchak K, Sperling M, Kelley K, Petersen B, Silverstein W, Petzoldt O, et al. Dedicated education unit improving critical thinking and anxiety: a longitudinal study. *J Nurses Prof Dev* 2019;35(6):317–23.
105. Walker E, Springer P, Lazare P, Jensen N, Clavelle J, Johnson P, et al. The ABCs of DEUs. *Nurs Manag* 2012; 43(12):38–44.
106. Warner J, Burton D. The policy and politics of emerging academic-service partnerships. *J Prof Nurs* 2009;25: 329–34.
107. Wotton K, Gonda J. Clinician and student evaluation of a collaborative clinical teaching model. *Nurs Educ Pract* 2004;4(2):120e127.
108. Edgecombe K, Bowden K, editors. Clinical learning and teaching innovations in nursing: dedicated education units building a better future. The Netherlands: Springer Verlag; 2014. 211 p.
109. Dimino K, Louie K, Banks J, Mahon E. Exploring the impact of a dedicated education unit on new graduate nurses' transition to practice. *J Nurses Prof Dev* 2020;36(3):121–8.

Appendix I: Search strategy

The database searches are a combination of keyword and controlled vocabulary terms, where applicable, to provide the most comprehensive coverage.

- The default keyword search in the Ovid databases includes Title, Abstract, and Subject fields.
- The NOFT keyword search in ProQuest database searches anywhere except full-text.

CINAHL Complete (EBSCO)

Final search May 13, 2020

#	Query	Records retrieved
S1	("collaborative learning unit*" or "collaborative cluster*" or "dedicated learning unit*" or dedicated education* unit* or DEU or "practice education model*" or "team preceptorship*" or "clinical teaching model*" or "clinical teaching unit*")	892
S2	(undergraduate* or baccalaureate or BSN or associate degree)	47,026
S3	(MH "Students, Nursing, Baccalaureate+") OR (MH "Education, Nursing, Baccalaureate+")	15,846
S4	(MH "Education, Nursing, Associate")	1935
S5	S2 OR S3 OR S4	48,051
S6	S1 and S5	101
S7	S1 and S5 (Limiters - Published Date: 19990101-)	90

MEDLINE with Full Text (EBSCO)

Final search May 13, 2020

#	Query	Records retrieved
S1	("collaborative learning unit*" or "collaborative cluster*" or "dedicated learning unit*" or dedicated education* unit* or DEU or "practice education model*" or "team preceptorship*" or "clinical teaching model*" or "clinical teaching unit*")	7327
S2	(undergraduate* or baccalaureate or BSN or associate degree) and nurs*	26,050
S3	(MH "Education, Nursing, Baccalaureate") OR (MH "Education, Nursing, Associate") OR (MH "Education, Nursing") OR (MH "Students, Nursing")	62,999
S4	S2 OR S3	68,326
S5	S1 and S4	136
S6	S1 and S4 (Limiters - Date of Publication: 19990101-)	128

Academic Premier Search (EBSCO)

Final search May 13, 2020

#	Query	Records retrieved
S1	("collaborative learning unit*" or "collaborative cluster*" or "dedicated learning unit*" or "dedicated education* unit*" or DEU or "practice education model*" or "team preceptorship*" or "clinical teaching model*" or "clinical teaching unit*")	8696
S2	(undergraduate* or baccalaureate or BSN or associate degree) and nurs*	8543
S3	SU (baccalaureate nursing education) OR SU (nursing students)	11,072
S4	S2 OR S3	17,124
S5	S1 and S4	51
S6	S1 and S4 (Limiters - Publication Date: 19990101-)	51
S7	S1 and S4 (Limiters - Publication Date: 19990101-; Language: English)	44

ERIC (EBSCO)

Final search May 13, 2020

#	Query	Records retrieved
S1	(collaborative learning unit* or collaborative cluster* or dedicated learning unit* or dedicated education* unit* or DEU or "practice education model*" or "team preceptorship*" or "clinical teaching model*" or "clinical teaching unit*")	3565
S2	(undergraduate or baccalaureate or BSN or associate degree) and nurs*	2156
S3	SU ("nursing students") or SU ("nursing education")	5664
S4	S2 OR S3	6217
S5	S1 and S4	21
S6	S1 and S4 (Limiters - Publication Date: 19990101-)	17

JB1 EBP Database (Ovid)

Final search May 13, 2020 (2000–2020)

An "All Fields" search was used with the following keywords: ((collaborative learning unit* or collaborative cluster* or dedicated learning unit* or dedicated education* unit* or DEU or practice education model* or team preceptorship* or clinical teaching model* or clinical teaching unit*) and (undergraduate* or baccalaureate or BSN or bachelor* or associate degree) and nurs*).af.

5 sources were identified from this search.

Cochrane Database of Systematic Reviews (Ovid) (2000–2020)

Final search May 13, 2020

An “All Fields” search was used with the following keywords: ((collaborative learning unit* or collaborative cluster* or dedicated learning unit* or dedicated education* unit* or DEU or practice education model* or team preceptorship* or clinical teaching model* or clinical teaching unit*) and (undergraduate* or baccalaureate or BSN or bachelor* or associate degree) and nurs*).af.

No sources were identified from this search.

ProQuest Dissertations and Theses

Final search May 13, 2020

Noft (nursing students OR nursing education OR undergraduate* OR baccalaureate OR associate OR BSN)

AND

noft(“collaborative learning unit*” OR “collaborative cluster*” OR “dedicated learning unit*” OR “dedicated education unit*” OR DEU OR “practice education model*” OR “team preceptorship*” OR “clinical teaching model*” OR “clinical teaching unit”)

And publication date = 1999–2020

16 sources were identified from this search.

Google Scholar

Final search May 13, 2020

(“collaborative learning units” OR “collaborative cluster” OR “dedicated learning units” OR “dedicated education units” OR DEU OR “practice education models” OR “team preceptorship” OR “clinical teaching models” OR “clinical teaching units) undergraduate

1999–2020

Approximately 2800 results; the first 160 results were retrieved, as relevancy decreased thereafter.

Gray literature

Final search May 13, 2020

A gray literature search strategy was developed using Google, and targeting specific national and international nursing education organization websites. We searched keywords based on those found in our database search strategies. The searches were iterative, as is typical for gray literature searching, and we limited the searches to English-language items only, published between 1999 and May 2020. A full list of websites searched is below:

American Association of Colleges of Nursing: <https://www.aacnnursing.org/>

Australian College of Nursing: <https://www.acn.edu.au/>

Canadian Association of Schools of Nursing: <https://www.casn.ca/>

New Zealand Nursing Education in the Tertiary Sector: <http://nurseducation.org.nz/>

International Council of Nurses: <https://www.icn.ch/>

World Health Organization: https://www.who.int/health-topics/nursing#tab=tab_1

No sources were identified for inclusion from this search.

Appendix II: Studies ineligible following full-text review

1. Banister G, Portney LG, Vega-Barachowitz C, Jampel A, Schnider M, Inzana R, *et al.* The interprofessional dedicated education unit: design, implementation and evaluation of an innovative model for fostering interprofessional collaborative practice. *J Interprof Educ Pract* 2020;19:100308.
Reason for exclusion: Short-term experience, not extended consolidated learning time.
2. Chan A, Tang F, Choi K, Liu T, Taylor-Piliae R. Clinical learning experiences of nursing students using an innovative clinical partnership model: a non-randomized controlled trial. *Nurs Educ Today* 2018;68:121–7.
Reason for exclusion: Practice education model not a DEU.
3. Dimino K, Louie K, Banks J, Mahon E. Exploring the impact of a dedicated education unit on new graduate nurses' transition to practice. *J Nurses Prof Devel.* 2020;36:121–8.
Reason for exclusion: Participants not students.
4. Fitzwater J. Using the clinical learning environment inventory (CLEI) to compare nursing student satisfaction with clinical settings. 2019. Conference presentation: <https://sigma.nursingrepository.org/handle/10755/19122>.
Reason for exclusion: Conference paper.
5. Goodin J, Schwytzer D. Building practice partnerships: facilitating role development of novice clinical instructors in dedicated education units. 2019. Conference presentation: <https://sigma.nursingrepository.org/handle/10755/19200>.
Reason for exclusion: Conference paper.
6. Jones C. Impact of a dedicated education unit. *J Allied Health.* 2016;45(4):306.
Reason for exclusion: Conference paper.
7. Jones C, Chesak S, Forsyth D, Meiers S. Missed nursing care as a quality indicator during transition to a dedicated education unit model. *Nurs Educ Perspect* 2019;40(2):105–6.
Reason for exclusion: No data on DEU characteristics or processes.
8. Harmer B, Huffman J, Johnson B. Clinical peer mentoring: partnering BSN seniors and sophomores on a dedicated education unit. *Nurs Educ* 2011;36(5):197–202.
Reason for exclusion: Focus on peer mentoring program, DEU as setting.
9. Koestler D. Impact of academic appointment on learning guide perceptions of support who teach undergraduate nursing students on a dedicated education unit: a Roy Adaptation Model perspective. United States: Delta State University; 2014. Report No.: ISBN:9781321308266.
Reason for exclusion: No data on DEU characteristic or processes.
10. Shake E. Dedicated education units: do they improve student satisfaction? [dissertation]. Columbia, SC: University of South Carolina; 2010.
Reason for exclusion: No data on DEU characteristic or processes.
11. Svejda M. Building the clinical bridge to advance education, research, and practice excellence. *Nurs Res Pract* 2012;826061.
Reason for exclusion: Practice education model not a DEU.

12. Thomas S. A quantitative study comparing clinical competency among nursing students enrolled in a dedicated education unit and traditional education model [dissertation]. Minneapolis, MN: Capella University; 2016.

Reason for exclusion: No data on DEU characteristics or processes.

13. van der Riet P, Levett-Jones T, Courtney-Pratt H. Nursing students' perceptions of a collaborative clinical placement model: a qualitative descriptive study. *Nurs Educ Prac* 2018;30:42–7.

Reason for exclusion: Practice education model not a DEU.

Appendix III: Characteristics and processes of dedicated education unit practice education model

Sources	Characteristics					Processes			
	Effective academic-practice partnership	Adaptability to diverse contexts	Unit culture of educational excellence	Responsive and supportive unit leadership	Clarity of roles and responsibilities	Building nurse and faculty capacity	Facilitating student learning	Communicating regularly at systems and unit levels	Evaluating and sustaining the model
Auxier (2018a) US ³³		Adapted to three different practice contexts.	Develop educational environment that promotes optimal learning.	Recruit RNs interested in CI role.	<p>Role transformation: RNs become instructors and faculty become facilitators.</p> <p>Change of terminology: RNs become CIs, faculty become CFCs.</p> <p>CI creates patient assignments, provides feedback on student progress to CFC.</p> <p>CFC checks on student progress, supports CIs, completes final evaluation of student.</p>	<p>Coach CIs to develop skills.</p> <p>CFC schedules regular learning sessions, holds weekly seminars for students.</p> <p>Pre-practice labs for students.</p>	Encourage and guide students to connect theory with nursing concepts.		
Auxier (2018b) US ³⁴	Relationships between academic and practice partners required intervention related to RN satisfaction with work.	(2018b)	Hertzberg's motivator-hygiene theory of job satisfaction.			Continued education recommended for professional development on enriching teaching practices. Examples: lunch and learn; continuing education credits.		Communication required intervention related to RN satisfaction with work.	
Betony (2013) New Zealand ³⁵	Collaboration can increase placements and reduce competition.	DEU developed for primary care.					Increased opportunity for interprofessional learning.		
Budgen (2008) Canada ¹²	Philosophy of respect and trust between clinicians and faculty.		Education, in addition to patient care, is a primary function. Students and faculty are team members rather than guests.		Students take responsibility for learning. Clinicians responsible for overall patient care and mentoring students. Faculty ensure students have relevant learning opportunities. Faculty evaluate student practice with clinician input. Responsibility for students shared by multiple clinicians. Faculty more involved in unit.	<p>Increased learning support among clinicians, students, and faculty.</p> <p>Enhanced knowledge transfer, theory and practice integration.</p>	Concern about continuity in student progress. Challenge to obtain feedback on student progress from clinicians.		

(Continued)									
Sources	Characteristics					Processes			
	Effective academic-practice partnership	Adaptability to diverse contexts	Unit culture of educational excellence	Responsive and supportive unit leadership	Clarity of roles and responsibilities	Building nurse and faculty capacity	Facilitating student learning	Communicating regularly at systems and unit levels	Evaluating and sustaining the model
Burke (2011) US ³⁶	Collaboratively developed strategic plan. Mutually identified needs, shared goals, trust. Supports increased placement capacity.		Optimal learning environment for both students and staff. Everyone is an educator whether or not they work directly with students.		Key roles of CI and CFC. CIs support student learning, provide information to CFC about student learning. CFCs mentor CIs in teaching practices, assign student grades.	RNs come to know learning needs of students. Formal orientation to teaching and mentoring.		Open and ongoing communication at system levels. CIs problem solve with unit managers.	
Callaghan (2009) Canada ³⁷	Academic-practice partnership.		Collegial environment where learning and application of knowledge is a rewarding experience for the entire team. Shared responsibility for guiding student learning. Students and faculty are part of the team.		All unit staff responsible for mentoring students, provide student progress feedback to faculty.		Self-directed learning; students responsible for identifying and working toward meeting their own learning needs. Critical reflection. Learned from different practices. Learned from and with other disciplines. Immersed in complexity of care. Increased independence and confidence. Socialization to professional role.		
Castner (2012) US ³⁸			Goal of including all staff with future expansion. Continual refreshing of learning to support students appears to have positive impact on patient care.		RN as CI.	New level of competency and learning for RNs.	Ensure appropriate patient workload, scheduling, and skill mix so CI can support student learning.	Dialogue to ensure best practice.	
Chmura (2016) US ³⁹	Built on mutual respect, open communication, and collaborative relationships.	Adapted to palliative care setting.	Collegial unit team working relationships Designed to be optimal and efficient learning environment.	Receptivity to students and faculty.	Require clear understanding of roles and responsibilities. RN as CI. Faculty as CFC to support student learning, mentor CIs, problem resolution, final student evaluation.	Tailored orientation program for CIs. Intensive and focused student orientation. Weekly conferences moderated by CFC. CIs developed skills in teaching and communication.		Built on open communication. Service partner instrumental.	

(Continued)									
Sources	Characteristics					Processes			
	Effective academic-practice partnership	Adaptability to diverse contexts	Unit culture of educational excellence	Responsive and supportive unit leadership	Clarity of roles and responsibilities	Building nurse and faculty capacity	Facilitating student learning	Communicating regularly at systems and unit levels	Evaluating and sustaining the model
Claeys (2015) Belgium ⁴⁰			Learning culture more positive when placements longer than four weeks, fewer students, sufficient supervision by same mentor, joint consultations. Safe learning culture. Sufficient variety of learning opportunities. Multi-disciplinary team practice.			Need to value and recognize mentoring contributions of RNs. Provide mentors with sufficient information on educational objectives.	Safe learning culture provides environment where mentors can challenge students more to assume responsibility. Consider DEUs for final year placements.	Need sufficient consultation between mentor, student and faculty – joint meetings at least during interim and final evaluations.	
Crawford (2018) New Zealand ⁴¹	Collaborative working group. Most DEUs are with one designated academic program. This pilot was with three different programs.		Community of practice approach. Approachable and supportive RNs. Nurturing and positive learning environment. Students feel like they are part of the team.	Supportive structure for student learning included a range of learning opportunities and clear roles and responsibilities.	RN is clinical liaison nurse experienced in supporting student learning. Faculty is academic liaison nurse who supports integration of theory and practice. Work collaboratively to facilitate and assess student learning. Learning partnership between student, RN and faculty.	Orientation to community of practice approach to supporting student learning. Understanding of level of student and the DEU model. Need to monitor RN workload when new to the role. Student peer learning.		Roles and responsibilities need to be clear and communicated.	
Dapremont (2013) US ⁴²	Multiple meetings. Relational governance type contract or agreement initiated, based on trust and goodwill between institutions.				Faculty liaison role. Grading of assignments by RNs was a concern. This responsibility was shifted to the faculty. Faculty provided pre- and post-conference experiences.	Orientation provided for RNs by faculty to roles and expectations. Continued orientation each semester.		Weekly communication between faculty liaison and RNs. Open lines of communication between RNs and students.	
Dean (2013) US ⁴³	Partnership.		Dynamic learning environment.	Employers believed graduates were better prepared for practice.	RNs as CIs.	Orientation for RNs.	Awareness of student strengths and challenges.	Meeting between manager and faculty to develop student-RN pairs.	Monitoring to identify gaps in program or areas for improvement.
DeMeester (2012) US ⁴⁵	Shared vision, governance and mutual benefits. Contractual agreements. Importance of senior alliance.	No two DEUs work alike. Operational processes and logistics tailored to each context and culture.	Synergy of learning		RN as CNCI (staff nurse clinical instructor) – promote engagement and student learning. Faculty support RNs with teaching, problem solve.	Orientation workshops. Faculty self-studied about the DEU model.	Weekly meetings with faculty. Debriefing. Three-way conversations (learning triangle) between student, RN, faculty.	Meetings between senior leaders. Developing trust between faculty and nurses through regular contact and presence.	

(Continued)									
Sources	Characteristics					Processes			
	Effective academic-practice partnership	Adaptability to diverse contexts	Unit culture of educational excellence	Responsive and supportive unit leadership	Clarity of roles and responsibilities	Building nurse and faculty capacity	Facilitating student learning	Communicating regularly at systems and unit levels	Evaluating and sustaining the model
DeMeester (2016) US ⁴⁴	United vision and shared governance must underlie formation of a successful DEU. Contractual agreements, alliances of upper management. Create framework that will meet the needs of all stakeholders.	Assess for required modifications depending on context.	DEU as synergy of learning underlies learning environment.	Working collaboratively at unit level with shared expectations and mutual respect. Scheduling logistics. Address concerns about evidence-informed practice.	Shift in faculty role from primary educator to facilitator. Changed relationality with students. Finding right level of physical presence. Provided mentoring and support for CIs.	Faculty preparatory approaches for engaging with the DEU model. Importance of orientation and RN preparation. Ongoing support of CIs – including appropriate expectations of students.	Individual or group debriefing by faculty, online forums.	Trust as reciprocal phenomenon. Frequent and intentional communication between CI and faculty. Using multiple methods of communication.	Ongoing evaluation, continuous QI needed.
DEU project team (2008) New Zealand ⁴⁶	Endorsement from senior academic and practice leaders as preferred model. Governance group.		Environment where student questions and contributions are encouraged and valued. Students considered part of the health care team.		Clinical lecturer consistently assigned to one area, provides support – as academic liaison nurse. RNs are clinical liaison nurses – organize learning experiences.	Workshop for potential units.	Orientation by clinical liaison nurse to area. Incidental student learning through working with team.	Communication and support strategies developed.	Evaluation of pilot.
Devereaux Melillo (2014) US ⁴⁷	Statewide conference on long-term care as clinical education site. Partnership should address mission, goals, strategic plans of each partner to assure a shared vision. Equal voice at table. Organizational structure developed. Mutual trust vital.		Students are integrated into the clinical environment. All interdisciplinary staff support student learning. Berna's partners in caring model.		Job description developed for role of clinical teacher. CT provides student progress updates. Faculty provided oversight, mentorship, conducted student evaluation.	Consistent and ongoing support of RNs by faculty. Clinical binder, workshops, videos of teaching scenarios.	Each student seen at least weekly by faculty. Site visits three to four times per week. Peer teaching encouraged and valued.	Daily and weekend faculty coverage to respond to questions and concerns. Monthly meetings of planning team.	
Dorcy (2016) US ⁴⁸	Memorandum of understanding.			Flexible funding support from institution.	Faculty provide oversight, provide guidance for students and preceptors. RNs provide direct learning support. Shared model of teaching and assessment.	Preceptor training, focus on principles of adult teaching and learning.	Weekly teaching seminars, didactic lectures, grand rounds.		Evaluation of program components with recommendations for improvement related to shift schedule. Evaluation including hiring of graduates, retention, NCLEX.

(Continued)									
Sources	Characteristics					Processes			
	Effective academic-practice partnership	Adaptability to diverse contexts	Unit culture of educational excellence	Responsive and supportive unit leadership	Clarity of roles and responsibilities	Building nurse and faculty capacity	Facilitating student learning	Communicating regularly at systems and unit levels	Evaluating and sustaining the model
Dyar (2019) Sweden ¹⁸			Learning central part of daily life across all professions. Learning seen as continuous process for all professions at all stages. Pedagogical atmosphere. Characteristics of community of practice.		RNs as nurse supervisors – guides, role models, helpers.		Near-peer shifts. Student-led learning. Increasing independence. Multiprofessional meetings for education. Learning by doing, theoretical discussions, observing other practice. Student-dedicated space. Pauses for teaching actively created as normal ward activities.		
Edgecombe (1999) Australia ²⁰	Strategic collaboration between academia and practice. Ongoing collaborative process grounded in trust and respect. Partnering commitment to ensure optimal environment.		Culture of excellence mutually established by proficient clinicians and teachers.	Strategic liaison with nursing management.	RNs supervise patient care, mentor students. Faculty ensure appropriate learning opportunities; collaborate with RNs and students about teaching and learning; student evaluation.	Orientation for RNs.	Peer teaching. Role modeling. Student workshops on teaching and learning. Clinical conferences. Reflection on practice. Perceptive preceptoring.	Formal fortnightly meetings between ward staff and academic facilitators to monitor DEU functioning and student progress. Maintenance of constant dialogue.	
Eskilsson (2015) Sweden ⁴⁹			Ekeburghs' lifeworld didactics.		Clinical lecturers and RN supervisors conduct student appraisal in dialogue with students. RNs have dual role in supporting patients and students. Patients feel secure when they can trust that the RNs are on hand when needed.		Patients incorporated as part of the students' learning process – genuine encounters.		
Fox (2017) US ⁵⁰	Philosophical basis of trust and respect between clinicians and academics.	Adaptation to long-term care context.	Assess readiness for supporting student learning. Practice of collaborative nursing. Students feel integrated into clinical area.	Address RN concern about increase workload.	RN as role model.		Interdisciplinary learning, increasing responsibility.		Cyclical evaluation is necessary.

(Continued)									
Sources	Characteristics					Processes			
	Effective academic-practice partnership	Adaptability to diverse contexts	Unit culture of educational excellence	Responsive and supportive unit leadership	Clarity of roles and responsibilities	Building nurse and faculty capacity	Facilitating student learning	Communicating regularly at systems and unit levels	Evaluating and sustaining the model
Freundl (2012) US ⁵¹	Enable mutually beneficial relationships. Regional partnership. Leadership group for strategic direction and oversight. Operations group for implementation.		Learning community framework. EBP as pillar.	Nurse manager commitment to model. Highest potential capacity.	Health system RNs hired as faculty – linked student learning needs with practice opportunities.	RNs keep faculty informed of current trends.	Co-learning as central approach – all individuals are both learners and teachers. Context-specific modules developed. Students present EBP projects to team.	Regular meetings of leadership and operations groups. Web platforms. Focus on interdisciplinary care and communication. Clear communication is a priority for addressing operational concerns. Cross-committee representation.	Student survey tool developed for beginning and end of rotation feedback.
Galuska (2015) US ⁵²			DEU as supportive, nurturing learning environment. Community of practice.		CI provides learning opportunities and guidance for students. CI facilitates professional identity formation process. CFC interacts regularly with students, mentors and supports the CI, conducts student evaluations.		Learning focused on leadership skills. CFC held post-clinical conferences. Learning through immersion, exposure to more complex situations.		
George (2017) US ⁵³			Bandura's social learning and self-efficacy theories.		Faculty are CFCs. RNs are CIs.	Orientation provided by CFC to CIs.			
Glazer (2011) US ⁵⁴	Partnership developed to create DEUs. Developed structure, principles, goals. Shared commitment to education, excellence, and diversity. Cross-institutional task force. Mutual trust.		Commitment to teaching, reputation for innovation. Culture where precepting, mentoring and learning were the norm. Students feel like part of the team. Welcoming and supportive environment.	Strong unit leadership. Director welcomed DEU as opportunity and catalyst for staff development. Balanced unit placement capacity with unit capabilities. Monitored overall operations, supported scheduling and other logistics. Participated in orientation activities.	Task force clarified roles and responsibilities for CI and CFC. CI responsible for ongoing guidance, mentoring. CFC responsible for final student evaluation, supporting CIs, nurturing development of professional identity.	Orientation for CIs about curriculum, learning expectations, teaching strategies.	CFCs present on unit, consulted with students and CIs about strategies for meeting learning needs. Unit-specific EBP projects.	Task force members provided progress reports to senior leaders, with unit teams, faculty. Dialogue at staff meetings, individual discussions.	Formal evaluation underway.
Glynn (2017) US ⁵⁶	Commitment of partners to provide necessary infrastructure.			Support ensuring appropriate staffing levels.	Expert RN is CI, provides instruction related to clinical skills and critical thinking, mentoring, advising. Onsite academic faculty serve as coach.	CI informed of curriculum, DEU model, student evaluation process. Structured orientation is helpful.	CIs helped students develop weekly learning goals. Coordinated learning with other courses.	Regular meetings helpful between faculty and CIs.	

(Continued)									
Sources	Characteristics					Processes			
	Effective academic-practice partnership	Adaptability to diverse contexts	Unit culture of educational excellence	Responsive and supportive unit leadership	Clarity of roles and responsibilities	Building nurse and faculty capacity	Facilitating student learning	Communicating regularly at systems and unit levels	Evaluating and sustaining the model
Glynn (2019) US ⁵⁵					Expert RN is CI. Onsite academic faculty coach CIs in role of nurse educator.	Orientation to role. CI informed of curriculum.	Supported in transition to practice process. Reflective discussions.		
Gonda (1999) Australia ²¹		Propose using in non-traditional environment.	Supportive environment. Students felt like part of the team.		RNs supervised patient care, mentored students. Academic facilitators ensured relevant clinical experiences could meet learning outcomes, worked directly with students, collaborated with RNs on evaluation.		Multidisciplinary tutorials by visiting academics. Assisting development of links between theory and practice. Peer teaching.	Formal fortnightly meetings between ward staff and academic facilitators to monitor DEUs and student progress.	Evaluation of implementation.
Gordon (2020) US ⁵⁷	Shared mission and vision between academic and practice partners. Synergistic contract.		Commitment to build an optimal learning environment. Kolb's experiential learning theory. Peplau's theory of interpersonal relationships.	Follow up on unit concerns.	RNs are CIs – teaching role. Faculty – supervisory role, mentor CIs. Faculty are clinical nurse faculty – liaison between practice and academia, professional development coach for CIs, evaluate students.	Facility orientation. Specialized training. Ongoing mentorship.	Onboarding. Immersive experiences. Post-conferences with clinical nurse faculty. Socialization to role of RN. Inclusion of students in conversation. Accessibility of CIs. CIs maintain dignity and respect in relationships with students. Clear expectations for learning. Faculty-rounding, coaching, visibility.	Communication trust between student and CI.	
Goslee (2020) US ⁵⁸		Adapt to rural primary care clinic setting.	Positive clinical learning environment, students feel valued as part of team.		RN as educator – clinical nurse teacher. Three-way communication between student, RN, and educator.	Faculty have in-depth understanding of RN role. Orientation session prior to start of practicum.	Preparatory assignments for students before starting practicum, based on suggestions from RNs. Immersion helpful. Continuity of RN helpful.	Good communication important between RNs and faculty throughout the practicum, being available.	
Grealish (1997) Australia ²⁹			Student learning is primary concern in clinical area.		RNs as preceptors – assess student competence. Faculty – faculty supervisors – regularly visit each dyad, supervise. Program convenor from academia – responsible for placement and program administration.	Teaching support and development from faculty. Cross institution appointments.	Faculty hold weekly student seminars. Socialized into RN role.	Regular meetings between practice and academia.	Program convenor responsible for program evaluation.

(Continued)									
Sources	Characteristics					Processes			
	Effective academic-practice partnership	Adaptability to diverse contexts	Unit culture of educational excellence	Responsive and supportive unit leadership	Clarity of roles and responsibilities	Building nurse and faculty capacity	Facilitating student learning	Communicating regularly at systems and unit levels	Evaluating and sustaining the model
Grealish (2004) Australia ⁵⁹	Change plan developed in partnership between unit manager and faculty. Regular team meetings for planning.	Adaptation to specialist cancer context.	Community of practice approach – learning is social and experiential. Inquiry-based practice environment. Students feel sense of belonging.	Attentive to balancing teaching responsibility with service responsibility. Inclusion of staff in decisions that affect their practice.	Faculty (principal academic) provide guidance to RNs. Clarity about delegation of patient care needed.	RN workshops on DEU model. Guidance for RNs on creating atmosphere of critical inquiry. Philosophical shift about how learning occurs in clinical practice.	Continuous practice time in one location. Reflection on learning.	Regular committee meetings to clarify model and plan for future semesters. Used handover times for communication. Share agendas prior to meetings. Circulate summaries of meetings. Newsletters.	Regular monitoring reports.
Hannon (2012) US ⁶⁰			Community of practice. Students felt like members of the nursing team.	Unit manager critical to success, assist with buy-in with team. Recognize link to new graduate recruitment.	RNs as clinical instructor – teach and provide patient care. Faculty provide coordination and support CI to develop critical thinking in students. Faculty meet with CIs before practice to discuss each students' strengths and challenges.	Orientation for RNs. Coaching on weekly basis to all RNs. Faculty meet with team before the start of the practicum. Faculty spend time on unit prior to assure positive learning culture.	Faculty on unit, meets with students before and after clinical. Trust with CI, leading to increased independence. Immersion. Consistency in CI. Students less anxious knowing CIs are interested in teaching.	Communication key to success at all levels.	Develop standardized evaluation survey.
Harmon (2013) US ⁶¹	Trust between college and hospital nursing director. DEU task force.	Adaptation to rural setting.	Encouraging and respectful environment. Sense of community. Knowles' principles of adult learning.		Formalization of roles. RNs as hospital clinical teachers. Hospital clinical teachers and faculty meet frequently with students. Faculty provided oversight to students, supported hospital clinical teachers.	Orientation for RNs.	Inservice for students at beginning and throughout. Continuity of hospital clinical teachers developed trust, increased independence.	Clear week-to-week outlines of simultaneous classroom learning. Faculty available by phone for consultation and debriefings.	
Heidelberg (2017) US ⁶²	Academic-clinical partnership.				RNs as CIs.		Immersion in practice environment.		
Heiskell (2019) US ⁶³	Academic-practice partnership.				Faculty (DEU coordinator) coaches CIs, facilitates learning activities, organizes clinical experiences. RNs as CIs – guide student learning.		Consistent relationship with CI facilitates deeper learning. CIs create clinical experiences that improve student application of theory and knowledge.		

(Continued)									
Sources	Characteristics					Processes			
	Effective academic-practice partnership	Adaptability to diverse contexts	Unit culture of educational excellence	Responsive and supportive unit leadership	Clarity of roles and responsibilities	Building nurse and faculty capacity	Facilitating student learning	Communicating regularly at systems and unit levels	Evaluating and sustaining the model
Hunt (2015) US ⁶⁴	Close collaboration between academic and clinical organizations. Senior executive support.		Positive work and learning environment. Students feel welcomed by team.	Choose preceptors. Monitor staffing complement.	Need clear role descriptions. RNs as preceptors – support students to provide patient care. Faculty – clinical instructors, available onsite, student evaluation.	Workshop. Faculty provide continuing education on topic of RN choice.	Peer teaching. Consistent preceptor facilitates learning. Immersion into professional nursing role. Engage in interdisciplinary rounds. QI projects.	Faculty hold formal meetings.	
Jayasekara (2018) Australia ⁶⁵	Joint appointment between practice organization and academic organization.		Optimal teaching and learning environment.		Ward clinician assigned as supervisor and assessor, no patient load – facilitated learning. Roving clinical facilitator – faculty.	Provide education and support to RNs on theoretical and teaching skills.	Student orientation to unit. Peer teaching.	Consistent monthly meetings, timeline for implementation.	
Jeffries (2013) US ⁶⁶	Executive steering committee. Mission, vision, guiding principles developed. Operations task force committee. Curriculum committee.		Experiential progressive learning environment. Student as member of health care team. Sense of belonging.	Criteria for units. Recruitment and meaningful reward of preceptors. Unit manager identifies preceptors and develops supportive schedules.	Role descriptions and roles and responsibilities document developed. Clinical preceptor. Clinical faculty – resource for preceptors. Guidelines for student evaluation. Hospital program coordinator – identifies units for inclusion in program, liaises with academic and practice leaders.	Supportive documents developed on clinical skill emphasis, academic program overviews. Preceptor orientation and appreciation workshops. Checklists for student evaluation. Tools developed to facilitate communication.	Mid-semester meetings to review progress. 1:1 relationship facilitates learning.	Established new communication patterns between preceptors and faculty. Continuous communication at multiple levels, including executive, to clarify expectations and resolve issues. Term by term planning. Regular communication in bachelor of science in nursing curriculum, faculty senate and course coordinator meetings. Weekly debriefing meetings during implementation.	Evaluation committee – developed tools. Financial and economic modeling committee.
Jones (2017) US ⁶⁷	Academic-practice partnership, service agreement. DEU leadership team. Mission statements reviewed and integrated into model.		Unit culture important.		Faculty – academic liaison, faculty coordinator, who made assignments, oriented students, met with students after every clinical experience. Practice – clinical liaison.	Orientation. Preceptors given access to academic electronic learning system, three-part preceptor course in learning system. Faculty coordinator well-acquainted with unit culture, routine, and staff.	Students supported by consistent preceptors.	Ongoing exchange of information about implementation. Midterm and end-of-term meetings between clinical educator, academic liaison, students, and preceptors.	Continuous adjustments. Roger's diffusion of innovation theory.
Koharchik (2017) US ⁶⁸	Collaborative development of plan, process, and working model.		Favorable learning environment.	Respond to concerns identified by CTAs.	Explication of roles and responsibilities. Three-way relationship between students, RNs (CTAs), and CIs.	Workshop prior to implementation.	Student orientation to unit and role of CTA. Attend rounds, reports, educational programs. Receive daily feedback from CTAs.		

(Continued)									
Sources	Characteristics					Processes			
	Effective academic-practice partnership	Adaptability to diverse contexts	Unit culture of educational excellence	Responsive and supportive unit leadership	Clarity of roles and responsibilities	Building nurse and faculty capacity	Facilitating student learning	Communicating regularly at systems and unit levels	Evaluating and sustaining the model
Krampe (2013) US ⁶⁹	Academic-service partnership. Strategic planning meetings before and after each semester.		Teaching environment where practice and education intersect.		RNs as clinical instructors. Faculty as coaches.	Preceptor preparedness course, from in person to online.	Support from consistent CI.		
Lloyd-Ponza (2019) US ⁷⁰			Welcoming and supportive learning environment. Positive clinical learning environments.		RNs as CTAs. Faculty provide in-the-moment student feedback and coaching. Continuous student evaluation by faculty and CTA.	Precepting learning modules. Individual discussion.	Continuity of CTA support. Enhanced learning with students present for 12-hour shifts. Developed typical day schedule to assist students in planning their day.		Evaluation to support quality improvement.
Masters (2016) US ⁷²	Strong partnerships between health care organizations and schools of nursing.		Optimal teaching and learning environment.		RNs as CIs.	CI workshop.	Continuity of relationship between student and CI – trust, therefore less anxiety. Nurturing of professional formation.		Embed evaluation into routine course evaluations.
McKown (2011) US ⁷¹			Students felt like part of the team.		RNs are clinical teachers, organize learning activities. Extra support provided by unit-based patient care coordinators. Faculty co-teach with clinical teachers, mentor clinical teachers, responsible for final student evaluation.	Clinical teachers workshops.	Mid-point debriefings. Increased amount of productive learning time.	Challenging to meet in groups, so faculty met individually with clinical teachers.	
Miller (2005) US ²⁴	Interactive and accountable partnership between academic institution and practice partner. Development team. Created shared vision and mutual goals.		Environment in which socialization of students and staff, and support for education, is evident. Educational infrastructure that enhances development of all. Clinical learning environment is a primary condition of the unit.	Provides space for faculty and students.	Faculty member as resource for staff, plans activities to meet learning needs of students, evaluates students. Expanded role of clinical nurse specialist as interface with academia, teaches students and resource for staff.	Orientation to BSN program for RNs by faculty. Orientation to unit for faculty by clinical nurse specialist.	Extended time in one practice setting for depth of learning. Encourage critical thinking and problem solving.	Regular dialogue between senior academic and practice leaders. Immediate communication about issues prompts resolution. Monthly meetings to discuss roles.	Utilize already collected data to reduce measurement burden.

(Continued)

Sources	Characteristics					Processes			
	Effective academic-practice partnership	Adaptability to diverse contexts	Unit culture of educational excellence	Responsive and supportive unit leadership	Clarity of roles and responsibilities	Building nurse and faculty capacity	Facilitating student learning	Communicating regularly at systems and unit levels	Evaluating and sustaining the model
Moore (2013) US ⁷³	Extensive planning between agency and school.			Nurse administrators encourage the model, manage staffing, compensate CIs.	RNs as CIs, supervise patient care. Faculty oversee student assignments in partnership with CIs, retain accountability for student evaluation.	Orientation for CIs.		Individuals required to be effective communicators.	Ongoing follow-up. Debrief with students and staff at end of term for formative evaluation of model.
Moscato (2007) US ²³	Executive-level partnership. Shared vision.	Expanding to additional settings.	Commitment to optimal practice and learning environment for students.	Leaders in relationships with both executive and RNs. Identified CIs. Adjusted staffing rotations.	Essential to understand roles and responsibilities. RNs as CIs – teach students. Faculty as CFCs – support CIs, daily presence on unit.	Collaborative development activities. Orientation workshops. DEU handbook. Resource materials – cue sheets, forms, simulations.	Relationship building with CI, consistency, increased accountability. More trust, less fear. Clinical reasoning activities. Peer teaching.	Project coordinators. Regularly scheduled meetings at each partnership level. Clear consistent communication essential – dinner meetings, consortium.	Multiple methods to assess implementation and expansion. CFC time survey. Pre-post student surveys. Primary focus of sustainability. Change theories.
Moscato (2013) US ⁷⁴	Strong academic-service collaboration. Commitment from both partners. Endorsement by senior leaders with resources. Shared assumptions. Mutual respect, trust. DEU planning team, including coordinator. Advisory committee.	Replication to additional sites in a range of settings.	Optimal, open, inclusive teaching and learning environment. Students become part of the unit. Unit delivers exemplary care. Teaching is a high priority.	Assure adequate workspace, computer availability. Selects CIs.	RNs are CIs, provide bedside clinical instruction. Faculty are CFCs, coach CIs, maintain relationships with unit, ensure unit atmosphere promotes learning.	Orientation for CIs. Implementation checklist.	CFC ensures students understand theoretical and conceptual concepts that guide their care. Learning by doing. Practice clinical reasoning. Early identification and support of struggling students.	Conversations, negotiations, team building prior to implementation. DEU implementation checklist. Address regulatory, union, organizational factors. Information-sharing meetings. Discussions and events to gain staff buy-in. Establish communication procedures related to student progress, CI and CFC check-ins. Regular advisory meetings.	NCLEX pass rates consistent. DEU coordinator ensures program quality, oversees continuous QI and sustainability. Embedded internal evaluation systems.
Mullenbach (2012) US ⁷⁵	Shared commitment to implement model. Developed purpose, goals, and objectives.	Adapted to gerontology setting.			RNs supervised practice, provided feedback to faculty. Faculty oriented students, supported RNs, conducted student evaluation.	Orientation. Additional teaching resources provided.	Focus on critical thinking, problem solving by reflective questioning. EBP projects. Skills checklist.		

(Continued)

Sources	Characteristics					Processes			
	Effective academic-practice partnership	Adaptability to diverse contexts	Unit culture of educational excellence	Responsive and supportive unit leadership	Clarity of roles and responsibilities	Building nurse and faculty capacity	Facilitating student learning	Communicating regularly at systems and unit levels	Evaluating and sustaining the model
Mulready-Shick (2009) US ⁷⁸	DEU task force, clinical partnership model. Shared goals.		Collaborative milieu. Cooperation and welcoming attitude and teamwork. Students feel like part of the team.	Approved RNs for CI role.	RNs as CIs. CIs seek student learning opportunities.	Extended orientation for CIs. CIs met college CI guidelines.	Unit-based QI projects. Smaller student-teacher ratio. Access to hospital systems and resources. Ability to practice holistic care. More opportunities for teachable moments due to increased time on task.	New relationships formed at many levels.	Pilot study approaches could be mechanism for sustaining ongoing evaluation efforts.
Mulready-Shick (2013) US ⁷⁷	Academic-practice partnership. Shared vision.				RNs as CIs. Faculty as CFCs – ongoing support for CIs, grade students. Academic team leader oversees clinical learning activities for all groups.	Orientation.	Frequent opportunities to develop competencies. Instructional situated coaching.		
Mulready-Shick (2014) US ⁷⁶	Mutual respect. Mutual benefits. Flatter hierarchical relationships and greater horizontal interactions. Sustainable mature clinical education partnerships.		Unit as learning laboratory.	Support team to support DEU model. Identify appropriate balance of students for each unit. Provide flexibility in patient assignments – involve CIs. Hire RNs interested in teaching.	Faculty as CFCs. RNs as CIs.	Orientation. Continuing education.	EBP projects.	Active participation by regional groups. Ongoing communication at all levels required but challenging. Cooperative and collaborative behaviors.	Logic model developed to study sustainability. Solid infrastructure required. Regular data collection. Make DEU results visible. Routinize, reinforce, reward activities. Continual creation of meaning and resources – until it becomes second nature.
Murray (2010) US ⁸⁰	Academic-service partnership. Steering committee. Clinical affiliation agreement. Effective partnerships manifested by mutuality in ownership, attentiveness, responsibilities, voice, power, influence.		Unit as optimal teaching and learning environment. Student-centered unit.		RN as preceptor – model, coach, integrate student into care. Faculty support, coach preceptors – visit frequently, communicate with preceptor and student, evaluate student.	Preceptor orientation.	Simulation preparation. Individual relationship with preceptor – goodness of fit. Immersion into complexity of practice. Full shift rotation experience, with progressively enhanced patient loads.	Communication at executive level. Communication with state boards. Ensure communication continues through change in partner representatives.	Sustainability is key to consider when studying project impact. Logic model, partnership model.

(Continued)									
Sources	Characteristics					Processes			
	Effective academic-practice partnership	Adaptability to diverse contexts	Unit culture of educational excellence	Responsive and supportive unit leadership	Clarity of roles and responsibilities	Building nurse and faculty capacity	Facilitating student learning	Communicating regularly at systems and unit levels	Evaluating and sustaining the model
Murray (2011) US ⁷⁹	Academic-practice partnership – mutuality of benefit, replicability, sustainability. Shared vision, values, purpose. Goodness of fit between partners. Partnership steering team – combines contractual and relational modes of governance. Guidelines for partnership responsibilities.					Preceptor orientation.		Communication at executive level. Ongoing discussions about project inputs and outputs.	Evaluated partnership itself using established frameworks, including logic model, partnership model.
Nguyen (2020) Australia ⁸¹	Long-term collaboration.	Variation in elements such as student to faculty ration, length of clinical experience, individual or group preceptoring.	Productive, welcoming learning environment. Students feel accepted, belonging, and support.		Range of terminology for RNs and faculty. RNs support student learning, and faculty support RNs and students.		Benefited from organizational familiarity, consistent, individualized, and interactive learning. Increased engagement in team activities.	Effective communication at ward and organizational levels.	
Nishioka (2014a) US ⁸²		Adaptable to a range of clinical settings.	Students feel welcomed as members of the unit. Unit-wide commitment to teaching.	High-quality unit leadership. Manager part of the team.	Roles and responsibilities were clearly defined. RN as CI, facilitate learning, mentor. Faculty available for consultation, problem resolution.	Orientation for CIs.	Integration into unit flow and culture. CI consistent, familiar with student skill-level and tailored learning. Team-based opportunities. Holistic experience. Socialization into RN role.	Established communication and organizational procedures. Regular communication between CI and faculty.	Unit team buy-in to DEU model essential for positive student outcomes.
Nishioka (2014b) US ⁸³	Academic-clinical partnerships		Unit-wide commitment to teaching. Students as part of the team.	Collaborates with CFC to ensure students have relevant clinical learning experiences. Appreciates effort of RNs. Priorizes quality clinical education.	Clear role definitions. RN as CI – responsible for patient care and clinical education. Faculty as CFC – responsible for mentorship, coaching, supporting CIs, resolving issues, grading students. CFC and CI meet daily.	CFC learn culture and workflow of unit. CI orientation.	More continuity of mentoring relationships, clinical learning progression. Learning and guidance from whole team. Integrated experience.	CFC available by pager. Respond to email daily. Continuity of relationships. Consistency of communication.	
O'Lynn (2013) US ⁸⁴	University-faculty team.	Adaptation to long-term care setting.			Was greater clarity of roles and responsibilities. Faculty provided pedagogical oversight, continual on-site presence when students practicing. Different team members (not just RNs) as primary instructors.	Orientation.	Utilized team model. Students rotated through different roles. Simulation assignments. Increased responsibilities due to knowledge of student learning needs. Enhanced collaboration and communication competencies.		

(Continued)									
Sources	Characteristics					Processes			
	Effective academic-practice partnership	Adaptability to diverse contexts	Unit culture of educational excellence	Responsive and supportive unit leadership	Clarity of roles and responsibilities	Building nurse and faculty capacity	Facilitating student learning	Communicating regularly at systems and unit levels	Evaluating and sustaining the model
Parker (2012) US ⁸⁵			Learning organization, teaching mission.	Administrative support. Shared governance.	RNs as CIs.	CI orientation, staff training.	Experiential learning.		Donabedian's health care quality model.
Pfannes (2019) US ⁸⁶	Collaborative academic-practice partnership. Leadership team – guiding coalition. Shared vision. Memorandum of understanding.		High-quality collaborative clinical learning environment.	Work closely with CFC and others. Charge nurse manages assignments. Manager/director manages overall unit logistics.	Recommend position of academic-practice partnership coordinator to oversee DEU model long term. RNs as CDI – guides student learning. Faculty as CFCs – coordinate and mentor CDIs, resource for unit, evaluate student	Toolkit – binder, education plan. Clinical DEU instructor training and staff orientation.		Information sessions as part of planning. Resources for planning new DEU: implementation checklist, work plan template, guide, instruments. Communication plan for various stakeholders.	Careful consideration of sustainability. Ingrain DEU into organizational culture. Guide for evaluation and sustainability developed. Kotter's change model.
Plemmons (2018) US ⁸⁷	Collaborative agreements.		Students embraced as part of the health care team. Bandura's social learning and self-efficacy theories.		RN is clinical expert.	Nursing staff development and ongoing education.	One-to-one instruction. Team-based learning. More direct and vicarious learning opportunities.		
Polvado (2015) US ⁸⁸	Strong academic-practice administrative support. Project directors.		Community of practice.	Application process for CIs. Related to hospital clinical ladder. Monitor CI workload.	RNs as CI. CI and faculty partner dyads. Faculty provide support for CIs.	Orientation to DEU model for directors, managers, administrators, faculty. Staff orientation. Clarity about learning objectives. Ongoing professional development.	Student orientation. Clarity about learning objectives.	Ensure understanding of model across all stakeholders. Adequate planning and implementation time.	
Raines (2016) US ⁸⁹	Academic-clinical partnership. High level of collaboration, planning and organization. Commitment, trust, respect. Shared vision, objectives.	Adaptation to maternal-infant setting.	Create learning environment where students learn, nurses grow professionally, and patients receive high-quality care. Culture open to learning and teaching. Knowles' principles of adult learning.	Recognize roles of leadership. Identify RNs for CI role. Plan unit staffing to maintain DEU continuity. Participate in establishing vision. Establishes learning culture.	RNs as CIs – teach, provide feedback on student progress to faculty. Faculty – educate, prepare, and support RNs, rounds three times daily with students, grades students.	Orientation. Ongoing in-services by faculty.	Setting-specific handbook. Orientation. Simulations. Self-directed learning. Team teaching. EBP projects.	Debriefing at end of each term with director, nurse manager, faculty, students, RNs – identify positives and areas for improvement.	Evaluation and QI data from end of term reviewed on a term-by-term basis.

(Continued)									
Sources	Characteristics					Processes			
	Effective academic-practice partnership	Adaptability to diverse contexts	Unit culture of educational excellence	Responsive and supportive unit leadership	Clarity of roles and responsibilities	Building nurse and faculty capacity	Facilitating student learning	Communicating regularly at systems and unit levels	Evaluating and sustaining the model
Ranse (2007) Australia ⁹⁰			Students feel accepted as part of the team. Staff interest in student learning. Community of practice. Knowles' principles of adult learning.	Involve team in planning, implementation, monitoring.		Adequate preparation prior to clinical time.	Learning as active social participation. Students experience complexity of practice. Peer learning. Reciprocal learning between students and RNs. Appropriate learning assignments. Incidental learning opportunities through immersion. Critical reflection.	Open forums for clinicians.	
Rhodes (2012) US ⁹¹	Academic-service partnership. Continued collaboration crucial to success of model.		Optimal teaching and learning environment. Students feel like part of the team. Organizational culture that supports learning.	Committed to teaching and learning. Address any compensation, support, or workload issues.	RNs – provide expert clinical practice, coach students. Faculty is CFC – support RNs with teaching approaches, evaluate assignments.	Provide mentorship about how to teach students to critically think and utilize EBP.	RNs aware of learning needs and capacity and can appropriately assign practice and increase responsibility. Encourage critical thinking.		
Rusch (2018a) US ⁹²					RNs are preceptors and primary instructors. Faculty support the RN-student relationship.		Consistent engagement with preceptor. Fluid learning, increased skill opportunities.		
Rusch (2018b) US ⁹³	Collaborative partnership. Mutual respect and trust. Project director.	Resources modifiable for different settings.			Triad relationship. RN is staff nurse instructor, assess student progress. Faculty – intentional presence (purposeful rounding at regular intervals), engagement.	Clear expectations for student learning and progression. Resources developed including: faculty rounding guide, progression guide.	Focus on developing student clinical reasoning skills. Clear weekly progression expectations.	Faculty – frequent communication with staff nurse instructor and students. Regular faculty meetings about implementation. Faculty establish physical presence on unit and establish trust.	
Ryan (2011) US ⁹⁴	Academic-practice collaboration.	Adapted to pediatric setting.	Full team took responsibility for student learning.	Contribute to development of roles and responsibilities. Recruit RNs. Faculty – made patient assignments, onsite, provided support to CI, negotiated concerns, evaluated student learning.	RNs as CIs – assessed student progress.	Educational sessions. Daily clinical conferences.	Orientation. Increased exposure to and participation in scope of RN practice. Enculturation and social networking. Effect of teamwork on patient care. Developing clinical judgment.	Weekly onsite meetings. Open communication between student and CI.	
Saxton (2015) US ⁹⁵			Felt welcome on the unit. Team invested in their learning. Transition theory.		RNs as CIs – role model, teacher. Faculty – shift to supporting teaching and learning, evaluation	Orientation. Clinical preparation.	Continuous and consistent learning relationship. Experienced real-world nursing.	Collegiality between RNs and faculty.	

(Continued)									
Sources	Characteristics					Processes			
	Effective academic-practice partnership	Adaptability to diverse contexts	Unit culture of educational excellence	Responsive and supportive unit leadership	Clarity of roles and responsibilities	Building nurse and faculty capacity	Facilitating student learning	Communicating regularly at systems and unit levels	Evaluating and sustaining the model
Schecter (2017) US ⁹⁶	Shared agreement on structure and processes. Collaboration between academic and service institutions.		Benner's novice to expert theory.		RNs as preceptors. Faculty – continue to be present on unit, resource for RNs, oversee student progress, student evaluation.	Orientation.	Consistent relationship facilitated learning.		
Seibert (2016) US ⁹⁷	College and medical center partnership. Stakeholder team.		Adopted health care community of practice model. Knowles' principles of adult learning.	Selects RNs.	Faculty – mentor RNs about teaching. RNs are clinical teaching partners – offer clinical expertise.	Workshop, evidence-based staff preparation curriculum. Ongoing education. Handbook. Simulations with nursing students.		Preceptors prefer frequent contact and communication with faculty to assist with challenging student situations, learn about teaching.	
Sharpnack (2014) US ⁹⁸	Academic-practice collaboration. Merged mission, program outcomes, purpose.		Benner's novice to expert theory.	Commitment to project. Select RNs with strong communication and collaboration skills.	Faculty – resolve conflicts, open communication, student evaluation. RNs – role model, mentor, provide student progress feedback to faculty.	Structured educational sessions.	Early face-to-face meeting between RN and student. Met weekly with RN and faculty. Weekly post-conference with faculty. Consistent relationship and environment helped the learning process. Experience complexity of RN role.	Monthly combined executive meetings. Weekly communication by email, site visits, phone. Consistent, timely, and targeted communication.	
Smyer (2015a) US ⁹⁹	Academic-practice partnership.	Each unit has own culture, DEU implementation must be flexible.	Commitment to build optimal learning environment.	Meet with CFC as needed.	RNs as clinical dedicated unit instructor. Faculty as CFCs – onsite, support RNs, counsel students.	Orientation to DEU model. Orientation and resource manual. Role playing. Already had formal preceptor program. Continued education and monitoring.	Orientation. Access to hospital systems. Independent collaborative relationship with CDI.		
Smyer (2015b) US ¹⁰⁰			Positive learning environment. Students feel valued and accepted by team.	Select CIs.	RNs as CIs – support student learning. Faculty as CFCs – support development of CIs, monitor student progress, on site.	Orientation. Resource binder. Ongoing education initiatives.			
Springer (2012) US ¹⁰¹	Strong academic-practice partnership. Implementation team. Shared vision, mission, values, driving forces, goals.				Roles developed for faculty and staff mentors. Faculty – support mentors, guide student learning, grade. Mentors – work in preceptor model.	Orientation, annual skills maintenance and semester review.	Orientation. Daily clinical conference with faculty. Relationship-based accountability with mentors.	Faculty present at set times on unit.	

(Continued)									
Sources	Characteristics					Processes			
	Effective academic-practice partnership	Adaptability to diverse contexts	Unit culture of educational excellence	Responsive and supportive unit leadership	Clarity of roles and responsibilities	Building nurse and faculty capacity	Facilitating student learning	Communicating regularly at systems and unit levels	Evaluating and sustaining the model
Terry (2019) US ¹⁰²	Collaboration between hospital and university. Action group to oversee operations.	Exemplary practice environment.		Present DEU model to staff.		Provide workshops. Develop orientation program.			Encourage continuous reflection for improvement.
Tochterman (2016) US ¹⁰³	Academic-service partnership.		Students feel like they are part of a team. Community of practice – all members learn and transformation occurs.		RN – balance role of preceptor and care provider, provide primary student learning supervision and monitoring, role model. Faculty – provide EBP research, provide support and consultation with RNs, monitor student performance, consistent presence on unit.	Orientation and training.	Mutual engagement and reflective process. Active participation. Increased role modeling and development of critical thinking. Increased interaction with RNs and faculty. More holistic approach to practice. Interprofessional interactions.		
Vnenchak (2019) US ¹⁰⁴			Transition theory.		RNs as practicing experienced nurses.	Additional education.	Less anxiety, therefore improved self-efficacy, critical-thinking skills.		
Walker (2012) US ¹⁰⁵	Shared mission, vision, values, and purpose statements. Three planning teams: implementation, research, steering.			Introduced and promoted DEU concept. Selected RNs for mentors. Checked in regularly with students and RNs.	RNs as mentors – teachers. Faculty – validate student learning, liaison between practice and education.	Orientation – online.	Orientation.		
Warner (2009) US ¹⁰⁶	Academic-service partnership. Shared mission and values. Relationships of trust, mutual respect, and clear communication.		Shared formation environment.	Staff schedule development. Contracts provide preceptor pay. Resource policies.	RNs as CIs – educator, report on student progress. Faculty – coach, mentor CIs.	Handbooks. Orientation.	Resource area for students. Daily student conference with faculty.	Quarterly meetings. Communication transparency. Clarifying policies.	Political vigilance as resources are shared.
Wotton (2004) Australia ¹⁰⁷	Academic-practice teaching and learning partnership. Common values developed.		Students as members of the team.		RN is clinical liaison nurse – communicate with principle academic, nurse in charge, and RNs. Faculty is principle academic – role model, debriefing, liaison between RNs and students.	Orientation day.	Peer teaching. Clinical conferences with PA, debriefing.	Frequent meetings between principle academic, clinical liaison nurse, and clinical staff throughout term to monitor functioning of DEU and student development.	

CFC, clinical faculty coordinator; CI, clinical instructor; CTA, clinical teaching associate; DEU, dedicated education unit; EBP, evidence-based practice; NCLEX, National Council Licensure Examination; QI, quality improvement; RN, registered nurse