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Experience Based Co-Design: Preceptorship Education Programme focusing on the development of Interpersonal and Communication Skills for Preceptors

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This thesis is submitted to University College Dublin in fulfilment of the requirement for the degree Doctor of Philosophy.

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Table of Contents

List of Tables viii
List of Figures ix
Abstract x
Statement of Original Authorship and Plagiarism Declaration xii
Author Contributions xiii
Article Permissions xiv
Publications and Presentations xv
Glossary of Terms xvii
Abbreviations xix
Acknowledgements xx

CHAPTER 1: INTRODUCTION 1

1.1 Purpose of the study 1
1.2 Background to the study 3
1.2.1 Introduction 3
1.3 Research Context 3
1.3.1 Establishment of Preceptorships in Nursing Education 3
1.3.2 Nursing Preceptorship 4
1.3.3 Nursing Preceptorship in Ireland 6
1.4 Interpersonal relationships & communication 7
1.4.2 Interpersonal relationships & communication in a nursing preceptorship 9
1.5 Preceptorship Education 12
1.6 Statement of the research problem 14
1.7 Thesis structure 15
1.8 Summary 16

CHAPTER 2: A LITERATURE REVIEW EXAMINING THE INTERPERSONAL RELATIONSHIPS IN A NURSING PRECEPTORSHIP 17

2.1 Introduction 17
2.2 Methods 18
2.2.1 Search Strategy 18
2.2.2 Inclusion and Exclusion Criteria 19
2.2.3 Data Extraction Process 19
2.2.4 Screening 19
2.2.5 Study Synthesis 20
2.3 Results 20

2.3.1 Thematic Literature Review: Factors that influence the interpersonal relationships of preceptorship 21
2.3.1.1 Orientation 21
2.3.1.2 Individual Qualities of Preceptorship Members 25
2.3.1.3 Personal attributes that positively influence the interpersonal relationships 25
2.3.1.4 Personal attributes that negatively impact the interpersonal relationships 28
2.3.1.5 Communication: Open Dialogue 29
2.3.1.6 Feedback 31
2.3.1.7 Intergenerational Differences 34
2.3.1.8 Workplace Incivility 36
2.3.1.8.1 Workplace incivility in Nursing Preceptorships 37
2.3.1.8.2 Socio-Cultural factors leading to workplace incivility in Nursing Preceptorships 39
2.4 Discussion 41
2.4.1 Critique of the current literature and future research 42
2.5 Conclusion 43

CHAPTER 3: INTERPERSONAL AND COMMUNICATION SKILLS DEVELOPMENT IN GENERAL NURSING PRECEPTORSHIP EDUCATION PROGRAMMES: A SCOPING REVIEW 45

Abstract 45
3.1 Introduction 47
3.2 Methods 51
3.2.1 Review Design 51
3.2.2 Identification Research Question 51
3.2.3 Search Strategy 51
3.2.4 Study Selection 52
3.2.5 Charting the data 54
3.3 Results: Collating, Summarising, and Reporting 54
3.3.1 Study Characteristics 54
3.3.2 Design and Development of Education Programmes 80
3.3.3 Learning Outcomes of Preceptorship Education Programmes 80
3.3.4 Pedagogical Approaches to Preceptorship Education Programmes 82
3.3.5 Development of Interpersonal and Communications Skills Development in Preceptorship Education Programmes 83
3.3.6 Evaluation of Preceptorship Education Programmes 84
3.4 Discussion 85
3.4.1 Recommendations for future preceptorship education programmes 88
3.4.2 Recommendations for Future Research 91
3.4.3 Strengths and Limitations 91
3.5 Conclusion 92

CHAPTER 4: METHODS 93

4.1 Introduction 93
4.1.1 Chapter Overview 93
4.1.2 Consideration of Different Design Science Methodologies 93
4.2 Design Science Research 94
4.3 Action Design Research 95
4.4 Co-Design 96
4.5 Experience Based Co-Design 98
4.5.1 Philosophical and theoretical underpinnings of EBCD 100
4.5.2 Strengths and weaknesses of EBCD 103
4.6 Study Design 104
4.6.1 Adaptation of EBCD to the study 105
4.7 Ethical Considerations 107
4.7.1 Informed consent 107
4.7.2 Confidentiality 108
4.7.3 Duty of Care 108
4.7.4 Obligation to Participate and Bias 109
4.8 Critical Reflection; researcher positionality 109
4.9 Summary 110

CHAPTER 5: THE APPLICATION OF REUSABLE LEARNING OBJECTS (RLOS) IN PREPARATION FOR A SIMULATION LABORATORY IN MEDICATION MANAGEMENT: AN EVALUATIVE STUDY 112

Abstract 112
5.1 Introduction 113
5.1.1 Aim of the study 115
5.2 Methodology 116
5.2.1 Design and setting 116
5.2.2 Development of the RLOs 116
5.2.3 Development of the Simulation Laboratory 120
5.2.4 Survey instruments and procedure 122
5.2.5 Sample 122
5.2.6 Data Analysis 123
5.3 Results 123
5.3.1 Demographic data 123
5.3.2 Evaluation of a Blended Learning Strategy 123
5.3.3 Evaluation of the RLO's 123
5.3.4 Evaluation of the Simulation Laboratory 125
5.3.5 Using RLOs for preparation for simulation laboratory 127

5.4 Discussion 128
5.4.1 Limitations 131
5.5 Conclusion 132

CHAPTER 6: NURSING & MIDWIFERY STUDENTS' EXPERIENCE OF IMMERSIVE VIRTUAL REALITY STORYTELLING: AN EVALUATIVE STUDY 133

Abstract 133
6.1 Background 135
6.2 Methods 138
6.2.1 Design and setting 138
6.2.2 Sample and Procedure 138
6.2.3 Investigation Tool and Methods 139
6.2.4 Data Analysis 141
6.3 Results 143
6.3.1 Demographic results 143
6.3.2 Questionnaire results 143
6.3.3 Students perception of iVR storytelling 148
6.3.4 Student's perception of levels of immersion, interaction, imagination, motivation, and enhanced problem-solving capacity during an experience with iVR storytelling 148
6.3.5 Qualitative data analysis 149
6.3.6 Observational data 152
6.4 Discussion 153
6.4.1 Limitations 158
6.5 Conclusions 158

CHAPTER 7: EXPERIENCE BASED CO DESIGN: NURSING PRECEPTORSHIP EDUCATIONAL PROGRAMME 159

Abstract 159
7.1 Introduction 162
7.2 Methods 163
7.3 Results 169
7.4 Theoretical underpinnings of new educational programme 174
7.5 Discussion 178
7.6 Conclusion 183

CHAPTER 8: KEY TIPS TO PROVIDING A PSYCHOLOGICALLY SAFE LEARNING ENVIRONMENT IN THE CLINICAL SETTING 185

Abstract 185

8.1 Background 186
8.2 What is psychological safety? 187
8.3 Methods 188
8.4 Psychological safety in clinical education 189
8.5 Psychological safety in nursing preceptorship 192
8.6 Guidelines to providing a psychologically safe environments for students 193
8.7 Discussion 203
8.8 Conclusion 203

CHAPTER 9: DISCUSSION 205

9.1 Introduction 205
9.2 Addressing the research aims 205
9.3 Identifying key touchpoints in nursing preceptorship 209
9.3.1 Student touchpoints 209
9.3.2 Preceptor Touchpoints 210
9.3.3 Patients Touchpoints 211
9.4 Key educational topics for inclusion in preceptorship education programmes 211
9.5 Pedagogical approaches to preceptorship education programmes 215
9.6 Applying EBCD to create an educational intervention in nursing education 217
9.7 Implications of the research 219
9.7.1 Implications for preceptorship education 219
9.7.2 Implications for preceptorship practice 220
9.8 Strengths and Limitations 221
9.9 Suggestions for future research 222
9.10 Key recommendations 223
9.11 Conclusion 224
9.12 Future dissemination plan 225
9.13 Reflection on the research process 226

REFERENCES 232

APPENDICES 266

Appendix A. Data Extraction Table 266
Appendix B. Interpersonal and Communication Skills Development in Nursing Preceptorship Education and Training Programmes: A Scoping Review Protocol 267
Appendix C. Ethics Approval UCD Human Research Ethics Committee 283
Appendix D: Information Leaflet and Consent Form: Students/Preceptors 284
Appendix E: Information Leaflet and Consent Form: Members of the Public/Patient 288
Appendix F: Information Leaflet and Consent Form: Design Experts 293

APPENDIX G: SEMI STRUCTURED INTERVIEW GUIDE 296
APPENDIX H: STUDENT, PRECEPTOR & PATIENT TOUCHPOINTS AND OVERARCHING TARGET BEHAVIOURS TO INCLUDE IN EDUCATIONAL PROGRAMME 298
APPENDIX I. NMBI LETTER OF PROGRAMME ACCREDITATION 305
APPENDIX J. CONFLICT RESOLUTION: PRECEPTORSHIP GUIDELINES FOR CONFLICT WITH STUDENT NURSES. ... 307

List of Tables

TABLE 1. KEY SEARCH TERMS FOR LITERATURE REVIEW 18
TABLE 2. EVALUATION OF PRECEPTORSHIP EDUCATION PROGRAMMES 55
TABLE 3. PHILOSOPHICAL ASSUMPTION OF RESEARCH PERSPECTIVES..... 101
TABLE 4. UTILIZATION OF THE REUSABLE LEARNING OBJECTIVES 117
TABLE 5. ATTRIBUTES OF THE REUSABLE LEARNING OBJECTIVES 124
TABLE 6. ATTRIBUTES OF THE SIMULATION WORKSHOP 126
TABLE 7. DEMOGRAPHIC PROFILE 143
TABLE 8. IVR STORYTELLING QUESTIONNAIRE RESULTS..... 145
TABLE 9. CO-DESIGN TEAM DEMOGRAPHICS 165
TABLE 10. OUTLINE OF STEPS AND OUTPUTS USING EBCD TO CREATE A NEW EDUCATIONAL PROGRAMME 167
TABLE 11. OUTLINE OF ACTIVE BLENDED LEARNING PRECEPTORSHIP EDUCATIONAL PROGRAMME 170
TABLE 12. KOLB'S EXPERIENTIAL LEARNING THEORY & UDL PRINCIPLES STRATEGIES FOR NURSING PRECEPTORSHIP PROGRAMME 175
TABLE 13. COMBINED USE OF EBCD, BEHAVIOURAL CHANGE THEORY & KURT LEWIN'S MODEL OF CHANGE PRINCIPLES 176
TABLE 14. GUIDELINES TO PROVIDING A PSYCHOLOGICALLY SAFE LEARNING ENVIRONMENT FOR STUDENTS 196
TABLE 15. RESEARCH OUTLINE, A SUMMARY OF FINDINGS AND CONTRIBUTION..... 207

List of Figures

FIGURE 1. PRISMA FLOWCHART LITERATURE REVIEW 21
FIGURE 2. PRISMA FLOWCHART SCOPING REVIEW 53
FIGURE 3. CONCEPTS IN PRECEPTORSHIP EDUCATION PROGRAMMES 81
FIGURE 4. PEDAGOGICAL APPROACHES TO PRECEPTORSHIP EDUCATION PROGRAMMES 83
FIGURE 5. EBCD: SIX-STEP PROCESS 100
FIGURE 6. OVERVIEW OF ADAPTED EBCD METHOD APPLIED TO THIS STUDY 106
FIGURE 7. 10 RIGHTS OF MEDICATION MANAGEMENT 119
FIGURE 8. INTRAMUSCULAR INJECTION VENTROGLUTEAL SITE 119
FIGURE 9. INTRAMUSCULAR INJECTION DELTOID SITE 120
FIGURE 10. PERCEIVED GAINS OF IVR STORYTELLING 144
FIGURE 11. SCREENSHOT OF RESUSABLE LEARNING OBJECT 172
FIGURE 12. SCREENSHOT OF ROLE PLAY SIMULATION OUTLINE 172
FIGURE 13. SCREENSHOT OF ACCOMPANYING WORKBOOK FOR THE NEW EDUCATIONAL PROGRAMME 173
FIGURE 14. SCREENSHOT OF VR STORYTELLING EXPERIENCE 173

Abstract

Background

A fundamental component of clinical nursing education is the 'preceptorship relationship', a predetermined short fixed-term relationship between a staff nurse (preceptor) and student nurse involving the delivery of patient care within a clinical environment. Highly developed interpersonal and communication skills are essential to developing successful and constructive professional relationships (Ke *et al.*, 2017). However, the literature shows that discord can arise within the preceptor-student relationship due to poor interpersonal and communication skills (Dyess & Sherman, 2009; Gardiner & Sheen, 2016; Omer & Moola, 2019). A systematic scoping review identified that current preceptorship education programmes lack focus on developing interpersonal and communication skills associated with nursing preceptorships. Another notable limitation of current preceptorship education programmes is the lack of patient representation. Patients are at the centre of preceptorship relationships; therefore, their inclusion is vital. For these reasons, this project co-designed and co-produced an innovative preceptorship education programme focusing on developing interpersonal and communication skills.

Methods

An Experience Based Co Design (EBCD) process was implemented involving a co-design team (n=26) of nurses, students, patients, nursing, and educational and design specialists to develop an innovative educational programme. To a) identify key "touchpoints" to determine what students, preceptors and patients liked about their experiences of a nursing preceptorship, what worked well for them in generating positive interpersonal relationships or what caused anxiety or adverse reactions in the professional relationship. Furthermore, b) to co-design and co-produce an innovative preceptorship education programme with students, preceptors, patients and experts, incorporating experiential knowledge (touchpoints) and scientific knowledge (literature and expert-based knowledge) applying a user-centred design EBCD approach.

Results

An innovative blended learning educational programme consisting of 6 online learning units focusing on interpersonal and communication skills principles in a nursing preceptorship, psychological safety, teaching, feedback, and conflict resolution was created. Followed by one day of face-to-face simulations incorporating role-play scenarios and a state-of-the-art virtual reality simulation.

Conclusion

The EBCD process ensured that the educational program was developed to meet student, preceptor and patient viewpoints associated with fostering positive interpersonal relationships in a nursing preceptorship. This project suggests that EBCD is a valuable framework for developing human-centred educational resources that combine experiential knowledge (touchpoints) and scientific knowledge (literature-based knowledge), creating an authentic and memorable learning experience.

Statement of Original Authorship and Plagiarism Declaration

I hereby certify that the submitted thesis titled "Experience Based Co-Design: Preceptorship Education Programme focusing on the development of Interpersonal and Communication Skills for Preceptors" is my own work and was completed while registered as a candidate for the degree of Doctor of Philosophy in the UCD College of Health and Agricultural Sciences. I have not obtained a degree elsewhere on the basis of the research presented in this submitted work.

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Date: 30/09/2022

Author Contributions

The PhD candidate, Philip Hardie, led the design and planning of all papers presented in this thesis. He drafted each manuscript and updated them based on feedback from all authors. For the Literature review in Chapter 2 and the systematic scoping review in Chapter 3, he completed all stages of the review including screening, data extraction and write up of results. He conducted the data collection and analysis of results in Chapters 5,6,7,8.

As the Supervisor of this thesis, Dr Catherine Redmond guided the PhD candidate in the design and planning of all papers presented. For the systematic scoping review presented in Chapters 3, she completed full-text screening. She contributed to all stages of data analysis presented in Chapters 6,7. She contributed to the revising of all papers, providing feedback at all stages. She read and approved all final manuscripts.

Dr Andrew Darley, Dr Attracta Lafferty, Lisa Langan & Prof Suzi Jarvis contributed to screening papers and feedback on the paper in Chapter 3.

Mr Peter Donnelly, Mrs Elizabeth Greene, Mrs Aine McHugh, Mrs Kate Coveney, Mr Brian Murray & Mrs Siobhan Brereton contributed to the design of the study. All authors read and approved the final manuscript.

Dr Andrew Darley & Lorraine Carroll contributed to the data collection (observation studies) outlined in Chapter 6. Dr Abey Campbell contributed to the design of the study. All authors Dr Andrew Darley, Dr Catherine Redmond, C., Dr Abey & Prof Suzi Jarvis read and approved the final manuscript.

Mr Aidan Murray, contributed to the writing of the paper presented in Chapter 7.

Dr Roisin O Donovan contributed to the design, writing, and revising of the paper presented in Chapter 8. She read and approved the final manuscript.

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The studies described in Chapters 3, 8 have been submitted for publication and currently under review.

Publications and Presentations

Published Journal Articles

- Hardie, P., Murray, A., Jarvis, S., Redmond, C. (2022). Experience Based Co-Design Preceptorship Education Programme. BMC Research Involvement & Engagement, 8 (53).
- Hardie, P., Donnelly, P., Greene, E., McHugh, A., Coveney, K., Murray, B., & Brereton, S. (2021). The application of reusable learning objects (RLOs) in preparation for a simulation laboratory in medication management: An evaluative study. Teaching and Learning in Nursing, 16(4), 301-308.
- Hardie, P., Darley, A., Redmond, C., Lafferty, A., & Jarvis, S. (2021). Interpersonal and communication skills development in nursing preceptorship education and training programmes: a scoping review protocol. HRB Open Research, 4.
- Hardie, P., Darley, A., Carroll, L., Redmond, C., Campbell, A., & Jarvis, S. (2020). Nursing & Midwifery students' experience of immersive virtual reality storytelling: an evaluative study. BMC Nursing, 19(1), 1-12.

Submitted Journal Articles

- Hardie, P., Darley, A., Redmond, C., Lafferty, A., & Jarvis, S. (2022). Interpersonal and communication skills development in nursing preceptorship education and training programmes: a scoping review. Submitted to Nurse Education in Practice.
- Hardie P., O'Donovan R., Jarvis S., Redmond, C. (2022). Key tips to providing a psychologically safe learning environment in the clinical setting. Submitted to BMC Medical Education.

Oral Conference Presentations Delivered

- Hardie P. *et al.*(2022) Experience Based Co Design: Preceptorship Education Programme. Oral Presentation at Sigma 6th Biennial European Regional Conference, 22nd July, Dublin, Ireland.

- Hardie P. *et al.* (2021) Immersive VR Storytelling in Nursing and Midwifery Education. Oral presentation at the Irish Network of Healthcare Educators (INHED), 10th March, UCD.
- Hardie P. (2018) Virtual Reality Training in Nurse Education. Oral Presentation at the Irish Postgraduate Research Conference - 9th November at DCU.

Conference Poster Presentations Delivered

- Hardie P. *et al.* (2022) Experience Based Co Design: Interpersonal and Communication Skills Preceptorship Education Programme. Poster Presentation at THE Conf: Trinity Health & Education International Research Conference, 8th March, Dublin, Ireland.
- Hardie P. *et al.* (2021) Designing & Creating Immersive 360 VR Patient Storytelling Simulations. E-Poster Presentation at the HPSN UK & Ireland Simulation Conference, December 2nd, Nottingham, UK.
- Hardie P. & Redmond C. (2018) Integrating E-Simulation in an Undergraduate Nursing Programme. Poster Presentation at Symposium for Irish Association for Simulation- 20th April at RCSI.

Glossary of Terms

Co-Design: Meaningful end-user engagement in research design across all stages of the research process and ranges in intensity from relatively passive to highly active and involved. (Co-design may also be called participatory design).

Experience Based Co-Design: a process in which people with everyday experiential knowledge combine with people with expert knowledge (specialist/discipline-based) to improve health services or pathways of care.

Immersive Virtual Reality (iVR) Storytelling: This concept combines the emerging world of VR technology and the art form of classical storytelling. iVR storytelling involves a user-focused engagement with an unfolding narrative.

Nursing and Midwifery Board of Ireland (NMBI): Promotes high standards of professional education, training, practice, and professional conduct among nurses. Nurse Registration Programmes Standards and Requirements govern practice and education.

Participatory Design: Participatory design is an approach to design that involves all stakeholders actively (e.g., clinical nursing partners, patients, end users) across all stages of the research process. It is focused on design processes and procedures and is not a design style.

Patient: a person who uses health and social care services. In some instances, the terms "client", "individual", "person"," people"," resident", "service user", "mother", or "baby" are used in place of the term patient depending on the health or social care setting". For this thesis, the term patient will be used to describe all variables except "mother" or "baby", as this thesis focuses on a general nursing context and not Midwifery.

Practice placement experience: Provides students with learning opportunities that enable the achievement of competence in clinical nursing practice and the stated learning outcomes.

Preceptee/Nursing Student: is typically described as a novice in a new clinical area, hence is not limited to nursing students but can also include new graduates and new employees. The designated time spent as a preceptee depends on what context he/she is taking on the position. It differs for undergraduate Nursing/Midwifery students, newly qualified Nurses/Midwives and Nurses/Midwives allocating to a new clinical environment internationally. While the term preceptee is not limited to nursing students, the term nursing student will be used in this thesis as the primary focus of this thesis is on undergraduate nursing preceptorships.

Preceptor: A registered nurse or registered midwife who has undertaken preparation for the role and supports undergraduate nursing or midwifery students in their learning in the practice setting and assumes the role of supervisor and assessor of the student's achievement of clinical learning outcomes and competence.

Preceptorship: an approach to the teaching and learning process within the context of the practice placement setting. It allows students to develop self-confidence while increasing their competence as they become socialised into the nursing profession.

Simulation-Based Education: constitutes a teaching method and a strategy for learning and understanding theoretical knowledge and skills in a safe learning environment.

Universal Design for Learning: this is a set of principles for curriculum development that give all students equal opportunities to learn by introducing more flexible teaching and assessment methods to cater to the diversity of learners' needs.

Abbreviations

CPC: Clinical Placement Coordinator

EBCD: Experience Based Co Design

HMD: Head Mounted Display

HSE: Health Service Executive

IP & C Skills: Interpersonal and Communication Skills

iVR: Immersive Virtual Reality

NCAD: National Competency Assessment Document

NMBI: Nursing Midwifery Board of Ireland

PPI: Public and Patient Involvement

PRISMA: Preferred Reporting of Items for Systematic Reviews and Meta-Analysis

RLO: Reusable Learning Object

SPP: Students, Preceptors, Patients

UDL: Universal Design for Learning

VR Storytelling: Virtual Reality Storytelling

VR: Virtual Reality

VRLE: Virtual Reality Learning Environments

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Chapter 1: Introduction

1.1 Purpose of the study

The preceptorship relationship is a purposeful short-term professional educational relationship between the preceptor (staff nurse) and a nursing student/newly qualified nurse (preceptee) (hereafter referred to as student nurse) grounded in providing patient care in the clinical environment (Ward & McComb, 2017). It provides opportunities for socialisation in nursing practice and helps bridge the gap between theory and practice (McSharry & Lathlean, 2017). With 50% of the undergraduate nursing curriculum in the clinical environment, preceptors play a pivotal role in educating student nurses.

The Nursing and Midwifery Board of Ireland (2021) states that effective interpersonal relationships are essential for the foundation of effective patient care and a successful teaching and learning environment. Therefore, the quality and support of the preceptorship relationship contribute significantly to student learning, and central to this relationship is the patient's provision of care. Consistent with this view, a literature review examining the interpersonal relationships of nursing preceptorships showed that effective interpersonal relations build trusting relationships that create an effective learning environment, improve communication, and decrease adverse events, including interpersonal conflict and poor patient care (Ward & McComb, 2017; Omer & Moola, 2019; Irwin *et al.*, 2018; Ke *et al.*, 2017; Washington, 2013). However, workplace incivilities such as rudeness, humiliation, anger, generational clashes, and inappropriate criticism from experienced preceptors have also been reported by students (Omer & Moola, 2019; Gardiner & Sheen, 2017; Dyess & Sherman, 2009). These difficult experiences consequently result in a negative learning experience and, in some cases, interpersonal conflict in the preceptorship relationship (Hugo & Botma, 2019; McCloughen & Foster, 2017). The review identified the importance of effective interpersonal and communication skills partially in the context of preceptor responsibilities, including teaching and feedback.

Investing in developing preceptors' interpersonal and communication skills is essential in maintaining good interpersonal relationships, creating an effective teaching environment and enhancing good patient care. However, a systemic scoping review identified limited focus on developing interpersonal and communication skills in nursing preceptorship programmes. A lack of direct focus on interpersonal and communication skills development may result in preceptors lacking the necessary skills to facilitate positive interpersonal relationships in a preceptorship. Equally, patients also play a fundamental role in nursing students' clinical education, providing valuable perspectives to enrich student learning, yet the literature suggests that their involvement in a nursing preceptorship remains unappreciated and underrepresented in preceptorship education programmes.

Therefore, the purpose of this multiple-method Experience Based Co Design (EBCD) study was to explore student, preceptor and patient (SPP) "touchpoints". Critical moments within nursing preceptorship relationships to determine what SPP liked about their experiences, what worked well for them in generating positive interpersonal relationships or what caused anxiety or adverse reactions in the professional relationship. A better understanding of SPP touchpoints can enhance preceptorship education programmes by including all SPP perspectives in the programme. It provides an opportunity to see situations from different perspectives and better understand preceptorship practices.

Subsequently, the EBCD methodology facilitated the collaborative co-design and co-production of a new educational programme intervention with SPP, nursing, and educational and design experts incorporating experiential knowledge (touchpoints) and literature/ expert-based knowledge. The project retained a user-centred design approach throughout, as their experiences, expertise and knowledge of nursing preceptorship propelled the entire co-design and co-production of the new preceptorship education programme.

The new educational programme aims to facilitate active engagement and reflection on developing practical interpersonal and communication skills associated with

nursing preceptorship, including crucial skills such as creating psychological safety, teaching and feedback practices. It is hoped that including such skills in the preceptorship education programme will improve preceptors' confidence and interpersonal and communication skills associated with nursing proctorships, resulting in positive clinical learning experiences for students and patients experiences. Previous research regarding preceptorship education programmes has incorporated student nurses' and preceptors' perceptions in the programme's design. This study addresses a gap in knowledge regarding the patients' experience of nursing preceptorship. It also included patients in the design of a preceptorship education programme. Furthermore, this study addresses another gap in current preceptorship education programmes, focusing on interpersonal and communication skills development associated with nursing preceptorships.

1.2 Background to the study

1.2.1 Introduction

This study will explore the co-design and co-production of an innovative preceptorship education programme. To contextualise the study, it is imperative to explain the fundamental concepts underlying the research, i.e., nursing preceptorship and its influence on nursing education. An overview of the establishment of nursing preceptorship and key concepts will be provided. The fundamentals of interpersonal relationships and relationships in a nursing preceptorship will be provided. An overview of preceptorship education will be provided. Lastly, the significance of the research problem of the current study and how it can contribute to the existing evidence base will be outlined.

1.3 Research Context

1.3.1 Establishment of Preceptorships in Nursing Education

Internationally there are different models of nurse education, from hospital-based schools of nursing to pre-registration degree programmes set in higher education structures which also include an apprenticeship model of work-based learning in hospitals (O'Dwyer, 2007). The traditional apprenticeship model established by Nightingale that was in practice internationally for over 100 years or more was deemed

unsuitable in the late nineties, leading to a reform in nursing education (Fealy,2006). Over the last two decades, there has been an exponential move from traditional hospital-based nursing schools to a nurse education system within higher education institutes (Liu *et al.*, 2015). The driving force behind this reform are efforts for professional development within nursing (Råholm *et al.*, 2010) and to increase the profile and status of the nursing and midwifery profession (Gillespie & McFertridge, 2006).

Coinciding with the changes in nursing education programmes, the concept of nursing preceptorship was established. The earliest reference to preceptorship in nursing literature was by Kramer (1974), describing the education of nursing students and their transition into clinical practice. The application of preceptorship in nursing education is now widely used internationally.

1.3.2 Nursing Preceptorship

Preceptorship has been defined as: "*an approach to the teaching and learning process within the context of the practice setting which allows students to develop self-confidence while increasing their competence as they become socialised into the profession of nursing*" (Billay & Myrick, 2008, pg.259). Preceptorship is intended to facilitate the integration and immersion of new nurses or nursing students into the clinical setting by pairing them with a preceptor, of which a preceptor is an experienced staff nurse who can support, educate, access, and assist them over a specified amount of time (Ward & Mc Comb. 2017a; Ward & Mc Comb, 2017b). Preceptorship is recognised as a strategy for maximising the benefits of clinical education whereby the nurse assists students in attaining skills and knowledge where theoretical knowledge is linked to practical skills, as well as enhancing confidence and professional socialisation (NMBI, 2020; Carlson *et al.*, 2009).

Several definitions for preceptor can be observed throughout the literature and are similar; the following two definitions exemplify this. Rebeiro *et al.*, (2017p2) describes a preceptor as

> "*A registered nurse who has undergone preceptorship training (as professional development often supported by the healthcare organisation), after which a student's assignment to that particular registered nurse employed at a health care facility occurs*."

In Ireland, the Nursing and Midwifery Board of Ireland (NMBI) describes a preceptor as

> "*A registered nurse or registered midwife who has undertaken preparation for the role and who supports undergraduate nursing or midwifery students in their learning in the practice setting and assumes the role of supervisor and assessor of the students' achievement of clinical learning outcomes and competence. Preceptors recognise student satisfaction with their clinical learning environment and provide support and supervision by promoting a feeling of 'belonging' in the placement environment*." (NMBI, 2020, pg47).

Other related concepts often observed in the literature to describe preceptorship are mentoring, facilitating, clinical supervising, supervising and registered nurse buddy. Although these concepts are used interchangeably, they can have different meanings in different countries. These concepts are used as they appear to have similar overlapping attributes to preceptorship. However, *mentorship* can be defined as a more supportive/advisory capacity. The mentorship role is typically a long-term partnership, with the likelihood that the mentor does not work on the mentees unit and is not focused on clinical experience but more on a supportive role for objective guidance and a holistic life focus (Halfer,2007, Mijares *et al.*, 2013). Facilitating and clinical supervising are typical concepts associated only with registered Nurses/Midwives. The literature describes facilitating a process as providing education, support and guidance (Nowell *et al.*, 2017). However, the process is typically not formalised and depends on the availability of the facilitator. The facilitator is typically not allocated a dedicated period. *Clinical instruction* is a concept in which a registered nurse/midwife clinical instructor supervises a student for a specified period in the clinical setting (Roman, 2018). Clinical supervising is a process that

includes organisational or management oversight but is typically not one-to-one and has no specified time frame (Butterworth & Faugier, 2013). The concept of "*Nurse buddy*" is a more recent role in development in Australia, in which a registered nurse/midwife pairs up with a nursing student if a clinical educator is not available; however, the nurse buddy is not responsible for the evaluation and competency assessment of the student (Robeiro *et al.*, 2017). Therefore, while some similar traits can be observed, preceptorship is a different role and should not be confused with these concepts.

The research presented in this thesis was conducted within an Irish nursing education context. Therefore, while various definitions of the term preceptor can be observed throughout the literature, this thesis will use the definition set by NMBI (2020) as it is broadly used throughout Irish professional guidelines concerning preceptorship.

1.3.3 Nursing Preceptorship in Ireland

Preceptorship was first introduced to Ireland in 1994 (Carney, 2015). However, preceptorship was not fully formalised in undergraduate nursing education in Ireland until 2001, following recommendations of the Nurse Education Forum and the development of the 4-year undergraduate degree programme in 2002 (Mcsharry & Lathlean, 2017).

The Nursing & Midwifery Board of Ireland (NMBI) is responsible for the registration, governing, regulation and education of nurses and midwives in Ireland. As the NMBI holds accountability for educating nurses and midwives, they share responsibility with the third-level institutions for ensuring quality education programmes. Therefore, NMBI and the third-level sector must collaborate in developing, delivering, managing and evaluating nursing and midwifery education programmes. To facilitate this process, the NMBI launched the latest criteria for nurse education programmes (Nurse Registration Programmes Standards and Requirements, 2016) in September 2018. These latest standards and requirements outline programme learning outcomes with indicative content for the four years of the programme.

In line with Nurse Registration Programmes Standards and Requirements (2016), all students must complete practice placement as part of their undergraduate degree programme. Practice placements provide students with learning opportunities that enable the achievement of competence in clinical nursing practice and the stated learning outcomes. It facilitates real and complex experiences in which students must think critically about the situations they are exposed to. In Ireland, practice placements are a central element of the undergraduate nursing programme, with NMBI (2016) stipulating that clinical instruction be no less than 81 weeks (2300h) and theoretical instruction no less than 63 weeks (1533h) (Mcsharry & Lathlean, 2017).

In Ireland, NMBI (2020) specify each student should be assigned a named preceptor for each practice placement. Students are supernumerary when on clinical placements except for the nine-month internship at the end of the four-year programme. Students work alongside their allocated preceptor on all their placements. Students can have more than one preceptor to facilitate different scheduling of shifts for the staff nurses; these are known as associate preceptors. The fundamental requirement of each preceptor/associate preceptor is to support and facilitate nursing students to understand placement learning outcomes, meet their learning needs during the practice experience, and take part in their practice assessment (NMBI, 2018). The preceptor assesses the students using a national competency assessment document (NCAD), a competency-based assessment strategy set out by the NMBI (2016).

Central to successful nursing preceptorships are positive interpersonal relationships and effective communication. Before examining the interpersonal relationships of a nursing preceptorship, it is vital to understand the basic principles of interpersonal relationships and communication. In the section that follows, the basic principles of interpersonal relationships and communication will be examined.

1.4 Interpersonal relationships & communication

Interpersonal relationships are central to nursing practice (Grant & Goodman, 2019). Interpersonal and communication skills are at the core of these relationships, which facilitate the development of constructive and effective relationships (Bhana, 2014).

These principles also speak to the interpersonal relationship of preceptorship. Thus, understanding relationships and applying interpersonal and communication skills are essential in nursing practice and preceptorship.

Interpersonal relationships are defined as a connection or association between two or more people and can last for a short time or lifelong, depending upon the relationship (Owens & Suitor, 2007). In interpersonal relationships, participants are interdependent, where the behaviours and associated interactions affect the outcome of the other members. Relational expectations are explicitly established in the relationship. Interpersonal intimacy speaks to the degree to which the interpersonal relationship participants mutually confirm, value, and accept each other's sense of self (Reis, 2018). Interpersonal relationships can be a relationship of choice or circumstance (Chokkan, 2016).

Communication plays a central role in developing and maintaining interpersonal relationships. Communication occurs intrapersonally (within oneself) and interpersonally (with others). Intrapersonal communication is a hidden element of communication that occurs internally, is formulated by a person's thoughts and beliefs, and is motivated by feelings that can influence behaviour (Arnold & Boggs, 2020). Intrapersonal communication is usually not part of spoken communication; however, understanding one's intrapersonal meaning requires self-awareness and reflection. Negative intrapersonal communication can negatively shape interpersonal relationships. Interpersonal communication skills are essential for everyday life and our working lives. Excellent interpersonal and communication skills enable us to work more effectively in groups/teams, either at work or in social situations. Excellent interpersonal skills can help build strong relationships with others and better communication skills, therefore, improving trust and understanding of one another (West & Turner, 2020).

Throughout the literature, several theories in interpersonal communication can be observed, and the number continues to grow as the field of interpersonal communication is further examined. Braithwaite & Schrodt (2021) believe there are

three broad approaches to interpersonal communication theory that helps us to understand and define what interpersonal communication is and how it functions in human life. Firstly, theories that envision communication as an individually centred cognitive activity. Early works by Miller (1976) argued that communication occurs when people make predictions about the other interactants based on perceiving them as a person rather than a social role they may hold, e.g., a nurse. The individual's perceptions of the person influence how they translate information and act. Secondly are theories regarding discourse or interaction-centred theories. The focus of these theories switches perspectives from the individual to understanding communication as joint interactivity performed between persons. Work in this area stems from Walzlawick *et al.* (1967) examination of behavioural patterns of common interpersonal occurrences. These works focus on messages' content, forms, function, and behavioural exchanges between interrelating parties. Thirdly, interpersonal communication theory focuses on relationship-centred theories, which are positioned to understand the role of interpersonal communication in developing, supporting, and ending professional, social, and personal relationships. The early works of Davis (1973) and Altman & Taylor (1973) shaped these theories by examining a relational perspective on interpersonal communication and how communications within the relationship shape or establish those relationships. Considering these three broad approaches to understanding interpersonal communication, the researcher feels it best to view interpersonal communication in its most broad way. Thus, the definition, Interpersonal communication "is *a reciprocal, interactive, dynamic process, having value, cultural, emotional and cognitive variables that influence its transmission and reception*" by Arnold & Boggs (2020pg.7) as it addresses each of the three theoretical approaches and will be used in this thesis.

1.4.2 Interpersonal relationships & communication in a nursing preceptorship

As discussed in the previous section, understanding relationships and applying interpersonal and communication skills are essential in nursing practice. Similarly, it is essential to understand the triadic professional relationship between student, preceptor and patient and its pivotal role in nursing education. The preceptor plays a vital role in creating supportive interactions and generating positive interpersonal

relationships (Ward & McComb, 2017b). Preceptors are responsible for facilitating and building collaborative relationships between students and patients (James & Chapman, 2010). Students, preceptors, and patients are individuals with a wealth of life experiences, with differences and similarities that can enhance or inhibit the relationship. The dynamics of this professional relationship can affect the student's socialisation in the nursing profession and the clinical environment, professional development, and patient care (Washington, 2013).

A preliminary scope of the literature exploring theories underpinning interpersonal relationships of a nursing preceptorship signified limited results. Washington (2013) believes Peplau's theory of interpersonal relations can be applied to the interpersonal relationship between a preceptor and a student. Phase 1: the orientation phase. The preceptor and student get to know each other, how each other works and how to work together. The student recognises the need for help with the transition. Phase 2: the identification phase; the preceptor and student determine learning opportunities for developing the students' learning outcomes. The student also comes to recognise the preceptor as a valuable resource. Phase 3: the exploitation phase; the student now uses the preceptor as a resource and support to meet the identified learning outcomes. Phase 4: the resolution phase; the student achieves the identified learning outcomes, and the interpersonal relationship continues as the preceptor guides and supports the student to become more and more competent and integrated into the nursing profession (Washington, 2013). The preliminary scope of the literature suggests a lack of interpersonal theory to frame the interpersonal relationships between the student, preceptor, and patient.

Patients must be included in the social and professional interactions between the preceptor and the student (Suikkala *et al.*, 2018). The nurse/student-patient relationship must be based on trust, empathy, and professional intimacy and requires the appropriate use of power inherent in the care provider's role (NMBI., 2015). A therapeutic interpersonal relationship must be established (Xue & Heffernan, 2021). Kornhaber *et al.*, 2016, pg. 537) define a therapeutic interpersonal relationship as "*a relationship which patients perceive to encompass caring, and supportive non-*

judgmental behaviour, embedded in a safe environment during an often-stressful period". Typically, the relationship displays warmth, friendliness, genuine interest, empathy, and a wish to support and care (Arnold & Boggs, 2020). Similarly, Kornhaber *et al.* (2016, pg. 539) state that "*therapeutic listening", responding to patients' emotions and unmet needs",* and *"patient-centeredness and therapeutic engagement*" are all interlinked and contribute to positive therapeutic interpersonal relationships. The nurse/student-patient relationship can enhance the patient's physical and mental health, providing emotional and mental support, and creating a greater sense of social wellbeing (Strandas & Bondas, 2017). It also can strengthen the patient's resources for maintaining their health. The researcher believes a greater understanding of the interpersonal relationships between student, nurse and patient could help establish the theoretical underpinnings of the relationship.

As previously outlined, the student preceptor and patient relationship are fundamental to the student learning process and patient care in a nursing preceptorship. However, each year a significant number of nursing students report difficulties to the lead researcher in his role as a clinical nurse tutor regarding their lived experiences of interpersonal preceptorship relationships that occur in the clinical environment. These difficulties particularly relate to difficult interactions and communication with their preceptors during their practice placements. Equally, preceptors have reported difficulties interacting and facilitating a positive learning environment for students. This often results in a breakdown of the professional relationship and negatively impacts the student's clinical learning experience.

An initial review of the literature demonstrates that positive interpersonal relationships in a preceptorship have expanded knowledge, skills acquisition, and theory-practice integration (Omer & Moola, 2019). For students, it facilitates a meaningful relationship in which they can internalise soft skills, practical skills, theory, ethics, and nursing values, building their confidence and integration into the nursing profession (Omer & Moola, 2019; Irwin *et al.*, 2018). Positive preceptorship relationships improve communications between the preceptor and student, resulting in an open, trusting professional relationship (Ke *et al.*, 2017). However, a preliminary review of the

literature also suggests similar experiences to that of the researchers' students and associated preceptors in that negative interpersonal relationship in a preceptorship can result in an ineffective learning environment, conflict, a breakdown in the relationship and a negative impact on patient care (Hugo & Botma, 2019; McCloughen & Foster, 2017; Deteau, 2012). A comprehensive literature review is required to better understand the critical factors that positively or negatively affect a nursing preceptorship's interpersonal relationships and identify gaps in the knowledge.

1.5 Preceptorship Education

Preceptors must create an effective learning environment and facilitate a positive clinical learning experience for students (Stenberg & Carlson, 2015). However, access to education for preceptors to actively develop practical preceptorship skills varies internationally. Programmes vary in length and content, with preceptors worldwide requesting more education in preceptorship (Bengtsson & Carlson, 2015). Equally, inconsistencies in pedagogical approaches to preceptorship education can be observed in the literature (a more detailed account of preceptorship education and pedagogical approaches is provided in Chapter 3).

In Ireland, according to NMBI (2016), preceptors who support students must complete a teaching and assessing course approved by the NMBI to enable them to support, guide and assess students' learning and competence development. A recommendation from NMBI is to undertake regular updates (refresher of online programme/workshops) every 2-3 years (NMBI, 2020). However, the available information on preceptorship education programmes in Ireland is limited. The literature shows that preceptorship education has varied across institutions, from online programmes to two-day and half-day workshops (Hefffernan *et al.*, 2009; McCarty *et al.*, 2003). Equally, the content of the programmes tends to vary from institution to institution. Indeed, the researchers' own experiences of preceptorship education programmes have varied in length, content and pedagogical approaches across various institutions in Ireland.

In response to the inconsistencies in programme length and content, the Health Service Executive (HSE), Ireland, developed a new national mandatory online preceptorship programme: "Preceptorship in Practice" HSELand (2022) (https://www.hseland.ie). This programme is approved by NMBI for all registered nurses and midwives to undertake prior to undertaking the preceptor role for undergraduate nursing and midwifery students. The programme consists of four online learning units; Module 1: Introducing Preceptorship, Module 2: Supporting a Student on a Placement, Module 3: Supporting a Student Who is Not Achieving Competency, and Module 4: Assessment. The programme has been awarded Category 1 approval (CEU 1 point) by NMBI until Jan 2024. After completing the online programme, some institutions still recommend attending a face-to-face workshop to meet and engage with other preceptors. They meet to discuss any queries from the online programme and their experiences as a preceptor and troubleshoot some common issues that arise from time to time. At the same time, other institutions are satisfied with completing the online programme.

A significant criticism by many preceptors is that the programme's primary focus is on the assessment of students, placing great emphasis on the competency criteria outlined by NMBI and the associated documentation. While preceptors acknowledge the inclusion of information on supporting students on placements and supporting a student who is not achieving competency, preceptors report that little focus is placed on actively developing effective interpersonal and communication skills associated with creating positive interpersonal preceptorship relationships, i.e., teaching methods or language when providing feedback. Preceptors also commented on the programme's limitations in being entirely online. It did not create opportunities to ask questions or apply the theoretical content in a safe environment before applying it to practice. The researcher, therefore, feels a comprehensive literature review is required to examine the preceptorship education programmes in terms of length, delivery and content to understand international practices and identify gaps in knowledge. Moreover, an examination of the literature exploring the development of interpersonal and communication skills in preceptorship education programmes which are essential to facilitating positive preceptorship relationships, is required.

1.6 Statement of the research problem

It is clear that nursing preceptorship plays a central role in nursing education. However, as outlined, a significant number of nursing students and preceptors report difficulties to the lead researcher each year regarding their experiences of interpersonal preceptorship relationships in the clinical environment. These difficulties particularly relate to difficult interactions and communication with their preceptors during their practice placements. A preliminary literature review demonstrated that the triadic professional relationship between student, preceptor and patient impacts student's clinical socialisation, professional development, and patient care. Positive interpersonal experiences enhance communication, resulting in open, trusting professional relationships that support a psychologically safe learning environment and improve patient care. On the other hand, negative interpersonal relationships in a preceptorship can lead to an ineffective learning environment, conflict, relationship breakdown, and a negative impact on patient care. Therefore, a comprehensive literature review is required to gain a greater understanding of the critical factors that positively or negatively affect the interpersonal relationships of a nursing preceptorship and identify gaps in the knowledge so that nurse educators can better understand the dynamics of the professional relationship to prevent interpersonal conflicts.

The importance of effective interpersonal relations and communication skills in facilitating positive preceptorship relationships is also evident. Preceptors need extensive educational preparation and support to ensure they can demonstrate practical interpersonal and communication skills to facilitate positive preceptorship relationships. A preliminary review of the literature suggests preceptors report a lack of education to effectively facilitate a positive clinical learning environment. In Ireland, a new preceptorship education programme was recently launched (HSELand, 2022), "Preceptorship in Practice". However, many preceptors have expressed concern that the programme's primary focus is on student assessment, with a heavy emphasis on the competency criteria outlined by NMBI and the associated documentation. There is little emphasis on developing effective interpersonal and communication skills associated with developing positive interpersonal preceptorship relationships, such as

teaching methods or language used when providing feedback. Therefore, a comprehensive literature review is required to examine the preceptorship education programmes in terms of length, delivery and content to understand international practices and identify gaps in knowledge. Moreover, an examination of the literature exploring the development of interpersonal and communication skills in preceptorship education programmes which are essential to facilitating positive preceptorship relationships, is required.

1.7 Thesis structure

Chapter 1 outlines the background and contextual setting regarding nursing preceptorship and its application in nursing education. The rationale and motivation for the current study will be presented. Published literature and evidence regarding the interpersonal relations of nursing preceptorships will be discussed in chapter 2. Published literature and evidence to date regarding interpersonal and communication skills development in general nursing preceptorship education programmes will be presented and synthesised in Chapter 3. The methodological considerations of the study are presented in Chapter 4 with specific reference to the decision to adopt an experience based co-design methodology to address the research objectives and questions. In chapter 5, a pilot study that influenced the design of the new educational programme examining the application of reusable learning objects (RLO) in preparation for a face-to-face simulation laboratory will be discussed. In chapter 6, a pilot study that influenced the design of the new educational programme to investigate the subjective experience of using an immersive virtual reality storytelling experience as an active pedagogy will be discussed. Chapter 7 describes the research strategies and techniques employed, including study design, data collection and analysis methods, in detail. A detailed outline of the new preceptorship education programme will also be discussed. Chapter 8 discusses innovative tips for providing a psychologically safe learning environment in the clinical setting that emerged from this study. The final chapter discusses the current research findings in light of the evidence to date and the intended research aims and objectives. The strengths and limitations

of the current study will also be considered, as well as recommendations for preceptorship practice, preceptorship education, and future research.

1.8 Summary

This chapter outlines the importance of preceptorships in nursing education. Moreover, the importance of positive interpersonal preceptorship relationships and effective interpersonal and communication skills within nursing preceptorship relationships was highlighted. This project aims to co-design and co-produce an innovative preceptorship education programme that facilitates active engagement and reflection on developing practical interpersonal and communication skills associated with nursing preceptorship. Furthermore, it aims to include the patient voice and experience, which is currently lacking in preceptorship education programmes. However, a better understanding of the interpersonal dynamics of nursing preceptorship is required before this can be undertaken. Similarly, a better understanding of the development of interpersonal and communication skills required for effective preceptorships within preceptorship education programmes is required. The aim of chapter 2 is to examine critical factors that positively or negatively affect the interpersonal relationships of a nursing preceptorship, identify gaps in the knowledge, and establish key themes that may be included in a preceptorship education programme. Chapter 3 aims to identify the gaps in the knowledge regarding the development of interpersonal and communication skills in preceptorship education programmes as this study seeks to co-design and co-produce an innovative preceptorship education programme that focuses on interpersonal and communication skills development within a nursing preceptorship

Chapter 2: A Literature Review Examining the Interpersonal Relationships in a Nursing Preceptorship

2.1 Introduction

Effective interpersonal preceptorship relationships are essential for the foundation of effective patient care and a successful teaching and learning environment in a nursing preceptorship. As discussed in the previous chapter, the triadic professional preceptorship relationship between student, preceptor and patient (SPP) plays a central role in nursing education. However, many nursing students report difficult interactions and communication with their preceptors during their practice placements every year. Similarly, preceptors have reported difficulties interacting with students and facilitating a positive learning environment.

A preliminary literature review showed positive interpersonal relationships in a preceptorship resulted in increased knowledge, skill acquisition, and theory-practice integration (Omer & Moola, 2019). It facilitates a meaningful relationship in which students can develop soft skills, practical skills and nursing values, thereby increasing their confidence and integration into the nursing profession (Omer & Moola, 2019; Irwin *et al.*, 2018). Positive preceptorship relationships improve communication, resulting in a professional relationship that is open and trusting (Ke *et al.*, 2017). However, a preliminary review of the literature suggests that negative interpersonal relationships in a preceptorship can result in an ineffective learning environment, conflict, a breakdown in the relationship, and a negative impact on patient care (Hugo & Botma, 2019; McCloughen & Foster, 2017; Deteau, 2012).

To the best of researchers' knowledge, there are currently no published literature reviews examining the interpersonal relationships of a nursing preceptorship. To address this gap, the researcher carried out this review. Therefore, this review aims to provide a comprehensive understanding of factors that either positively or negatively impact the interpersonal relationships of a nursing preceptorship. This review will contribute new insights into how interpersonal relationships of a nursing preceptorship are perceived by those involved.

Furthermore, the researcher conducted this review to assist in the questionnaire design that was later utilised in the one-to-one interviews with SPP exploring their experiences of a nursing preceptorship in this study. The researcher aimed to identify key themes to later include in the questionnaire so that lived interpersonal experiences could be effectively captured. Further details are provided in Chapter 7.

2.2 Methods

This chapter presents a literature review regarding the interpersonal relationships of SPP in the context of a nursing preceptorship. This review aims to provide a comprehensive understanding of factors that either positively (facilitate) or negatively impact (barriers) the interpersonal relationships of a nursing preceptorship. Therefore, this review sought to address the following research question:

- What is known about the interpersonal relationships of students, preceptors, and patients in the context of a nursing preceptorship?

2.2.1 Search Strategy

The researcher undertook a comprehensive literature search to inform this chapter and study design. The search was conducted within the following databases:

SCOPUS, EBSCOhost, CINAHL and PubMed.

The researcher designed a search strategy to identify the relevant literature using keywords pertaining to the various concepts involved in this research (i.e., preceptorship, interpersonal relationships) to search journal databases. The researcher consulted the college librarian regarding the search strategy. The search strategy was deployed in Jan 2019 and updated in June 2022 to identify the most up-to-date literature. See Table 1:

Table 1. Key Search Terms for Literature Review

Preceptor (or) Mentor (or) Supervisor (or) Preceptee (or)Nursing Students (or) Undergraduate Nursing Student (or) Supernumerary (or) Patient (or) Client (or) person (or) service user (or) individual (or) resident AND Interpersonal relationships (or) Interpersonal dynamics (or) Interactions (or) Relationship (or) Partnership

2.2.2 Inclusion and Exclusion Criteria

Papers were included if they were

- Peer-reviewed empirical studies with either qualitative or quantitative data, reviews, reports, and grey literature translated to English with a principal focus on interpersonal relationships of nursing preceptorship.
- Publications from 2002-2022.

Papers were excluded if they were

- Discussion papers or opinion pieces.
- Studies not concentrating on the interpersonal relationships of a preceptorship.

2.2.3 Data Extraction Process

A data extraction template was developed to capture the relevant information from the included studies. Information was collected for aims, design, participant information and outcomes. The final template can be seen in the Appendix A.

2.2.4 Screening

Search results were uploaded to a reference management system , Mendeley (https://www.mendeley.com) to aid screening and data extraction. Duplicates were removed (n=503). Title and abstract screening were carried out by the researcher. Papers were also critically appraised by the researcher in terms of methodology, objectivity, and value of the study to the field of nursing preceptorship.

2.2.5 Study Synthesis

A thematic analysis (Braun & Clarke, 2022) method was employed to analyse the primary qualitative data examining the experiences of general nursing preceptorships. This review used thematic synthesis to combine the studies of experiences of general nursing preceptorships and identified key themes to highlight positive and negative factors that influence preceptorship relationships. Thematic synthesis has three stages: the coding of text 'line-by-line', the development of 'descriptive themes', and the generation of 'analytical themes' (Braun & Clarke, 2022). Thomas & Harden (2008) state that while descriptive themes remain "close" to the primary studies, analytical themes represent a stage of interpretation in which the reviewers "go beyond" the primary studies to generate new interpretive constructs, explanations, or hypotheses.

2.3 Results

The search yielded a total of 3,250 records, no review papers were identified. 18 empirical studies were identified for inclusion in the review following the screening and full-text read process. Figure 1 The PRISMA flow diagram below outlines the screening process. The evidence will be presented in a narrative format, describing key themes that emerged from the available literature.

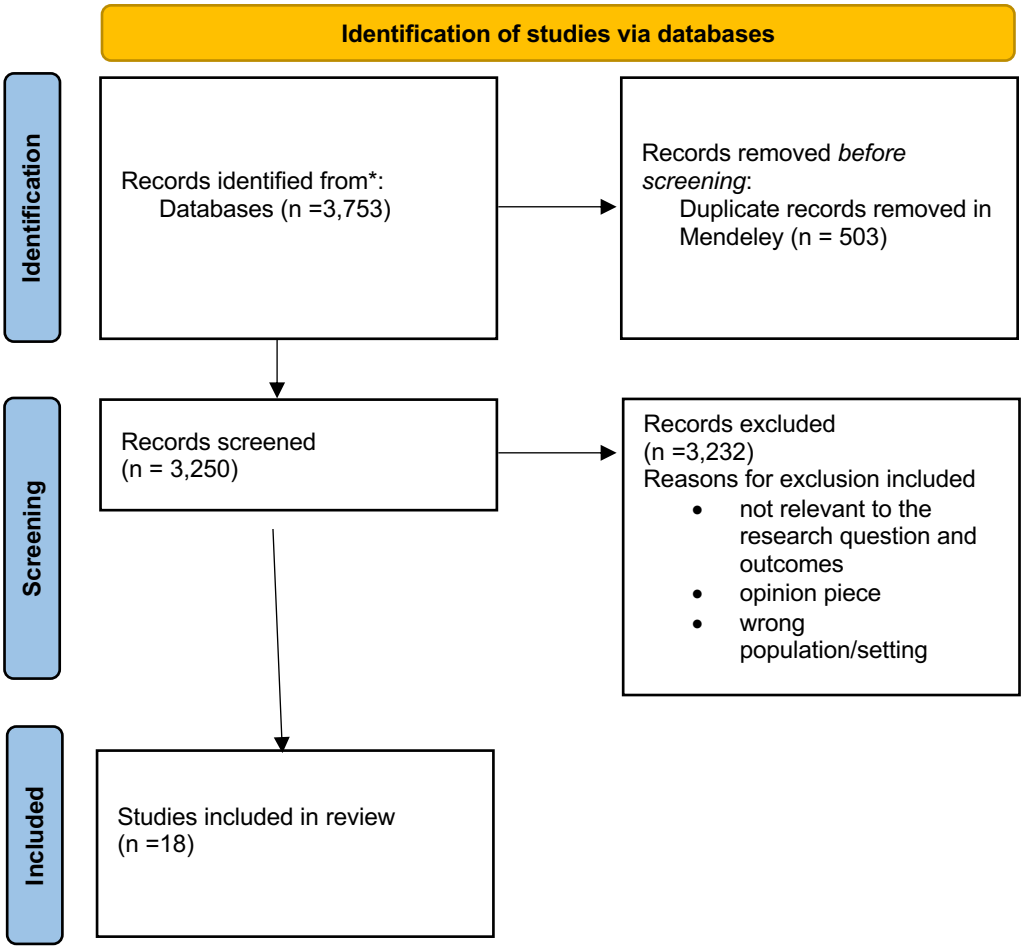


Figure 1. PRISMA Flow Diagram Literature Review

2.3.1 Thematic Literature Review: Factors that influence the interpersonal relationships of preceptorship

Several key themes such as orientation, personal qualities, feedback, generational differences, and workplace incivility, emerged in the literature as contributing factors that affect the interpersonal relationships of preceptorship.

2.3.1.1 Orientation

The concept of orientation emerged as crucial for facilitating a positive interpersonal relationship between SPP. Orientation refers to preceptors helping students and patients adapt to the clinical environment (Lindfords *et al.*, 2018). A preceptor plays a significant role in making students and patients feel welcome in the clinical

environment (Tremayne & Hunt, 2019). Preceptors should act as socialising agents (Lalonde & McGills Hall, 2017). Both groups can feel vulnerable from either being submerged in a new environment or an unwell position. The preceptor's welcoming and open disposition can help build rapport and a sense of belonging. The orientation period can be overwhelming for students, given their lack of familiarity with the new clinical environment and the amount of new information they need to remember, including environmental factors and nursing care practices (Lindfords *et al.*, 2018). Preceptors play a fundamental role in cultivating effective communication and mutual respect during orientation (Quek *et al.*, 2019). Students strongly associate a positive relationship with their preceptor with a positive orientation (Pasila *et al.*, 2017).

At a Finnish University Hospital, Lindfords *et al.* (2018) investigated elements that enhance or impede the successful orientation of new graduate general nurses enrolled in a preceptorship programme. Results showed that organisational factors that include a cultural commitment and collective engagement and a preceptor's positive attitude to the orientation process are essential in generating a successful orientation process. Preceptors agreed it was essential to receive some background information on students and their desired learning outcomes prior to students commencing their orientation. Other contributing factors established by preceptors as influential to successful orientation were categorised under strong professional orientation knowledge, for example, the preceptor's professional competence paired with adequate knowledge and skill resource allocation for orientation (Lindfords *et al.*, 2018). Comparably, Ewertsson *et al.* (2017) established that preceptors who engaged in a constructive orientation process created a positive first impression with their students and generated a positive interpersonal relationship between the two parties. Lindfors *et al.* (2022) more recent study examining newly qualified nurses' evaluation of their orientation period found similar results in that preceptors' positive attitudes and setting clear expectations and goals for the orientation period also positively influenced the interpersonal relationship. Furthermore, it highlighted the importance of providing individualised orientations to meet students' individual needs.

Similarly, Hilli & Melender (2015) & Quek *et al.* (2019) established preceptors and students emphasised the importance of preceptors welcoming students to the unit from the outset, thus, creating a psychologically safe learning environment where students feel safe and open to asking questions. The welcoming atmosphere helps generate positive interpersonal relationships. One preceptor stated, "*I would like the students to receive a nice warm welcome when they come to our unit. In this way, the student can feel that they can learn in a safe environment*" (Hilli & Melender, 2015, pg. 473). Similarly, Lafrance's (2018) examination of the intrinsic benefits of nursing preceptorship from a preceptor's perspective identified the importance of developing a "working friendship" with their students during orientation to establish effective communication and enhance knowledge transfer. Comparably, Ralph *et al.* (2009) established a similar sentiment from a student's perspective. A student described the establishment of positive interpersonal relationships; as "*having the other staff members include you and invite you into the clinical setting (i.e., showing me how things were done and sharing their time to make you feel like part of the team)*" (Ralph *et al.*, 2009 pg. 437). Positive interpersonal relationships develop when students feel their presence is valued and part of the team. This further demonstrates the importance of a structured orientation process for preceptors and students that supports positive interpersonal relationships of preceptorship.

Tremayne & Hunt (2019) believe the practice of making unique introductions during orientation will further help generate positive interpersonal relationships. By making introductions exciting and including a snippet about the person rather than just their name/role. Also, using the term "our" generates a sense of a team. Tremayne & Hunt (2019) further state the importance of positive non-verbal cues when orienting students. Creating an open and friendly demur through actions such as keeping hands and arms relaxed, nodding faintly, making eye contact, and slightly leaning towards the person can generate a mutual and trustful relationship.

International campaigns such as "Hello, my name is...." established by Grainger & Pointon (2014) have highlighted the importance of humanising the first contact between patients and healthcare workers. Introducing yourself creates a connection

with the patient, which can form a positive interpersonal relationship. Holst *et al.*'s (2017) hermeneutic study examining the interpersonal relationships of preceptorships at a university hospital in Sweden reported that patients felt secure and supported by preceptors and students when they were considerate and made meaningful interactions with the patient. One patient stated, "Above all, I feel good when they try to make eye contact with me, say hello, are polite and pleasant that gives you a good first impression" (Holst *et al.*, 2017, pg. 5).

On the other hand, factors that negatively affect the interpersonal relationships of a preceptorship associated with the orientation process were also identified in the literature. Lindfors *et al.* (2018) & McCloughen & Foster (2017) observed that preceptors that portrayed negative attributes and reluctance to engage with the orientation process resulted in complex interpersonal relationship problems and, in some incidences, led to poor patient care. Preceptors reported "*fatigue and frustration with the orientation process" "I'm tired of the constant orientation*", "I'm *not interested*" (Lindfors *et al.*, 2018, pg. 260). These negative attitudes result in a problematic relationship between the student and preceptor, with one student reporting, "*chemistry (of the relationship) just doesn't work, not even if you try really hard*" Lindfors *et al.* (2018, pg. 260). Another student commented, "*by not orienting the students properly to the ward, you've created a very dangerous situation, psychologically, emotionally, and physically because we just didn't feel like we had any control*." (McCloughen & Foster, 2017, pg. 2703). These experiences highlight negative attitudes and interactions with the orientation process, or the absence of orientation harm the preceptor-student relationship. However, they may also lead to situations that could negatively impact patient care due to a lack of appropriate patient information.

To conclude, collectively, these studies outline the critical role orientation plays in a nursing preceptorship and its relationship to generating positive interpersonal relationships. When students do not feel welcomed or supported in their orientation by their preceptors, it can lead to interpersonal challenges and a stressful orientation period for students resulting in a negative learning environment and, in some instances, adverse patient outcomes.

2.3.1.2 Individual Qualities of Preceptorship Members

In addition, individual qualities portrayed by preceptors and students were seen to influence the interpersonal relationships of a preceptorship. Several key characteristics such as kindness, friendliness, approachability, empathy, patience, willingness to precept and positive attitude have been described as pivotal in establishing positive interpersonal relations in a preceptorship.

2.3.1.3 Personal attributes that positively influence the interpersonal relationships

Trede *et al.* 's (2016, pg. 270) scoping review of preceptors' perceptions of their role discovered several personal attributes preceptors viewed themselves. These included "protectors", influencers", "role models", "friends", "assessors", "evaluators", and "supervisors".More recently, L'Ecuyer & Shatto's (2018, pg. 237) qualitative study examining preceptors' perception of their role established that preceptors described key attributes a preceptor must hold are "patience", "desire or willingness to precept", "being approachable", "kind", "trustworthiness", "confident" and a "positive attitude". Comparably, Nyhagen & Strom (2016, pg. 19) established that preceptors who were "confident and calm" and "enjoy teaching and being accompanied by students", as well as preceptors who held strong "professional pride and in-depth understanding of nursing practices", create positive interpersonal relationships and clinical learning experiences. Kim *et al.*, (2012) also propose that preceptors must emulate a "transformational leadership" style to empower interest and change amongst students. Furthermore, Shinners & Franqueiro (2015) maintain that preceptors must hold leadership qualities to identify and utilise students' identified skills to foster critical thinking and clinical judgement to enhance their clinical learning experiences. Additionally, Nyhagen & Strom (2016) point out that trust is essential in a preceptorship relationship. Trust results in students feeling more comfortable asking questions and being challenged and preceptors, giving students more responsibility and scope to work independently.

From the point of view of the preceptor, Lindfors *et al.*, 2017; Quek *et al.*, 2019) argue that the attributes of kindness, empathy and patience also play a role in establishing positive interpersonal relations. A personal understanding of students' feelings was

highlighted as an influencing factor. One preceptor stated, "I'll make them (students) comfortable with me first. I don't like them to be scared of me. So, I try, as much as I can, to be lenient to them so they will share with me. I will try to be like a friend, even though I am a preceptor" Quek *et al.* (2019, pg. 64). Preceptors' empathic nature toward a student's expanding workload as they progress through their internship (final year practice placement) and understanding students' fear of taking responsibility and accountability for their patients improved interpersonal interactions (Kelly & McAllister; 2013). Koontz *et al.* (2010, pg. 243) reported similar sentiment, with one student stating, "it was nicer to be with nurses who remembered what it is like to be a student". Similarly, Kuroda *et al.* (2009) identified that when preceptors empathised with and understood students' increased anxiety levels, they were more effective in their teaching strategies, resulting in the student feeling supported, leading to an improved interpersonal relationship.

Adopting a similar position from a student's perspective, Kelly & McAllister (2013) and Koontz *et al.* (2010) suggest friendliness and passion as vital components to successful interpersonal relations. Students valued friendliness as it afforded them encouragement. One student stated a positive relationship was formed when "You have somebody (preceptor) who is open and friendly, really glad to have a student, glad more people are going into nursing because they care about nursing and they want more people to do it, they're more open to questions" (Koontz *et al.* 2010, pg. 242).

Positive and engaged attributes of both preceptors and students are also reported to be influential in the interpersonal relationships of preceptorship. Raine's (2012) identified preceptors' perceptions of qualities of the individual student, such as "prepared, interested and willing to jump in " as positive attributes of a student. The preceptors, therefore, enjoyed working with and precepting the student creating a positive interpersonal relationship. A further study by Koontz *et al.* (2010) established similar findings, but from the perspective of a student commenting, positive preceptorship relationships were established when preceptors were prepared to precept, receive the students well and were available to them. One student stated,

“And when you have somebody (preceptor) who is open, really glad to have a student..... they’re more open to questions “Koontz *et al.* (2010, pg. 242).

Another crucial individual quality a preceptor should possess is a high level of “commitment” to their role. Preceptors who display high levels of commitment and a passion for precepting positively influence the preceptorship relationship (Nyhagen & Strom, 2016; Rebeiro *et al.*, 2021). Wang *et al.* (2018) reported that internal factors such as a fondness for teaching, a feeling of honour and the belief that being a preceptor was beneficial for promotion are some internal factors that preceptors have expressed as a key to their levels of commitment to their role. In addition, Rebeiro *et al.* (2021) recent phenomenological study of the enablers of positive interpersonal relationships between staff nurses and students in Australia found that staff nurses understand the importance of being committed to developing students’ clinical practice knowledge and skills in developing positive interpersonal relationships. Similarly, Raine (2012) noted that staff nurses understood that this must be a mutual process, and students should equally bring the same sense of commitment and engagement to foster a positive clinical learning experience. One preceptor commented, “I think it has to do with engagement and commitment of both parties if both parties are not willing to engage with each other, communication breaks down, and then it becomes burdensome” (Rebeiro *et al.*, 2021, pg. 4). Comparably, Omer & Moola (2019) observed that students felt a productive preceptorship relationship was dependent on the commitment of the preceptor. Preceptors described characteristics and qualities such as “compassion”, “a heart for teaching”, “committed”, “dedicated”, “approachable”, and “everyone must be seen to be an individual” as fundamental in generating a good preceptorship relationship. Preceptors reported that preceptors who did not display these characteristics experienced problems. One preceptor stated, “I think for me it is the art of motivating the students...because if you don’t have the art of motivating, then I don’t think you will have a successful outcome” (Omer & Moola, 2019, pg. 8).

2.3.1.4 Personal attributes that negatively impact the interpersonal relationships

On the other hand, personal attributes that were found to harm the interpersonal relationship included preceptors that lack confidence in their competency in nursing practice, which led to an antagonistic relationship with students and sometimes avoidance of the student (Koontz *et al.*, 2010; Holst *et al.*, 2017). One preceptor stated, "the students tend to take more time for their patients if they are secure, but if the students are insecure, they don't have time at all for their patients" (Holst *et al.*, 2017, pg. 6). In the same way, Nielsen *et al.* (2017) identified a lack of confidence between preceptor and student was observed in circumstances where a trusting relationship was not formed. This created situations where students avoided preceptors and therefore missed learning opportunities. Nielsen *et al.* (2017) argue that finding an appropriate balance between a personal and professional relationship is essential, with both parties showing each other trust and respect. When achieved, a productive professional relationship was established, permitting the student to show vulnerability and uncertainty in unfamiliar situations, yet the preceptor can still challenge the student, strengthening the interpersonal relationship.

As previously highlighted, preceptors expect students to take on active learning roles. Preceptors have reported that unprepared students, who lacked initiative and had to be continually told what to do, posed challenging preceptorship experiences and, in some incidents, resulted in a breakdown of the interpersonal relationship. Thus, they hinder the student's clinical learning experience as preceptors avoid their students (Hanson *et al.*, 2018; Raines, 2012; Madhavanpraphakaran & Balachandran, 2013). One preceptor stated, "when a student is weak, disinterested, or unprepared. I can't wait for the day to end" (Raines, 2012, pg. 78).

Preceptors have also reported developing negative attitudes towards students when stress is felt due to heavy workloads (Lee *et al.*, 2018; Sundler *et al.*, 2014). These negative attitudes, therefore, impact their interpersonal relationship and can negatively influence the student's learning in the clinical environment. A preceptor stated, "I feel burdened. Firstly, I am busy enough just trying to complete my own work. But when I

have to take the students around and educate them. Honestly, it is time-consuming. So, its burdensome" (Lee at el., 2018, pg.105).

Furthermore, from a patient's perspective, Holst *et al.* (2017) established a negative impact factor on interpersonal relations when a student lacked an understanding of the patient's needs and failed to read the current emotional status of the patient. This resulted in the student interacting with the patient in a non-personal professional manner. The patient reported this was very off-putting, resulting in a breakdown of the interpersonal relationship. One patient stated, "I feel unhappy after everything I've been through, it sounds odd, but the cheerful attitude becomes annoying" (Holst *et al.*, 2017, pg. 5).

To conclude, these studies suggest that the personal attributes of both preceptors and students play a role in developing positive interpersonal nursing preceptorship relationships. These studies illustrate that preceptors' attributes, such as empathy, friendliness, kindness, patience, and commitment to the role, are often significant predictors of positive interpersonal relations in a nursing preceptorship. Comparably, students must be committed to their role and actively engage in clinical teaching practices to develop positive interpersonal relations with their preceptors.

2.3.1.5 Communication: Open Dialogue

Communication and the formulation of open dialogue were established as other influencing factors in the literature. Several studies indicate that preceptors that were friendly, open to dialogue and asked questions positively influenced students clinical learning experiences (Phuma-Ngaiyaye *et al.*; 2017; Lewis & McGowan, 2015; McSharry & Lathlean, 2017; Hill *et al.*,2014; Quek *et al.*, 2019). It creates an inviting and conducive learning environment which fosters positive interpersonal relations between the preceptor and the student. One student stated, "The preceptor in this ward is friendly and interacts openly and politely with students…she has a positive attitude towards students. You see the way she approaches you, talking to you, it really makes a difference" Phuma-Ngaiyaye *et al.*, (2017, pg. 166). Another student recalls, "Whenever I ask her a question, I will say, "Can I ask you one stupid question? And

she will say, "no question is ever stupid"...And then let's say I have asked her the same question before. She won't be like, "I told you so many times' (Quek *et al.*,2019pg64). Similarly, Jansson & Ere (2016) & Dahike *et al.* (2016, pg. 147) reported the importance of “open, honest communication with students" as an essential facilitator to effectively act as a preceptor. Jansson & Ere (2016) also established that the first conversation is crucial in establishing positive interpersonal relations as it allows students to discuss their needs and experience to date with their preceptor. This helps establish a good relationship and a continued open dialogue between both parties. At the same time, it helps the preceptor to determine the student's competency levels and helps build trust resulting in greater opportunities for students to work independently (Jansson & Ere, 2016). However, Dahike *et al.* (2016, pg. 147) also found that one of the biggest challenges to preceptorship relationships is "communication or lack of it". Preceptors explained that the clinical environment was one of the most significant constraints to effective and open dialogue with students. Limited physical space, complex workloads and high acuity of patients negatively impact their ability to work effectively with students.

McSharry & Lathlean (2017) identified that when preceptors articulate their practice, explaining the "how" and "why" of the practice, students reported positive interactions and construction of knowledge through the interactive dialogue. Furthermore, students afforded the opportunity to ask questions to address deficits in their knowledge have been observed to enhance the relationship and growth of knowledge further(McSharry & Lathlean, 2017). However, Dahike *et al.* (2016) found that some preceptors reported the need for developing "questioning techniques' ' to further enhance their ability to create effective open dialogue during a teaching session. Suggesting that including such skills in preceptorship education and training programmes is essential. Finally, several studies also highlighted the importance of open dialogue concerning the provision of effective feedback (Plathe *et al.*, 2021; Myers & Calvin, 2016; Gardiner & Sheen, 2017). This will be discussed further in the next section.

To conclude, these studies indicate that preceptors who are good communicators and create an atmosphere for open dialogue establish strong professional relations with

their students. Students have reported positive interpersonal relations with their preceptors when they show enthusiasm and respect and are willing to listen to and understand the student's perspectives by having open and honest conversations with them. The literature indicates the vital need for communication skills training and questioning skills to enhance open dialogue during teaching sessions further. Preceptorship success pivots on relationships that are effectively nurtured in supportive environments that facilitate open discussion in a safe setting and nurture trusting personal relationships.

2.3.1.6 Feedback

The concept of feedback emerged as a contributing factor to the interpersonal relationships of a preceptorship. Providing effective feedback is a core function of precepting and a critical step in students learning process (Muleya *et al.*, 2015; Clynes & Raferty, 2008). Incorporating summative and formative feedback is necessary to facilitate psychologically safe student learning experiences and develop positive interpersonal preceptorship relationships (Johnson *et al.*, 2020).

Matua *et al.* (2014) state that feedback should be regular and timely, clear and focused, emphasizing students' performance and progress and respecting students' feelings, views and privacy. However, preceptors often report difficulties in providing effective feedback (Burt, 2019). Several factors potentially impact the process of providing effective feedback. Environmental factors include the frequency, place, and timing of the feedback. Interpersonal factors, including personalities, teaching and learning styles, and the relationship between them, and situational factors, such as inadequate preceptor training and education, insufficient time to spend with students and the content of the feedback, also have an effect (Lee *et al.*, 2021; Allen & Molloy, 2017; Clynes & Raftery, 2008). The literature highlighted several models for providing feedback in a preceptorship, including the feedback sandwich (Hardavella *et al.*, 2017), Pendleton four-step model (Pendleton *et al.*, 1984), Ask-Tell-Ask Feedback (French *et al.*, 2015), Bidirectional Feedback model (Myers & Chou, 2016, S25) and The WRAP Framework (Beese & Vogelslang, 2018).

The provision of regular feedback and support was associated with reduced anxiety in students, which led to improved interpersonal relationships as students were more open and committed to the relationship (Gardiner & Sheen, 2017). Similarly, Bates *et al.* (2013) longitudinal study of students' perceptions of feedback reported that supportive and caring relationships and a sense of safety were established when preceptors provided daily feedback that arose from the day-to-day delivery of patient care. The continued feedback, in turn, generated a positive interpersonal relationship between the preceptor and the student.

A recent study by Plathe *et al.* (2021) established that implementing a Competence Development of Practical Procedures Framework positively influenced preceptors' and students' teaching and learning experiences when providing feedback on developing clinical skills. Both preceptors and students found it provided a systematic and transparent guide to structure conversations about clinical skills resulting in open, honest communication and a calm, friendly and satisfying interpersonal relationship (Plathe *et al.*, 2021, pg. 4). Myers & Calvin (2016) argue that effectively providing and receiving feedback are core competencies of interprofessional collaborative relationships. Therefore, preceptor-student feedback should allow students to actively partake in the process as both recipients and providers of feedback. Myers & Calvin (2016) suggest implementing the Ask-Respond-Tell feedback model using a collaborative goal-setting cycle in which the preceptor provides feedback but so too does the student. Evaluation of the collaborative and bidirectional feedback process was reported positively by both preceptors and students, citing that it generated a more open and trusting interpersonal relationship between both parties. Allen & Molloy (2017) established a similar perspective when a daily feedback tool was piloted at a university hospital in Australia; preceptors reported that the preceptor-student relationship was enhanced as students could also provide feedback. One preceptor stated, "I think the students like the fact that their opinion counts. I think it makes the feedback process a lot more comfortable as the negative things to improve are more sharing of information and advice of what to try rather than a list" (Allen & Molloy, 2017, pg. 59). Hilli *et al.* (2014) observed a similar sentiment from preceptors in Sweden, who stated creating an atmosphere of mutual respect that facilitates an environment for bidirectional feedback and good interpersonal relationship is essential; "it's a

cooperative relationship. It's not just a one-way street, giving from my side; it's also about receiving. You get new ideas and new points of view on different matters...the students may have an objective view on matters that we as a team are blind to" (Hilli *et al.*, 2014. pg. 2014). Allen & Molloy (2017) further reported that the implementation of a daily feedback tool that encourages collaboration and bidirectional feedback positively influenced the interpersonal preceptorship relationship. Allen & Molloy (2017) reported the daily feedback tool overcame some of the barriers to providing effective feedback, including the frequency of feedback and the traditional preceptor led feedback conversation resulting in the development of trusting preceptor-student relationships.

However, attributes associated with feedback were also shown to impact interpersonal relationships negatively. Most notably was the provision of non-constructive feedback, typically in a rude manner or in an inappropriate location, i.e., in front of the patient (Gardiner & Sheen, 2017; Omer & Moola, 2019; Foley *et al.*, 2012), often causing distress, and therefore generating an unsupportive and uncaring environment. One student stated, "I had feedback by a senior staff member inappropriately in front of a patient which caused huge embarrassment…." Gardiner & Sheen (2017, pg. 10). Another student explained, "I was once yelled at in front of a lot of staff in the nurses' station....the negative feedback made me feel inadequate as a nurse" Gardiner & Sheen (2017, pg. 11). Furthermore, another student described, "Students need guidance in training. They do not require humiliation... It's more than critiquing and evaluation of performance, and it feels personal" (Omer & Moola, 2019, pg. 5). Another expressed, "I am made to feel like a criminal because I don't know something" (Omer & Moola, 2019, pg. 5). These incidents caused significant distress to the students involved and ultimately led to a breakdown in the interpersonal relationship.

To summarise, the findings from these studies suggest that effective feedback can establish trusting and positive interpersonal preceptorship relationships when a cooperative relationship is established and both parties are afforded the opportunity to engage in bidirectional feedback. On the other hand, infrequent feedback or feedback provided in inappropriate locations, e.g., in front of the patient, can result in

a negative interpersonal relationship causing distress and humiliation to the student resulting in a breakdown of the interpersonal relationship.

2.3.1.7 Intergenerational Differences

Intergenerational differences within the preceptorship relationship emerged as a negative contributing factor to interpersonal relationships. The vast majority of today's undergraduate students are likely to be Generation Z or iGen, with the majority of preceptors either Generation X or Millennial Generation resulting in possible generational misunderstandings and conflicts. Each generation inherits its own values and ideals regarding work habits and values, teaching and learning and can hold different levels of digital competence. This may create tensions between the preceptor's expectations on how best to teach and how the students wish to be taught (Roth Gjevjon *et al.*, 2021; Hart, 2017). Gen Z and Millennials typically prefer experiential learning (learn by doing). In contrast, Gen X can prefer didactic teaching methods (Hart, 2017), resulting in differences of opinion regarding teaching methods and, in some cases, a disconnect and interpersonal clash in the relationship (Alorse Atakro *et al.*, 2019). It is important to note that ageism can work both ways in ageism and intergenerational conflict. Students can be labelled as "green" or "naive", and preceptors labelled as "over the hill" or "outdated" (Johnston & Mohide, 2008, pg. 344).

Earle *et al.* (2011) integrative review examining the intergenerational context of nursing highlighted that no studies to date had been carried out examining preceptorship in an intergenerational context. Shortly after, Foley *et al.* (2012; 2013) phenomenological study examined the intergenerational context in nursing preceptorship. Some students reported positive experiences of being precepted by a preceptor from an older generation citing the benefit of strengthening their knowledge from their years of clinical experience. One student said, "*Actually, it was pretty rewarding because I felt like I could learn much from the older generation. They have skills built up for many generations. And she (preceptor) was willing to share whatever she had, so it was great that way. I had a really good experience*" Foley *et al.*, (2012, pg. 8). However, some nursing students reported levels of tension and interpersonal

conflict surrounding the issue of changes to nursing education programmes in recent years. Students stated experiences of preceptors commenting on “the way things used to be carried out” or "*good old days*" when nursing education was better and diminishing the value of theory and classroom education in favour of direct clinical experience (Foley *et al.*, 2013, pg. 1005). Students also commented on experiencing negative attitudes from preceptors towards the latest clinical practice guidelines students were taught at university, stating, "*They don't want to hear you talk about the new ways. They let you do it your way...but there is no chance that they're changing the way they do things*" (Foley *et al.*, 2012, pg. 559). These comments and beliefs resulted in challenging preceptorship experiences for preceptees. Foley *et al.* (2013) argue that devaluing the degree programme could result from a knowledge deficit on the part of the preceptors without degree education. Preceptor training on changes to the nursing degree curriculum could help alleviate this lack of knowledge and prevent unrealistic expectations by preceptors of nursing students' level of readiness for clinical nursing practice. It may also eliminate interpersonal conflict between the preceptor and preceptee.

Foley *et al.* (2012) furthermore observed that different attitudes from preceptors of different generations played a role in interpersonal relationships. Students reported that preceptors from "older generations seem stoic "and "strictly down to business", whereas preceptors from a younger generation were more “open and friendly”. Foley *et al.* (2013) additionally observed negative tendencies from a preceptor's point of view towards students, citing younger generation attitudes and lack of preparation for the realities of clinical practice. This created a negative interpersonal relationship between the preceptor and student, resulting in frustration from the preceptor and leading to conflict. One preceptor expressed, "A lot of millennial students have an attitude. It's like I know what I'm doing. I learned it, and I didn't need any guidance. Or they feel that they can come out and do something once and then go on their own. I find that overconfidence in some...a bit flippant" (Foley *et al.*, 2012, pg. 9).

Interestingly both students and preceptors who participated in the study voiced positive benefits from partaking, explaining how reading the narratives from both sides

helped generate a greater understanding of each other's perspectives. Thus, suggesting that some intergenerational conflicts could be avoided or, if not, better understood by both parties if included in preceptorship educational programmes. One preceptor explained, "I'm *glad I participated in the study because it certainly made me look around at some of the dynamics and see some of my fellow preceptors differently and try to think about..the change in nursing work and nursing education and to separate that out from the generational changes is something that really made me think*" (Foley *et al.*, 2012, pg. 13).

A more recent study examining undergraduate nursing students' clinical placement experiences at a teaching hospital in Ghana identified that some students felt isolated while on placement, mainly due to the intergenerational gap between preceptors and students (Alorse Atakro *et al.*, 2019). Some students experienced a negative intergenerational attitude toward using mobile phones while on the ward. One student stated, "When you ask questions, they tell you to google it, but then they see you using your phone, and they call you Whatsapp nurses " (Alorse Atakro *et al.*, 2019, pg. 4).

To conclude, limited empirical studies directly examine intergenerational differences in a nursing preceptorship. However, it is evident from the available literature that intergenerational differences between the preceptor and preceptee can negatively impact the interpersonal relationship in a nursing preceptorship. The literature suggests that when preceptors and students are informed of generational differences and perspectives, it can create a greater understanding of each party's position and reduce the possibility of intergenerational conflict.

2.3.1.8 Workplace Incivility

Workplace incivility is a further theme emerging from the literature to have a detrimental effect on the interpersonal relationships of preceptorship. Workplace incivility can be classified as occasional rudeness, moodiness, anger, and non-support of others and can be due to fatigue, pain, hunger, overwork, illness, or undue stress (Meires, 2018). Workplace incivility behaviours can include verbal indicators such as shouting or publicly criticising co-workers, nonverbal indicators such as eye-rolling,

excluding co-workers from activities and passive-aggressive behaviours such as refusing to communicate or failing to support your co-worker (Hoffman & Chunta, 2015). Evidence indicates that incivility may be a precursor to bullying (Meires, 2018).

Unfortunately, the idiom “Nurses eat their young” is internationally recognised as a term to describe uncivil and bullying behaviours experienced by nurses (Gillespie *et al.*, 2017). Current literature reports that 20-25% of nursing staff experience some form of bullying behaviour (Wilson, 2016). Regrettably, students are typically seen at the lower end of hierarchical structures, making them vulnerable to bullying (Seibel, 2014). Furthermore, students fear any repercussions or fallouts from reporting incidences of incivility or bullying; therefore, many incidents go unreported (Birks *et al.*, 2015). Blackstock *et al.* (2022) argue that incivility results from people’s behaviours and multidimensional work environment factors such as lack of management support, high patient turnovers, lack of staffing, and overarching hierarchy culture within the clinical environment. A recent bibliometric analysis of workplace incivility in nursing showed minimal studies, with little work examining the impact of workplace incivility on at-risk groups such as student nurses (Taskaya & Aksoy, 2020). The author further notes the lack of studies examining incivility in nursing preceptorships with limited results from the literature review search. However, from the available literature, some key factors contributing to workplace incivility in a nursing preceptorship emerged and will be discussed in this section.

2.3.1.8.1 Workplace incivility in Nursing Preceptorships

Mammen *et al.* (2018) examination of newly qualified nurses enrolled in a preceptorship programme experiences of workplace incivility in an Australian hospital setting identified four significant themes when describing incidents of workplace incivility with co-workers, including preceptors. These included “vulnerability”, in which students described feeling uncomfortable, intimidated and on edge or invisible. “Self-actualisation” in which students described the realisation of their strengths to overcome workplace incivility, including positive personal attitudes and strong coping strategies. “Changing expectations” refers to students finding it was years’ experience that counts over their abilities and that students were not encouraged to voice their

opinions. Finally, the theme “Yearning for respect, support and information” emerged from students’ belief that lack of support, respect and information is the root cause of most workplace incivility.

Minton *et al.* 's (2018) study exploring New Zealand nursing students’ experience of bullying/harassment while on clinical placement found that 40% (n=118) students experienced being bullied while on practice placement, with staff nurses and preceptors cited as the biggest perpetrators. Of the 118 students, 75 % felt high anxiety levels and 70% felt depressed due to the bullying. 13% felt humiliated and unsafe on their clinical placements. Furthermore, Minton *et al.* (2018) noted that only 27% (n=32) of students reported episodes of bullying to management or faculty, of which they felt uncertain if any action was taken or they felt penalised for reporting the event as it then further impacted their relationship with their preceptor. For example, “*I was told I have to deal with it as she is my Preceptor*” and “All workplaces have people we do not like” (Minton *et al.* 2018, pg. 586). Seibel (2014) earlier review of students’ experiences of bullying during their clinical placements found that students’ perceptions and coping strategies influenced workplace incivility. Students who felt respected and were interpersonally connected with their preceptors reduced the risk of workplace incivility.

In the same light, McCloughan & Foster’s (2017) investigation of challenging interpersonal situations by final year nursing and pharmacy students on placement at a teaching hospital in Sydney, Australia, reported that over 42% of participants (n=9) were involved in or witnessed workplace incivility between students and staff or Intra staff conflict. While a small sample of the incidents reported, 58% stated observing negative behaviours such as rudeness and unfriendly staff, with staff shouting at patients and communicating unprofessionally with colleagues. One student stated, *“...my nurse came in, and she told me that I’m supposed to be at the nurses’ station, and I shouldn’t be talking to the patient....in front of the patient...(she said that) I should look like I was working.....She could have gestured or said something or, you know, asked me to come (out of the room) before telling me that I should not be talking to the patient. How would the patient feel? She was quite affronting, abrupt...and I wasn’t*

going to argue because I'm not really confrontational" McCloughen & Foster (2017, pg. 2703). Students reported shutting down and closing off their interpersonal relationships because of adverse interactions: "*I would just listen and stuff, but it doesn't make you feel particularly good when they do that. (I was) probably a little bit embarrassed, and it probably made me not open my mouth the next time, Being the student ...you didn't feel like you had much authority... So, I kept silent throughout the whole interaction*" McCloughen & Foster (2017, pg. 2703).

2.3.1.8.2 Socio-Cultural factors leading to workplace incivility in Nursing Preceptorships

The cultural environment on the ward also led to incidences of workplace incivility, resulting in a breakdown of interpersonal relationships. Gardiner & Sheen (2017) reported that a hostile cultural environment in the ward made participants feel excluded and negatively impacted their interpersonal relationships. Feelings of isolation and negative attitudes to nursing were also observed, resulting in a breakdown of the preceptorship relationship. One student explained, "*A great deal of the staff, throughout the hospital, appeared to be disgruntled, and I heard several on my ward complain about their job and not wanting to be there... After a short while, I tended to feel the same*" (Gardiner & Sheen 2017, pg.12). Omer & Moola (2019) also reported students being adversely affected by episodes of workplace incivility due to negative culture. One student reported events in which preceptors had outbursts in front of patients and emphasised "*shouting*" and "*aggressive behaviour*" *made them feel* "*uncomfortable*", "*nervous*", "*humiliated*", and "I *felt like I have committed a crime*" (Omer & Moola, 2019, pg. 5). Equally, Dyess & Sherman (2009) observed an unkind and negative culture experienced by students on practice placements. One student stated, "*It is the attitude. It's bipolar sometimes. Like you don't know if they are having a bad day or of....they are happy or not or should it be like this or that...They talk about the night shift and the day shift. They talk about you. They're mean*" (Dyess & Sherman, 2009, pg. 407).

Socio-cultural factors were also identified as influencing factors negatively affecting interpersonal relationships. Omer & Moola (2019) found that differences in cultural backgrounds and the first language of the preceptor/student affected the interpersonal

relationship. Students shared that language, and cultural barriers sometimes made it challenging to follow preceptors. Students found that preceptors of the same culture were more empathic than preceptors from another cultural background. One student stated, "*she is polite; they trust us more*" (Omer & Moola, 2019, pg. 4). Likewise, preceptors found the language barrier an issue and, in this case, suggested: that "*they (students) should be given a course in Arabic*" (Omer & Moola, 2019, pg. 4).

Similarly, Lee *et al.* (2018) observed that hierarchical cultures led to incidents of workplace incivility, negatively impacting the interpersonal dynamics of the preceptorship relationship in a Korean hospital. The tradition of Confucian culture in Korea supports hierarchical relationships based on the premise that the stability of society is created by unequal relationships between people (Lee *et al.*, 2018). One student described their experience of their low social hierarchical position and how it led to workplace incivility "*I feel lonely. I feel like I am useless. When I want to ask the nurses a question, I get stressed trying to find the chance to ask my question...I fear the nurses. It's a human relationship. It is very stressful when I worry about being scolded by nurses (due to hierarchy*)" (Lee *et al.* 2018, pg. 106). Ralph *et al.*'s (2009) earlier study in Canada found similar results with students reporting culture of control and dominance over their actions from their preceptors. One student noted, "*Not all preceptors are skilled and compassionate, like the one I had. Preceptors seem to control students, and if conflict happens between the students and the preceptors, students are not listened to; it's the preceptors' word over anything*" (Ralph *et al.*, 2009, pg. 437). Hugo & Botma's (2019) realist evaluation of a preceptor training programme in South Africa reported similar findings of hierarchical culture affecting interpersonal relationships. Preceptors were asked to draw their perceptions of their role in students' learning. One participant drew a picture of the nurse manager and preceptors at the top of the page with a whip-like object pointing at the students at the bottom. When asked to clarify, the participant reported feeling unsupported by her manager to fulfil the preceptor role, stating the manager is the boss of the preceptors and students. This hierarchical view of the manager created a fractured interpersonal relationship between the preceptor and students.

Hanson *et al.* (2018) established similar attitudes toward hierarchical status regarding the physical work environment at a teaching hospital in Canada (Hanson *et al.* 2018). Preceptors reported frustration and a lack of understanding of the nurse's workspace when the preceptor and student needed the medication trolly, patient chart, access to the nurses' station computer, etc. Although in this instance, it was not recognised as hierarchical by the preceptor, she stated, "*When they're all sitting in our chairs and at the report table and then there's nowhere for the staff nurse to go. It's not like a hierarchical thing like, "get out of my chair", but it's like "I'm here to work" and I just feel like it should be that kind of respect*" (Hanson *et al.* 2018, pg. 78). This statement clearly shows an unconscious hierarchal mentality towards students. The nurse noted that this influenced their attitudes toward students as sometimes hostile or resentful, resulting in negative interpersonal interactions between both groups.

To conclude, inappropriate conduct from preceptors, a negative cultural environment, and hierarchical culture negatively impact preceptorship relationships. Highlighting these negative factors in preceptorship education and training programs could help create a greater awareness of the negative impact of workplace incivility on preceptorship relationships and initiate a cultural change in any possible hierarchical disposition preceptors may have. Careful attention must be given to implementing effective strategies to reduce workplace incivility.

2.4 Discussion

This literature review synthesised current evidence on positive and negative attributes associated with interpersonal relationships of a nursing preceptorship. It is evident from the literature that there are apparent factors that promote or inhibit positive interpersonal relationships in a nursing preceptorship. It highlighted key aspects of developing positive interpersonal relationships, including process skills such as structured orientation, effective communication and bi-directional feedback, as well as personal characteristics such as enthusiasm, warmth and welcoming nature which positively influenced the relationship. On the hand, factors such as intergenerational differences, workplace incivility, poor communication, lack of feedback and negative personal characteristics, i.e., rudeness, negatively influence the relationship.

Understanding how these factors impact preceptorship relationships and students' clinical learning experiences can help preceptors better facilitate positive interpersonal relationships. It can also help nurse educators by including these key factors as part of preceptorship education programmes to highlight their impact on student learning and how to prevent negative interpersonal relationships.

2.4.1 Critique of the current literature and future research

Examining the methodologies and findings of studies regarding the interpersonal relationships of a nursing preceptorship, several aspects remain unexplored or overlooked. From a methodological perspective, the review's findings showed that the focus of available literature is predominantly qualitative, focussing on students' and preceptors' lived experiences of nursing preceptorship relationships revealing various perceptions about nursing preceptorship relationships from both viewpoints. However, many studies only included one perspective, i.e., the preceptor's perspective and not the students. There is also a notable lack of evidence regarding the patients' lived experience of a nursing preceptorship relationship. Particularly in the areas of the main themes to emerge from this review, including patients' perspectives on preceptorship orientation, students' and preceptor individual qualities, open dialogue, feedback and workplace incivility. A future study examining the interpersonal dynamics of a nursing preceptorship that also includes the patients' perspectives on these significant themes may provide future detailed accounts of the interpersonal relationships of a nursing preceptorship. The inclusion of all three members of the professional relationship SPP is imperative to providing a more comprehensive view of the interpersonal dynamics of nursing preceptorship relationships.

Seeing the challenges faced in nursing preceptorships, future preceptorship education programmes should consider incorporating these central themes to highlight facilitators and barriers to positive interpersonal preceptorship relationships. Preceptorship education programmes can demonstrate practical strategies to overcome these challenges and promote positive interpersonal preceptorship relationships. A future study that includes all three members of nursing preceptorship in the co-design and co-production of a new preceptorship education programme

could help ensure each member's perspective is captured throughout the programme and strengthen identified strategies to overcome the challenges observed in the literature.

The next chapter advances the literature search through a systemic scoping review examining the current body of knowledge on interpersonal and communication skills development in general nursing preceptorship education programmes. As outlined in this chapter, positive interpersonal relationships play a pivotal role in nursing preceptorships. In order to facilitate positive interpersonal relationships, preceptors require effective interpersonal and communications skills, particularly within the context of a nursing preceptorship. Therefore, the researcher conducted a scoping review to examine current preceptorship education programmes and the practices utilised to develop interpersonal and communication skills required to facilitate positive interpersonal preceptorship relationships.

The findings from this review also assisted in the questionnaire design utilised in the one-to-one interviews with SPP exploring their experiences of a nursing preceptorship in this study. Questions focusing on orientation, personal qualities, feedback and workplace incivility were included in the questionnaire. Further details are provided in Chapter 7.

2.5 Conclusion

This review contributes to the body of evidence by highlighting positive and negative attributes associated with fostering positive interpersonal relationships in a nursing preceptorship. The literature demonstrates that effective interpersonal relations between SPP have been observed to build trusting relationships that create a caring environment and improve communication but also facilitate the development of knowledge, skills acquisition, and theory-practice integrations for nursing students. However, it has also been demonstrated that negative interpersonal relationships can adversely affect a nursing preceptorship, resulting in dissatisfaction, an ineffective learning environment and, in some cases, adverse patient outcomes. It is, therefore,

vital that the development of interpersonal and communication skills with a focus on these identified themes is included in preceptorship education programmes to create a greater understanding amongst preceptors of the facilitators and barriers to positive interpersonal relationships in a nursing preceptorship. The next chapter describes a systematic scoping review investigating the current development of interpersonal and communication skills in preceptorship education programmes.

Chapter 3: Interpersonal and Communication Skills Development in General Nursing Preceptorship Education Programmes: A Scoping Review

Abstract

Aim/Objectives

This systematic scoping review aims to examine and synthesise the available literature on interpersonal and communication skills development in general nursing preceptorship education programmes.

Background

Highly developed interpersonal and communication skills are an essential component of nursing preceptorship. Preceptors are integral in facilitating, guiding, and developing positive interpersonal relationships between the nursing student (the preceptee), the qualified nurse (the preceptor), and patients. They are also responsible for fostering and developing preceptees' interpersonal and communication skills and assessing and deeming preceptees competent in such skills. Furthermore, preceptors require effective interpersonal and communication skills to carry out key responsibilities of their role, including creating a safe clinical learning environment, teaching, and providing effective feedback.

Design

A scoping review was conducted using the methodological framework of Arksey and O'Malley. The PRISMA Extension for Scoping Reviews guided the reporting.

Methods

Five electronic databases were searched for relevant articles in consultation with a librarian, supplemented by hand-searching and internet searches for grey literature. A total of 19,431 potentially relevant articles published between Jan 2000 and August 2021 were retrieved from the initial search, and an additional six articles were obtained from the supplemental search. A total of 146 articles were independently reviewed by two researchers, resulting in 24 articles eligible for inclusion in the review.

Results

Several themes were identified in the literature that influenced the development of interpersonal and communication skills in preceptorship education programmes, including the design and development of programmes, key learning outcomes, pedagogical approaches to preceptorship education programmes and interpersonal & communication skills development in preceptorship education programmes.

Conclusions

This review highlighted that research on developing interpersonal and communication skills amongst preceptors is mainly absent from the literature. Further research to address these knowledge gaps is warranted. This review's results can inform future curriculum design and development of nursing preceptorship education programmes.

Hardie, P., Darley, A., Redmond, C., Lafferty, A., & Jarvis, S. (2022). Interpersonal and communication skills development in nursing preceptorship education programmes: a scoping review. *In review* at *Nurse Education in Practice*.

3.1 Introduction

Preceptorship has been defined as: 'an approach to the teaching and learning process within the context of the practice setting which allows students to develop self-confidence while increasing their competence as they become socialised into the profession of nursing' (Billay & Myrick, 2008, pg. 259). The overall aim of preceptorship programmes is to facilitate student nurses to become 'accountable, independent, knowledgeable and skilled practitioners' (Nursing and Midwifery Council (NMC), 2020, p. 3). Since Kramer's (1974) seminal research on the 'reality shock' experienced by nurses transitioning into clinical practice, preceptorship programmes have become more prevalent in nursing education as an alternative clinical teaching method. Such programmes have led to a smoother transition into the clinical environment and reduced burnout and turnover amongst nurses (Ackerson & Stiles, 2018; Missen *et al.*, 2014). Several guidance documents have also been published to help to standardise preceptorship programmes across different countries (NMC, 2020; Nursing and Midwifery Board of Ireland, 2020a; 2020b; Nursing and Midwifery Board of Australia, 2021).

A fundamental component of the preceptorship programme is the 'preceptorship relationship', a predetermined short fixed-term partnership between the preceptor (experienced staff nurse) and the preceptee (nursing student), involving the delivery of patient care within a clinical environment. The relationship, therefore, comprises a professional triadic relationship between the preceptor, preceptee (hereafter referred to as student) and the patient. The preceptor develops a relationship with the student, acts as a role model and has responsibility for guiding and directing the student's learning during clinical placement. This relationship provides the student opportunities for socialisation in nursing practice while aiding the application of theory into practice (Muir *et al.*, 2013; McSharry & Lathlean, 2017). Such relationships provide professional support and allow students to develop the knowledge and competencies needed to assume responsibility for their nursing practice. The quality of the preceptorship relationship can significantly influence the student's integration into the nursing profession and the clinical environment and can affect the student's

professional development and their delivery of patient care (Washington, 2013; Ward & McComb, 2017). This relationship can enhance the student's confidence, help them acquire practical skills, and motivate them to learn and actively engage with the preceptor (Vaughan & Baker, 2004; Irwin *et al.*, 2018; Omer & Moola, 2019). A negative experience can lead to interpersonal conflict and a breakdown of the preceptorship relationship (Hugo & Botma, 2019; McCloughen & Foster, 2017), thereby creating an ineffective learning environment and the potential to negatively impact patient care (Hugo & Botma, 2019; McCloughen & Foster, 2017; Deteau, 2012). Therefore, positive preceptorship relationships with good communication between the preceptor and student result in an open and trusting professional relationship (Ke *et al.*, 2017). Similarly, positive student-patient relationships are fundamental to the quality of clinical education and delivery of patient care. Patients have valuable perspectives that enrich students' clinical education (Suikkala *et al.*, 2018). Suikkala *et al.* (2020) describe the facilitative student-patient relationship as the centre of learning in the clinical environment that permits patients to share their expertise related to their illness and their needs, as well as feedback about their experience of care and interactions with students. Preceptors are responsible for facilitating and building such collaborative relationships between students and patients (James & Chapman, 2010).

Good interpersonal and communication skills are essential in developing successful and constructive professional relationships in nursing practice (Bhana, 2014). Also referred to as 'soft skills, interpersonal skills are defined as 'those essential skills involved in dealing with and relating to other people, mainly on a one-to-one basis (McConnell, 2004, pg. 178). These include emotional intelligence, learning to recognise others' uniqueness, listening to, empathising with and empowering others and building trust (O'Toole, 2020). Core communication components involve body language and the ability to speak, listen, question and write with clarity (Hook, 2019). Effective interpersonal and communication skills can help to build trusting relationships and foster a caring environment (Arnold & Boggs, 2020), leading to greater accuracy and understanding of information (Kumar, 2011), person-centred care and positive patient experience (Suikkala *et al.*, 2020; 2021).

Reports from the literature, however, show that discord can arise within the preceptor-student relationship and can be attributed to poor interpersonal and communication skills involving workplace incivilities such as disrespect, rudeness, shaming, and patronisation (Dyess & Sherman, 2009; Gardiner & Sheen, 2016; Omer & Moola, 2019). Preceptors often face organisational challenges, such as a lack of management support and high workloads, resulting in preceptors not having adequate time to guide students (Jonsson *et al.*, 2021). Therefore, nurse educators must support and promote the development of interpersonal and communication skills among preceptors and students to ensure effective communication in a time-constrained clinical environment. To date, an array of pedagogical approaches has been adopted to teach interpersonal and communication skills in nursing education, including the use of puppets (Reid-Searl *et al.*, 2014), real-life patient-nurse interactions, role play, trained actors (Zavertnik *et al.*, 2010), high fidelity simulation (Smith & Roehrs, 2009) and games (Glendon and Ulrich, 2005), as well as lectures, case studies, debates and concept mapping (Xu, 2016).

Several theories have been postulated to understand interpersonal relationships better; however, a preliminary review of the literature suggests a dearth of available evidence that uses interpersonal theory to frame interpersonal relationships in preceptorship. Peplau's (1997) theory of interpersonal relations captures the nurse-patient relationship, and Washington's (2013) interpretation of Peplau's theory of interpersonal relations applies to the preceptor-student relationship. However, to the best of the authors' knowledge, no theory of interpersonal relationships captures the preceptor, student and patient involvement in the nursing preceptorship relationship. Thus, the existing theories do not appear to provide a holistic understanding of the triadic relationship and encourage clinicians, nurse educators and researchers to view the relationship using a limited dyadic lens, i.e., nurse-patient or preceptor-student.

Teaching effective interpersonal and communication skills to preceptors requires providing the relevant knowledge, guiding their learning to develop and enhance their skills and coaching effective interpersonal skills. Preceptors bring their own distinctive set of communication skills, cultural influences, learning styles and life experiences

that directly affect their ability to engage in effective interpersonal relationships. Nurse educators must identify and build on preceptors' personal strengths and experiences to enhance their interpersonal skills. As with any human skill, interpersonal and communication skills can be improved through conscious effort (Moss, 2020). If preceptors understand interpersonal and communication skills, they can be more effective in their role as a preceptor. Investing in developing preceptors' interpersonal and communication skills is essential in maintaining good interpersonal relationships, an effective teaching environment and good patient care. Therefore, the inclusion of these skills is paramount in preceptorship education programmes.

Given the importance of promoting the development of good interpersonal and communication skills in nurse preceptorship, the overall aim of this scoping review was to undertake a comprehensive review of the published and unpublished literature to identify and map the relevant literature that focuses on interpersonal and communication skills in preceptorship education within a general nursing setting. More specifically, the objectives were:

1) To map the nature and extent of the available literature on developing interpersonal and communication skills in preceptorship education programmes and identify gaps.

2) Examine the pedagogical approaches utilised in preceptorship education programmes to promote and develop effective interpersonal and communication skills within nursing preceptorship relationships.

3.2 Methods

3.2.1 Review Design

This review was undertaken in accordance with Arksey and O'Malley's (2005) six-stage iterative scoping review framework. The Preferred Reporting Items for Systematic reviews and Meta-Analysis for Scoping Reviews (PRISMA-ScR) were also employed (Tricco *et al.*, 2018). A scoping review protocol for this study was published on HRB Open Research in March 2021 and peer-reviewed by experts in the field of preceptorship prior to commencing the review (Appendix B: Interpersonal and communication skills development in nursing preceptorship education and training programmes: a scoping review protocol).

3.2.2 Identification Research Question

The first step comprised of identifying the research question to guide the scope of the review. Following a preliminary review of the literature, the authors set out to understand 'what is known about the development of interpersonal and communication skills amongst preceptors (general nursing) in preceptorship education programmes?'.

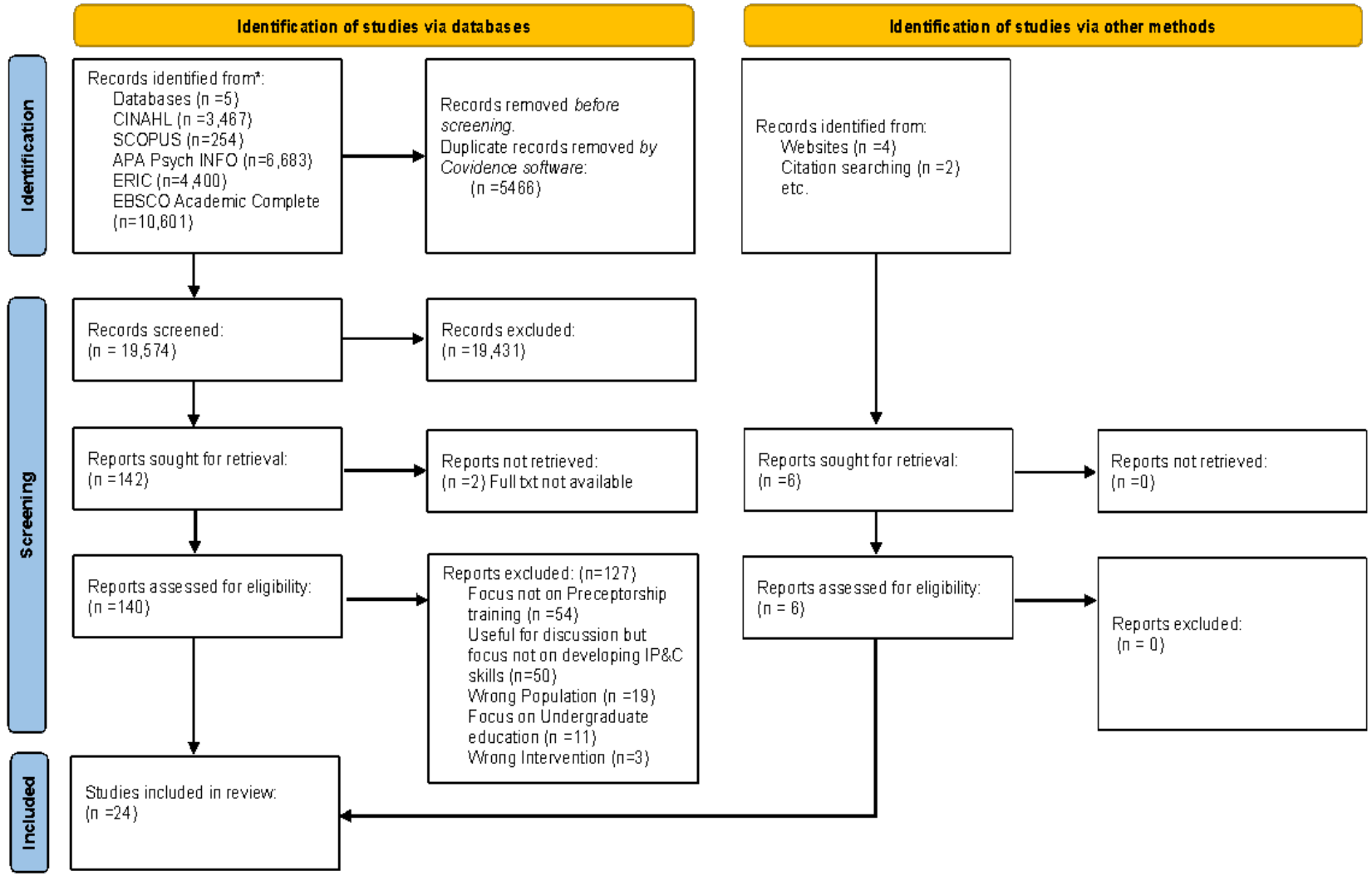
3.2.3 Search Strategy

A search strategy was developed using the Joanna Briggs Institute's (JBI) three-step approach to searching for studies (Peters *et al.*, 2020). This involved a preliminary search of databases, followed by an analysis of the words used in the titles, abstracts and indexes, another search of the databases using all of the key terms, and finally, a search of reference lists for additional studies. Expert input was also sought from a university research librarian. The key search terms and synonyms relating to 'preceptors' (Population), 'interpersonal and communication skills development (Concept) and 'nursing preceptorship education programme' (Context) were identified. Truncations, Boolean operators and MeSH headings were used where appropriate. The inclusion criteria stipulated that articles would be included in the review if they were published in English between January 1st 2000, and August 1st 2021. Articles were peer-reviewed empirical studies, reviews, book chapters and discussion papers, or grey literature sources focused on the development of interpersonal and

communication skills in general nursing preceptorship education and training programmes or the design and evaluation of general nursing preceptorship education and training programmes. Studies were excluded if they were not in the English language or were not relevant to promoting interpersonal and communication skills in general nursing preceptorship education programmes or evaluation of general nursing preceptorship education programmes. A systematic search was performed using the following five scholarly databases. The grey literature was also searched to identify relevant policy publications and professional regulatory body guidance documents (Refer to Figure 2).

3.2.4 Study Selection

Search results were uploaded to the systematic review software, Covidence (https://www.covidence.org/), to aid screening and data extraction. Duplicates were removed (n=5,466). Title and abstract screening were shared among all authors, and each record was screened independently by two reviewers, using the predetermined inclusion and exclusion criteria. To ensure consistency, up to 50 articles were initially screened by the reviewers, who then met and discussed and resolved any conflicts. Of these, 19,431 were excluded, and 146 records were full-text screened independently by two reviewers for eligibility. Any conflicts that arose were resolved by a third independent reviewer, who acted as the 'tie-breaker'. In total, 24 records were identified for inclusion. A PRISMA flow diagram illustrates the screening process (Figure 2).



Adapted From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71. For more information, visit: http://www.prisma-statement.org/

Figure 2. PRISMA Flowchart Scoping Review

3.2.5 Charting the data

Using the Joanna Briggs' Institute (2020) data charting documentation, data were extracted from the final set of included records per the review's objectives and the research question. Consistent with scoping review methodology, the studies were not appraised for their quality (Arksey & O'Malley, 2005). The extracted data was collated, critically reviewed, summarised descriptively, and prepared into a narrative synthesis by two authors. For a consultation, the results of narrative synthesis were discussed at a multi-stakeholder meeting with a preceptor, student nurse, patient, and nurse educator (clinical and university) present. The goal of this meeting was to discuss the findings of the scoping review and to establish priorities for the future development of preceptorship education programmes.

3.3 Results: Collating, Summarising, and Reporting

3.3.1 Study Characteristics

The final 24 records included in the review emanated worldwide. It appears the United States is leading in this field (n=10); Europe (n=6); Asia (n=5); South America (n=2); Australia (n=1). Quantitative methods were the most commonly employed approach to investigate the area (n=11), followed by mixed methods (n=8) and qualitative approaches (n=2). Quantitative studies were mostly either descriptive or quasi-experimental. Mixed studies were mainly questionnaires and focus groups/interviews based. Two studies did not report the evaluation methods used. The overriding focus was preceptors' evaluation of preceptorship education programmes. A detailed description of the studies is shown in Table 2. A narrative account of the review findings is presented below.

Table 2. Evaluation of Preceptorship Education Programmes

Author (s), Year, Location	Sample	Aim(s)	Methods	Programme Duration	Learning Outcomes	Pedagogical approaches	Key findings or results
Blum (2009); United States	Preceptors (n=28)	To examine the effect of using educational podcasts that infuse caring principles into situations of unsafe practice.	Mixed design pre-experimental pre-test/post-test questionnaire	Four podcasts (5-7 minutes each)	1. Attitude Problems 2. Poor Communication Skills 3. Inability To Demonstrate Knowledge and Skills Unprofessional Behaviour	Online Educational Podcast Design via intranet or YouTube	Using educational podcasts that infused scenarios of unsafe practices was helpful for nurse preceptors to learn effective ways to manage challenging situations. A significant increase in the preceptors' perception of support to carry out their role after engaging with the podcasts.

Carlson & Bengtsson (2015); Sweden	Nurses (n=8)	To evaluate preceptors' experiences of preceptorship in clinical practice after completing a credit-bearing continuous professional development course on an advanced level.	Mixed design: Focus groups and naturalistic inquiry using nurses' written accounts from reflective journals.	Approx. 200 hours of hours work (Exact breakdown not provided)	1. Critically examine and apply various adult learning principles and educational theories in clinical practice 2. Implement and evaluate models for communication and interaction in preceptor-preceptee encounters independently plan and implement teaching assignments	Blended learning approach, including Experiential learning Lectures, Workshops, Case studies, Field studies, and Structured feedback sessions. Formal evaluation via written assignment.	The course developed preceptorship skills and competencies for leaders of educational development in several areas: increased ability to give collegial support, increased trust in one's abilities, increased emphasis on reflection and increased professional status.
Chang *et al.* (2015); Taiwan	Nurses (n=386)	To explore nurse preceptors' perceptions of preceptor training courses and obtain information on their experiences in working as preceptors	Mixed method design: Questionnaire and focus group interviews	Each course lasted on average of 2 hours; 6-15 courses were offered, and the average length of each participant completed	1. Learning needs assessment skills 2. Learning outcome evaluation skills 3. Adult learning theory and principle 4. Clinical teaching skills	Not specified but states, "most courses provided follow a classroom format."	Nurses perceived communicatio n skills courses focusing on the care of individuals, families, and communities as most

				(was 20 hours).	5. Development of teaching materials and program design skills 6. Preceptor roles, functions, and responsibilities 7. Stress management and adjustment method 8. Communication skills 9. Conflict resolution 10. Problems and coping strategies related to new graduate nurses 11. Setting learning goals and activities 12. Motivation methods for new graduate nurses		fulfilling regarding learning needs and clinical usefulness. Adult learning theory and principles courses were found to be the least necessary and least clinically useful. Conflict resolution was also rated highly. Receiving inadequate training was perceived as a problem by nurses.
Condrey (2015); United States	Nurses (n=36)	To design and evaluate a preceptor training programme at a large regional medical centre	Quantitative: Using a pre-and post-test questionnaire (2 weeks after completion of the preceptor training programme)	Three weeks online (Hours not specified) 1-day workshop (4 hours)	Online learning outcomes: 1. Introduction to the role of preceptor 2. Adult learning principles and learning styles	Blended learning approach Three online units and a quiz Face-to-face workshop with	Nurses reported positively about the programme, reporting that the objectives of the programme

					3. Facilitating education Workshop learning outcomes: 1. Being a preceptor 2. Role model 3. Socializer 4. Educator 5. Evaluator 6. Case studies	case studies and group discussion	were conducted through a blended learning approach. Nurses reported that the educational environment was conducive to learning. Increased knowledge of the preceptor's role can help the preceptor work more effectively with the preceptee.
Good (2021); United States	Preceptors (n=9), Nursing students (n=40)	To evaluate an online education program for nurse preceptors of pre license students.	Quantitative : pre and post questionnaire	2.5hours	1. Module 1: The Nurse Preceptor Role. Purpose of preceptorships and the roles and responsibilities of a nurse preceptor. Knowledge, skills, and attitudes,	Online Modules that incorporated learning objectives, content slides, video vignettes	Preceptors indicated they felt more competent when teaching students, enriched their ability to foster student success and

					policies related to teaching students. 2. Module 2: Learning Styles. Generation Z students identified different learning styles and strategies to guide learning based on the needs and goals of adult learners. 3. Module 3: Teaching Strategies. Preparing the clinical environment and setting realistic expectations for student success. Coaching strategies 4. Module 4: Fostering Clinical Judgment. Novice to expert continuum,		boosted their confidence in precepting. Similarly, nursing students reported increased satisfaction with the quality of teaching and the clinical education environment.

					development of clinical judgment skills, guide learners toward competence. 5. Module 5: Evaluation and Conflict Management. Constructive evaluation and feedback to learners. Conflict management within professional relationships		
Heffernan *et al.* (2009); Ireland	Phase 1: 520 evaluation forms collected from preceptors (n=520); Focus group 1 with preceptors (n=12) and nursing students (n=12) Phase 2: Preceptors (n=191), Nursing students (n=208)	To report findings from a comprehensive evaluation of the teaching and assessment of a preceptorship programme	Mixed Design: Phase 1: Documentary analysis and focus groups) Phase 2: Questionnaire	16 hours of direct contact within two weeks Four hours update is offered to preceptors after two years.	Program content: 1. Nurse education practices 2. Local programme structure 3. The clinical learning environment reflection as a methodology	Face to Face: Didactic lectures Group work & interactive forums	The programme is achieving the nationally agreed learning outcomes. The preceptors felt the programme length was suitable to meet the learning outcomes.

					4. Principles of assessment and feedback 5. Theories of learning 6. Clinical support 7. Competence and competency 8. Portfolios Half day(4 hours) update: 1. Meeting challenges in preceptorship 2. Exploring documentation 3. Evaluation of the clinical environment and support networks.		Participants suggested a 1-2 yearly update as viable.
Jeggels *et al.* (2013); South Africa	Nurses (n=50)	To explore the pilot and evaluation of a preceptorship programme designed between the provincial	Course evaluation tool, not specified	Two weeks	1. Apply the principles of clinical teaching, learning and assessment within the	Face to Face: interactive lectures, small group activities and preceptor-student	Course evaluations and reflective journaling by participants revealed that

		government Wester Cape nursing directorate and higher education institutions.			context of adult education 2. Demonstrate an understanding of the role of the preceptor in clinical teaching and learning 3. Effectively manage a preceptor-student encounter in simulated and service-learning settings 4. Apply relevant knowledge, skills and attributes in the process of clinical teaching and learning 5. Initiate, monitor and evaluate a tailor-made skills training programme 6. Motivate students to maintain an	encounters in simulated and real service settings. Completing a portfolio of evidence, written reflective journals on preceptor-student encounters and assessment of clinical skill teaching in the service setting.	all of the desired outcomes of the course had been achieved.

					interest in learning by using creative approaches to teaching and learning.		
Kang *et al.* (2016); Taiwan	Newly qualified preceptees (n=17) and preceptors (n=17)	To develop the Situational Initiation Training Program (SITP) for preceptors and its impacts on the stress, preceptor/preceptee relationship, support provided by preceptors to preceptee, and the intention to leave among newly qualified preceptees.	Quantitative: Questionnaire at 3,6,9,12 months after the course	1-day workshop (9 hours)	Four films and discussion (4 hours), four courses (5 hours). 1. Preceptor roles, functions, and responsibilities 2. Communication skills 3. Stress management skills 4. Relationship maintenance skills	Face to Face: Four films, followed by a group discussion. Unspecified content for face-to-face courses.	On programme completion, preceptee reported moderate stress levels, good to excellent relationships with their preceptors, moderate to excellent support from their preceptors, and low intention to leave their current jobs. Preceptors reported moderate stress levels and good to

							excellent relationships with their preceptee. The SITP considerably improved the preceptor–preceptee relationship for both preceptee and preceptors
Kennedy (2019); United States	Nurse preceptors (n=88): some form of formal preceptor education (n=65) no formal preceptor education (n=23).	To examine nurses' perceptions of the nurse preceptor role and the effectiveness of nurse preceptor educational programs by comparing nurse preceptors who participated in formal preceptor education to nurse preceptors who had no formal preceptor education.	Quantitative: Questionnaire	Not Specified	Not Specified	Not Specified	Nurse preceptors with formal education had more practice based on evidence-based practice standards, understanding of the preceptor role and its components, motivation, and teaching strategies. Respondents revealed a lack of managerial

							support in preparation, workload, sufficient time with their preceptees, support for ongoing education, and availability of support.
Liao *et al.* (2019); Taiwan	Stage 1: Preceptors (n=33); Stage 2; Group 1 preceptors (n=22), Group 2 Preceptees (n=70) paired with preceptors who did not undertake CRTW.	To explore the effectiveness of a clinical reasoning teaching workshop (CRTW) in preceptors' teaching ability and self-efficacy of clinical reasoning teaching.	A quasi-experimental design. Stage I, a single group pre/post-test questionnaire Stage II, a post-test questionnaire of two independent groups (1 experienced the CRTW, the second did not)	1-day 7-hour workshop; followed by group discussion 3-4 weeks later	1. Identifying problems and exploring solutions 2. Engaging in teaching with simulated situations 3. Reflective discussion teaching steps: asking what, why and how in clinical thinking, "think aloud" based on Kolb's learning (1984).	Face-to-face interactive workshops, didactic teaching, role-play, group discussion	Preceptors that participated in the CRTW reported an increased level of knowledge of clinical reasoning teaching Preceptees reported an increased ability of preceptor's teaching ability who had completed CRTW to those who had not.
Masango (2020);	Nurses (n=20)	To explore the experiences of	Qualitative: phenomenologica	Five days	Details of the programme not	Specific details are not	Several educational

South Africa		nurse educators who attended a teaching practice workshop and to develop a supportive framework to enhance the acquisition of pedagogical skills.	l research design examining written narratives was analysed using thematic content analysis.		provided; named teaching practice sessions	provided but illude to simulation practices.	challenges experienced include poor orientation, lack of adequate support by supervisors, teaching strategies not aligned with open distance electronic learning, an expectation of doing a PowerPoint presentation without prior knowledge, use of an outdated study guide, and limited time for teaching practice. Need for a framework to improve education programme.

Myrick *et al.* (2011); Canada	Preceptors (n=18) completed e-learning programme. Preceptors (n=9) completed semi-structured interviews	To create and evaluate an eLearning program to improve student practicum experience quality while enhancing the preceptor's professional teaching capacity and promoting critical thinking.	Mixed Methods: Semi-structured interviews and secondary data sources included field notes and personal reflections.	Five months	11 modules (all not described) : 1. How to engage effectively in the evaluation process 2. Timing and relevancy of giving feedback 3. The importance of understandin g the different teaching and learning styles when working with student's cultural competence and safety 4. Precepting the unsafe student	Online interactive units, personal stories, peer-based teaching and learning, and group discussions.	Preceptors reported that through engagement in online learning, they acquired new knowledge about preceptorship that contributed to their approach to precepting, including teaching and learning. The use of personal stories was enriching to preceptors learning. They stated it enhanced their professional development and acquired skill in the use of technology.
Martensso n *et al.*	Nurses (n=27)	To describe preceptors'	Qualitative :	Over 6-month period	Learning outcomes are not reported but	Blended learning	Participants stated that the

(2016); Sweden		experiences of their educational role before and after attending a university preceptor preparation course, i.e., the CPD course in Supervision in Clinical Nursing	Semi-structured interviews before and after the course.		state that the course deals with communication methods in supervision, reflection as an educational strategy and supervision models.	approach including six face-to-face workshops for group discussions, didactic lectures, Self-directed group work and portfolios	course provided them with a new awareness of the demands and complexity of the educational role of precepting. The course increased their self-esteem and their capacity to precept. Participants stated that after the course being a preceptor was more interesting and enjoyable than before. Support from the university throughout the programme was beneficial.

Nelson *et al.* (2012); United States	Preceptors completed workshop (n=78) It does not state how many novice nurses and preceptors were included in the interviews.	To describe the implementation of a preceptorship education workshop using key themes that emerged from interviews with novice nurses (1 year qualified) and preceptors. Questions were based on themes from the literature, examining physical challenges, emotional wellbeing, social support, and activities they felt were key for novice nurse adaption to nursing.	Not Specified	Not Specified	Station 1: "Think it Out, talk it Out"; challenging clinical situations were posed to preceptors in which they must then build preceptee critical thinking skills . Station 2: Engage in reflective debriefing; Station 3: Teaching preceptee to teach patients using appropriate patient education materials; Station 4: Enabling relationship-based care that places the patient first.	Face to Face: Rotating workstations (4-6 Preceptors per station) Group discussions, Roleplay, peer learning	Preceptors rated the session excellent (40%) or very good (60%). They appreciated the interactive small group format, reporting benefits in learning from one another's experiences. The workshop have them common language and concepts as well as tools to use
Parker *et al.* (2012); United States	Preceptors (n=18)	To explored the effectiveness of a CD ROM as an instructional tool for the preceptor	Quantitative: Questionnaire	Not specified	Learning objectives not stated. However, mentions information was provided on student evaluation, techniques to facilitate student learning, role modelling, barriers to learning, strategies to	Online :CD ROM with interactive learning activities embedded with case study's e.g. A scenario depicting non-	Low completion rate of CD Rom reported, with only five preceptors of 18. This group increased from 73.3% to 85% in knowledge

					facilitate critical thinking	therapeutic communication was presented followed by an example illustrating therapeutic communication.	base post-intervention. The CD was rated positively in terms of content and effectiveness. Over half participants suggested a web-based format.
Potter *et al.* (2017); Australia	Allied Health (n=381), Nursing & Midwifery(n=195), Medicine (n=195) of which a subsample held educator positions (n=75).	To evaluate short duration programme for clinical supervisor support programme known as "Teaching on the Run".	Quantitative: Pre and post-test questionnaire	18hours approx.	Six workshops on the topics of planning learning, clinical teaching, skills teaching, assessment, supporting learners and effective group teaching	A blended learning approach: online module (30–45 minutes) and face-to-face workshop (1.5–2 hours) per topic. Workshops included group discussions, role plays, micro-teaching, debriefing and feedback sessions.	The programme had the most significant impact on self-reported confidence. The change in self-reported effectiveness was most significant for those who attended between four and six workshops. The programme has the

							potential to provide cost-effective staff training that facilitates workplace interactions and teamwork within and across departments and organisations.
Sandau *et al.* (2011a; 2011b); United States	Cohort 1: Past preceptors (n= 74), Past Orientees (n=39). Cohort 2: Current Preceptors (n=300), Current Orientees (n=53).	To examine the effect of a mandatory preceptor workshop on Preceptors via self-report of confidence and comfort as well as frequency in actively coaching critical thinking and providing orientees with positive and constructive feedback. Orientees via self-report of confidence and satisfaction with preceptors and	Mixed methods : quasi-experimental design was used pre- to postworkshop in five specific roles in addition to the frequency of coaching critical thinking and providing formal feedback. Additionally, compared cross-sectional cohorts of preceptors and orientees pre- to postworkshop. Orientee	8 hours	Overall programme outcomes not specified but states theoretical framework Benner (1984) novice to expert as a foundation for the curriculum . Preceptors received guidance on how to identify the students' stage and how to tailor their teaching and expectations based on the student's level of expertise. Understanding the	Face to face Interactive workshop: Practice session on how to tell stories to help illustrate critical thinking ; Case studies to coach critical thinking process, Role Play/Skits to depict verbal and nonverbal violence. Video presentation highlighting negative and	Nurse preceptors reported benefits from education including confidence in precepting; actively coaching critical thinking; working with a student with a different personality or learning style than the preceptor; working with

		retention of orientees	retention rates were compared for 1 year before and 1 year after the workshop.		process of coaching critical thinking.	positive experiences of preceptorship from nurses and managers. Large group discussion on diversity in preceptorship.	a student of a different ethnic background; and providing positive and constructive feedback to students. It also highlighted that students were able to distinguish between poor and excellent quality in precepting.
Taylor *et al.* (2018); United Kingdom	National Health Service trusts in the Northwest region (n=23)	To review and analyse current preceptorship programmes within NHS trusts in the Northwest of England. To evaluate the pedagogic rigour of the programme and suggest recommendations to inform the future design of	Quantitative: Questionnaire	Predominantly 1 day in length, or less	Not specified, however it was noted that each trust had its own identified learning outcomes and programme content depending on the trust's priorities and focus.	Not specified	There were instances of outstanding preceptorship and preceptorship programmes with a clear link between the strategic vision, trust policy, and its delivery. The absence of a strategic

		preceptorship programmes.					framework in preceptorship led to a lack of clear planning in local preceptorship programmes. Many trusts did not evaluate their programmes, and those that did lack a robust evaluation process. The lack of preceptorship training in trusts was highlighted. Overall, the body of evidence regarding preceptor training is weak.
Tucker *et al.* (2019); United Kingdom	Preceptors (n=14) and preceptees (n=13).	To evaluate a structured preceptorship programme developed at	Mixed Methods: Semi-structured focus groups and questionnaires.	Over 8-month period Hours not specified	Overall programme outcomes are not specified. Preceptorship session structure:	Face to face: Workshops	Preceptors and preceptees reported the importance and value of a

		Northumbria Healthcare NHS Trust and the University of Northumbria.			1. Introduction to preceptorship 2. Supporting staff and dealing with conflict 3. Risk management 4. Introduction to continuing health care and case management 5. Staff training—emotional resilience 6. Managing caseloads 7. Complex cases and long-term conditions management 8. Self-reflection and evaluation	Pedagogy not specified	formalised structured preceptorship programme. The program provided networking opportunities and sharing of best practices. The importance of protected time was raised.
Tuomikoski *et al.* (2020); Finland	Nurses (n=120)	To evaluate how an educational intervention affects nurse mentors' competence in mentoring nursing	Quasi-experimental study design with pre- and post-tests questionnaire	Three months	Learning outcomes not specified Content on the following themes was delivered	Blended Learning Face-to-face teaching Case studies	Nurse mentors' mentoring competence increased across all mentoring

		students during clinical practice.			1. Acting as a mentor 2. Mentoring process 3. Diversity of mentoring 4. The motivation of the mentor 5. Mentoring practices between mentor and student 6. Goal-oriented mentoring 7. Student-centred evaluation 8. Feedback 9. Mentoring practices in the workplace 10. Permissive learning environment.	Online diaries	competence areas after the educational intervention. More specifically, the participating nurses showed a statistically significant increase in their competence regarding knowledge of mentoring practices in the workplace, student-centred evaluation, identifying student needs, mentoring practices between mentor and student, supporting students' learning processes,

							goal orientation in mentoring and constructive feedback.
Wink & Ruland (2016); United States	Not specified	To explore the design, implementation, and evaluation of a fully online preceptor development programme	Quantitative: Questionnaire	Ten weeks	1. Describe the roles and responsibilities of the preceptee, preceptor, and faculty in the clinical preceptorship experience. 2. Analyse the legal implications of precepting. 3. Use the principles of biculturalism and adult learning when in the preceptor role. 4. Develop and refine skills needed to precept prelicensure nursing students and both novice and experienced nursing staff. 5. Analyse issues associated with the clinical progression of preceptees	Online Learning: Module 1: Preceptor Role Module 2: Learner Assessment Module 3: Professional Development Module 4: Teaching Module 5: Evaluation Module 6: Communicatio n Module 7: Precepting Module 8: Evidence-Based Module 9: Looking to the Future Each module consisted of learning objectives,	The Program was well received by nurses who completed it. Although time, quality of Internet access, and comfort with online learning were reported difficulties, participants have found an online program an excellent option to prepare them for their role as a preceptor.

					6. Assess the learning needs of the preceptee. 7. Implement methods to improve the organizational and prioritization skills in preceptees. 8. Discuss clinical teaching and evaluation strategies based on assessed learning needs. 9. Apply methods of conflict resolution. 10. Analyse potential preceptorship problems and solutions.	followed by consent and included videos and journal articles. An online group discussion occurred after each module in which students were expected to post and comment on other students' comments critically.	
Wu *et al.* (2020a); Singapore	N=6 Experts in the field carried out a content validity assessment N=10 Preceptors piloted the new educational tool examining it in terms of usability, navigation, website design, and quality of information.	To develop a web-based clinical pedagogy (WCP) program for Preceptors and conduct a pilot program evaluation	A three-step process was applied to integrate a theoretical framework, including evidence from the experts' systematic review and content validity and a pilot test of the content and	Not specified	1. Introduction of preceptorship 2. Planning care with preceptee 3. Conducting clinical assessment 4. Facilitating clinical learning 5. Creating a positive clinical	Online Learning 1) watch the scenario in the video. 2) exposure to learning theories and concepts in clinical education. 3) quiz. Real-Life Scenarios.	Preceptors reported that the website was easy to use and navigate. They commented that the videos in each module are beneficial for nurses to understand the real

			technical development of the program with preceptors.		learning environment 6. Providing constructive feedback 7. Handling challenging situations 8. Managing underperforming preceptee.		situation in the clinical setting. The unique features of the WCP program, e.g., peer learning, consultation with experts and interactive features offer a flexible, comprehensive learning program.
Wu *et al.* (2020b); Singapore	Preceptors (n=150)	To examine the effectiveness of the Clinical Teaching Blended Learning program on nurse preceptors' clinical teaching competencies, self-efficacies, attitudes toward web-based learning, and blended learning outcome	Quasi-experimental single-group pre-test and post-test design questionnaire	1-day workshop (8 hours) 3 hours online, 4 hours face to face	Case Study 1: orientation for a final year student who has previously trained in another hospital. Case study 2: interpersonal conflict with a mature student, provide feedback student is not a good team player. Case study 3: unenthusiastic foreign national student appears withdrawn and lost.	Blended Learning Interactive web-based learning. Case-based group discussions and presentations.	Preceptors had significantly higher total mean scores for clinical teaching competence, self-efficacy, attitudes toward web-based continuing learning and blended learning after completing the program. The study suggests

							that the blended learning approach provides pedagogical benefits to the participants to enhance their competencies and self-efficacy in clinical teaching.

3.3.2 Design and Development of Education Programmes

The design and development of preceptorship education programmes were examined as part of the review. The duration of the programmes varied substantially internationally. However, programmes are predominantly 1-2 days in length or less (n=7), while some run from two weeks to -3 months (n=2), 3-5 months (n=3), and others 6 -9 months (n=4). Some studies did not report the duration of the programme (n=6). The designs and development of preceptorship education programmes contents are typically designed locally (hospital) in conjunction with an affiliated university (Blum, 2009; Carlson & Bengtsson, 2015; Good, 2021; Kang *et al.*,2016; Jeggels *et al.*,2013; Sandau *et al.*, 2011a; Sandau *et al.*, 2011b; Tuomikoski *et al.*, 2020; Wu *et al.*, 2020a; Wu *et al.*, 2020b). In some cases, teaching content is derived from literature review exercises (Liao *et al.*, 2019; Wink & Ruland, 2016; Parker, 2017) or national preceptorship guidelines (Heffernan *et al.*, 2009). Nelson *et al.* (2012) utilised feedback from preceptors and newly qualified nurses to develop their programmes. Several learning theories were identified as conceptual frameworks for the design of programmes, including socio-constructive learning theories (Tuomikoski *et al.*, 2020), Kirkpatrick evaluation model (Potter *et al.*, 2012), Kolb's experiential learning theory (Jeggels *et al.*, 2013), Bandura's self-efficacy theory (Wu *et al.*, 2020) and Benner's (1984) learning theory (Sandau *et al.*, 2011a; Sandau *et al.*, 2011b). While none of the studies explicitly stated the budget set to design and implement the education programmes, two referred to budget constraints, mainly concerning the annual implementation of preceptorship programmes (Blum, 2009; Taylor *et al.*, 2018).

3.3.3 Learning Outcomes of Preceptorship Education Programmes

It is evident from Table 2 that the learning outcomes for preceptorship education programmes vary internationally. While many studies do not specify the overall programme learning outcomes (n=7), the detail and presentation of programme learning outcomes differed from short descriptions to comprehensive outlines of the programme. Figure 3 highlights the key findings from a conceptual context analysis carried out on the available details provided to identify the key themes and the frequency of the concept across preceptorship programmes. Only (n=4) studies (Blum,2009; Carlson & Bengtsson,2015; Chang *et al.*, 2015; Kang *et al.*, 2016)

explicitly mention the development of interpersonal skills or communication skills in their learning outcomes. While several studies imply the development of these skills under key preceptorship skills; examples include fostering a positive learning environment (Good, 2021; Jeggels *et al.*, 2013; Parker *et al.*, 2012; Potter *et al.*, 2017), conflict resolution (Good, 2021; Liao *et al.*, 2019; Nelson *et al.* 2012), feedback (Heffernan *et al.* 2009; Myrick *et al.* 2011), role modelling (Condrey, 2015; Parker *et al.*, 2012) and emotional resilience (Tucker *et al.*, 2019). However, evaluating the full extent of the focus on developing interpersonal and communication skills in preceptorship education programmes is challenging.

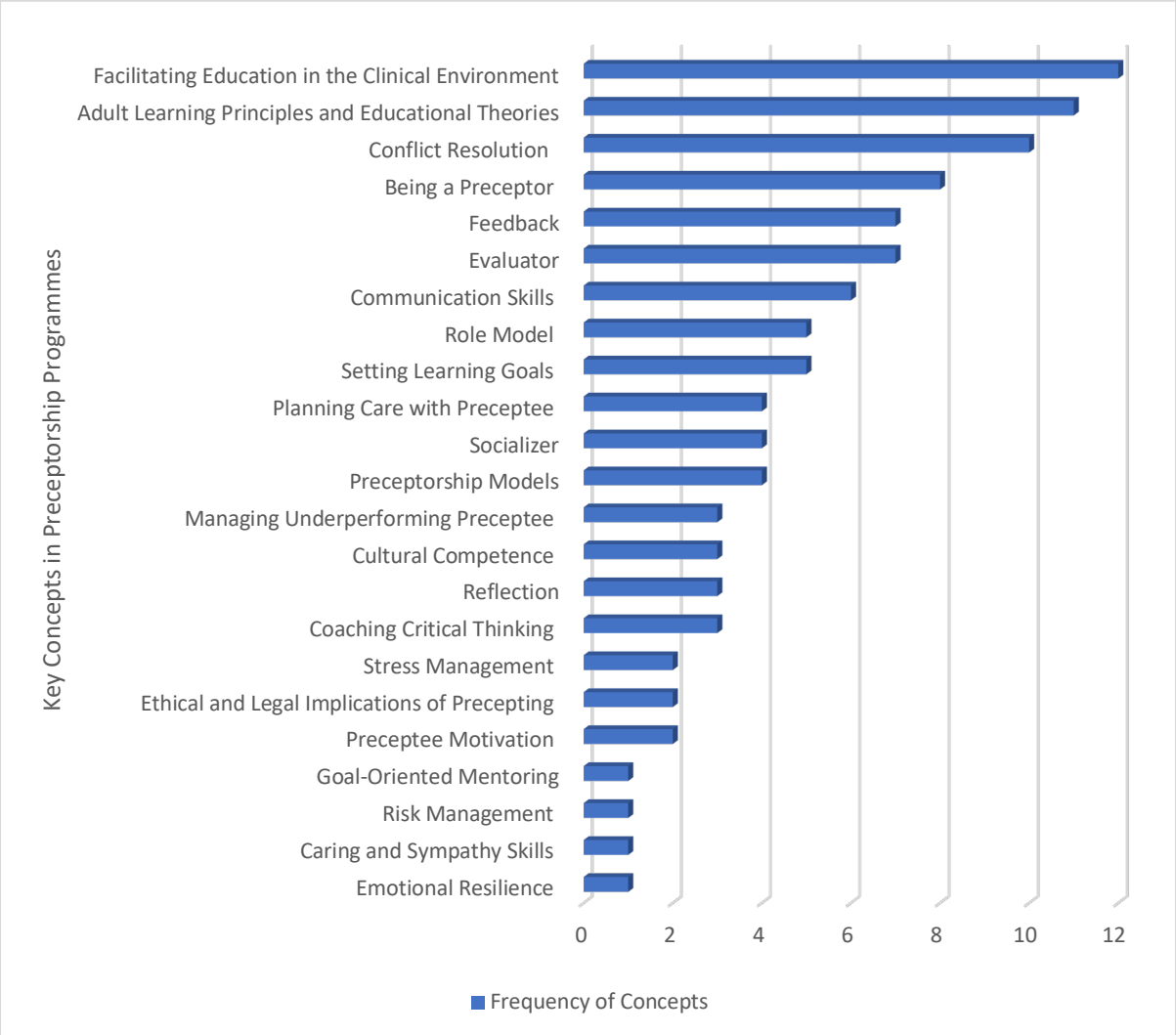


Figure 3. Concepts in Preceptorship Education Programmes

3.3.4 Pedagogical Approaches to Preceptorship Education Programmes

A diverse application of pedagogical approaches to preceptorship education can be observed. However, several studies (n=6) did not provide an overview of the pedagogical approaches adopted. Notably, the available information ranged from short descriptive outlines of pedagogical strategies to detailed outlines of each approach adopted. The identified literature shows that 37% of programmes implemented face-to-face teaching methods, 31% online teaching methods, and 32% blended teaching methods. Figure 4 highlights traditional didactic lectures and experiential learning activities such as group discussions (Liao *et al.*, 2019; Sandau *et al.*, 2011a), case studies (Carlson & Bengtsson,2015; Condrey, 2015) and role-play (Nelson *et al.*, 2012; Wu *et al.*, 2020b) were reported as adopted pedagogical strategies. Examples of online eLearning activities range from podcasts (Bloom, 2009), reusable learning objectives (RLOs) (Good, 2021; Myrick *et al.*, 2011; Wink & Rutland, 2016), interactive forums (Heffernan *et al.*, 2009), online portfolios (Martensson *et al.*, 2016); and quizzes (Condrey, 2015). However, it is difficult to determine the precise pedagogical approaches to achieve each learning outcome identified in the previous section, particularly the development of interpersonal and communication skills, which will be examined further in the next section.

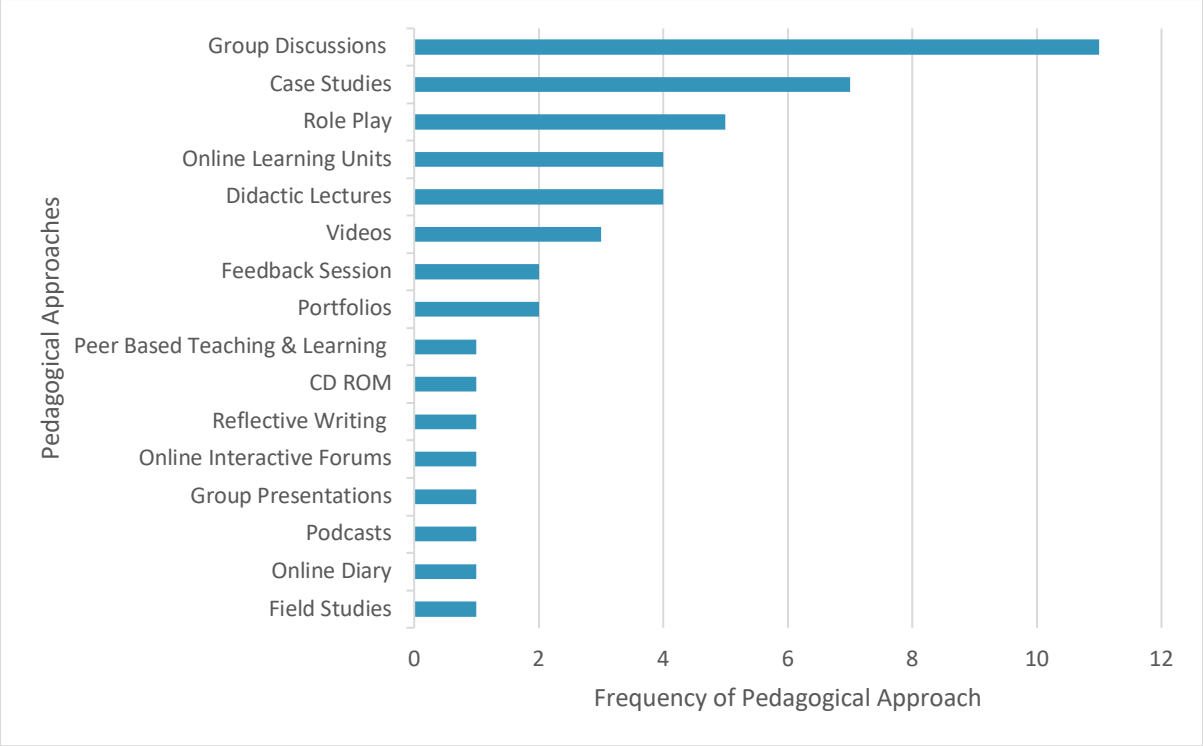


Figure 4. Pedagogical Approaches to Preceptorship Education Programmes

3.3.5 Development of Interpersonal and Communications Skills Development in Preceptorship Education Programmes

A comprehensive understanding of the theoretical and multifaceted skill set required for developing interpersonal and communication skills effectively in different circumstances and with different populations requires practice. However, as previously highlighted, very few studies explicitly mentioned the development of such skills in the learning outcomes (Kang *et al.*, 2016; Blum, 2009; Martensson *et al.*, 2016; Chang *et al.*, 2015; Jeggels *et al.*, 2013). When included in programmes, the focus is typically placed on exploring communication models, creating positive relationships with students or strategies to deal with negative interactions in preceptor-student encounters with only one study Nelson *et al.* (2012), focusing on enabling relationship-based care in a nursing preceptorship placing the patient first. Tucker and colleagues (2019) refer to interpersonal skills of emotional resilience. However, a detailed description of the information covered regarding emotional resilience is limited, with most articles providing an insufficient description of the concepts included in the programmes.

Several programmes refer to preceptorship practices that require effective interpersonal and communication among student nurses, such as fostering clinical reasoning skills (Liao *et al.*, 2019; Sandau *et al.*, 2011a; Sandau *et al.* 2011b; Wu *et al.* 2020a), coaching skills (Good, 2021), facilitating a positive learning environment (Tuomikoski *et al.*, 2020; Condrey, 2015), clinical teaching skills (Chang *et al.*, 2015; Wink & Ruland, 2016; Potter *et al.*, 2017), role modelling (Parker *et al.*, 2012; Condrey, 2015), giving feedback (Heffernan *et al.*, 2009; Tuomikoski *et al.*, 2020; Wu *et al.* 2020a) and engaging in conflict resolution (Tucker *et al.*, 2019; Blum, 2009; Liao *et al.*, 2019). Comparably to the lack of definition regarding the concepts, it is difficult to determine the level of focus on actively developing interpersonal and communication skills required to facilitate these critical skills in a nursing preceptorship.

It is evident from Table 2 that the application of active pedagogical approaches such as group discussions, case studies and role-plays are implemented. However, it is difficult to identify the specific pedagogical approaches adopted to achieve each specified learning outcome from the included studies. Similarly, it is challenging to determine the pedagogical approaches adopted to develop interpersonal and communication skills in preceptorship education programmes. Information on pedagogical approaches was presented in general terms in relation to the overall programme in most articles. Further details can be found in Table 2.

3.3.6 Evaluation of Preceptorship Education Programmes

Overall, preceptorship education programmes were evaluated positively by trainee preceptors. Perceived benefits of completing the preceptorship education programme included increased knowledge and ability to carry out the role (Carlson & Bengtsson, 2015; Condrey, 2015; Kennedy, 2019; Myrick *et al.*, 2011; Martensson *et al.*, 2016; Potter *et al.*, 2017), increased ability to give support (Carlson & Bengtsson, 2015; Good, 2021; Martensson *et al.*, 2016; Tuomikoski *et al.*, 2020; Wu *et al.*, 2020b), and increased professional status (Carlson & Bengtsson, 2015; Myrick *et al.* 2011). Some studies indicated that the programme's learning outcomes were achieved (Condrey, 2015; Heffernan *et al.*, 2009; Jeggels *et al.*, 2013). Preceptorship education programmes were valued amongst trainee preceptors as a space where peer learning

occurred, creating a safe space to examine best practices (Condrey, 2015; Tucker *et al.*, 2019; Nelson *et al.*, 2012). The importance of ongoing educational support and protected time following the preceptorship education programme was reported in several studies (Blum, 2009; Kennedy, 2019; Heffernan *et al.*, 2009; Martensson *et al.*, 2016). Increased positive interpersonal relationships among students and preceptors and decreased stress levels among both parties following the programme were also reported (Kang *et al.*, 2016). Similarly, students reported high satisfaction with preceptors in their ability to facilitate a quality learning environment after completing a preceptorship education programme (Good, 2021; Liao *et al.*, 2019; Sandau *et al.*, 2011a).

3.4 Discussion

Trainee preceptors bring their own distinctive set of communication skills, cultural influences, learning styles and life experiences that directly affect their ability to engage in effective interpersonal relationships. Nurse educators must build on trainee preceptors' personal strengths and experiences to enhance their interpersonal and communication skills. Effective interpersonal and communication skills are required by preceptors to carry out the key roles of a preceptor, including socialisation into practical skills (Ewertsson *et al.*, 2017), role modelling (Sandau *et al.*, 2011a), questioning skills (Phillip *et al.*, 2017), feedback (Myers *et al.*, 2016), and developing clinical reasoning skills (Van Wyngaaden *et al.*, 2019). Therefore, the importance of a structured preceptorship education programme that focuses on proactively developing effective interpersonal and communication skills is essential.

Evaluation of preceptorship education programmes identify how communication skills were ranked highly in terms of importance by preceptors. Preceptors reported that preceptorship programmes that include communication skills development resulted positively in their ability to fulfil their roles (Chang *et al.*, 2015). Despite this, preceptors have reported feeling incompetent in teaching students the skills for communicating with patients and other healthcare professionals (Hong *et al.*, 2021). Preceptors also require strong emotional intelligence skills to guide nursing students' clinical education. Such preceptor skills include being mindful of their own emotions and their

responses, as well as reading students' emotions, empathising with their point of view and helping students regulate their emotions are vital to creating a psychologically safe and collaborative learning environment with students (Judkins 2020; Lyman & Mendon, 2021). Without an emphasis on interpersonal and communication skills development, preceptors may lack the necessary skills to facilitate positive interpersonal relationships among students. Preceptors and students have expressed how positive interpersonal relationships are fundamental to creating a constructive learning environment (Reberio *et al.*, 2015). A supportive environment can also foster positive student attitudes toward nursing as a profession and towards patients (Phuma-Ngaiyaye *et al.*, 2017; Marks Maran *et al.*, 2013).

While the literature examining preceptorship education programmes provides a vague insight into the level of focus and pedagogical approaches to developing interpersonal and communication skills, several strategies, including podcasts, online learning units, case studies, role play and group discussion, have been highlighted. A significant proportion of research is available examining the development of interpersonal and communication skills in nursing, particularly at the undergraduate level. Identifying best practices for teaching interpersonal and communication skills in nursing education can assist nurse educators in adapting such methods for preceptorship education and training programmes. The following section will discuss newly emerging pedagogical approaches to teaching interpersonal and communication skills in nursing that did not appear in the included studies of this review that could be used to enhance interpersonal and communication skills development in preceptorship education and training programmes.

The application of standardised patients (S.P.) in developing communication skills in undergraduate nursing education is widely reported (MacLean *et al.*, 2017). S.P. has been found to create a realistic learning environment that allows learners to practice skills with real people and receive feedback on their performance while being promoted to reflect on their practice concurrently. Improved communication effectiveness of learners who had trained with an S.P. was observed. However, students reported feeling anxious but valued the learning experience, particularly the

immediate feedback from the standardised patient and group discussions that typically followed. Perry and colleagues (2013) carried out a systematic review of the evidence involving real patients in interpersonal skills training of mental health nursing students. Overall conclusions from the review drew a positive student attitude to the pedagogical intervention, with students reporting value in facilitating the development of their interpersonal skills through "first-hand" and "real" experiences of patients. Levett-Jone's (2007) earlier study applied audio recordings of student nurses' real-life interactions from completing an admission to a ward as an educational resource for the undergraduate nursing programme in the United Kingdom. Another pedagogical approach observed in the broader nursing literature is implementing role play for interpersonal and communication skills development (Wang *et al.*, 2015; Kesten, 2011; Hong-Gu *et al.*, 2011). Nursing educators have reported that role-playing is beneficial in creating learning opportunities in which the learner must think on their feet in real time, replicating patient interaction. Role-play has also demonstrated the ability to receive feedback from the simulation and watch and reflect on how other students approach the same simulation (Pilnick *et al.*, 2018). However, criticism of role-play interaction exists for its lack of authenticity compared to real-life interactions, noting the artificiality of the scenario and the potential lack of authenticity due to poor acting skills on the part of the role player, i.e., the nurse trainee/student (Nestel & Tierney, 2007).

The results of this review highlighted the positive impacts of education for nurses on facilitating their roles and responsibilities as preceptors, as well as the desire amongst preceptors to receive formal education to equip them in their roles. Nonetheless, our findings also show that delivering preceptorship education and training programmes can be a significant challenge. Nursing management is often faced with logistical challenges in balancing the clinical needs of the care setting and the educational needs of trainee preceptors. Key challenges in preceptor education are overcrowded learning environments, understaffing, and time limitations (Condrey, 2015; Taylor *et al.*, 2018; Wu *et al.*, 2020b). Dedicated study time to complete programmes can be challenging to secure, resulting in preceptors not receiving formal education (Taylor, 2018; Wu *et al.*, 2016) or preceptors expressing inadequate training (Chang *et al.*,

2016). In some instances, trainee preceptors completed the programme independently (Wu *et al.*, 2020a; Wink & Ruland, 2016; Tuomikoski *et al.*, 2020; Parker *et al.*,2012). These challenges may suggest why most preceptorship education and training programmes are reported as one or two days in length or potentially less. Such challenges may also indicate why many programmes reported in this review (63%) were either held online or a blended learning approach, reducing the required time for face-to-face teaching. Wu and colleagues (2018) recent systematic review of online learning resources available for nurse preceptors reported benefits of accessibility, convenience, flexibility, and an alternative for preceptors who face workload, time, and support system challenges. Thus, various approaches exist to navigate the challenges preceptors face in accessing the required education to engage in their role successfully.

3.4.1 Recommendations for future preceptorship education programmes

This review identified several common themes within programme curricula, including facilitating education in the clinical environment, adult learning principles and educational theories, conflict resolution, being a preceptor, feedback, and evaluation. The prevalence of these components suggests that they may be critical concepts in future preceptorship education and training programmes to ensure a comprehensive curriculum.

A small number of studies provided theoretical frameworks utilised to guide the development of the contents of the programme, including socio-constructive learning theories (Tuomikoski *et al.*, 2020), Kirkpatrick's evaluation model (Potter *et al.*, 2012), Kolb's experiential learning theory (Jeggels *et al.*, 2013), Bandura's self-efficacy theory (Wu *et al.*, 2020) and Benner's (1984) learning theory (Sandau *et al.*, 2011, 2011b). Masango (2020) noted that the lack of an educational framework negatively impacted the programme, resulting in an ad hoc approach. Utilising a theoretical framework in developing a programme is important as it permits nurse educators to make informed decisions around its design, development and delivery. Nursing is an experienced-based educational programme (Landers *et al.*, 2020) which parallels the findings of the identified literature, suggesting the design of preceptorship education programmes

should also take this approach, including pedagogy that permits active participation that is grounded in the principles of experiential learning.

It is evident from this review's findings that in the available literature, emphasis is placed on pedagogies that involve active participation where students are offered an experiential learning opportunity as they 'learn by doing'. Students reportedly felt better prepared, more confident, and self-aware of their interpersonal and communication skills than before the pedagogical interventions (Blum, 2009; Carlson & Bengtsson, 2015; Kang *et al.*, 2016). Chang *et al.* (2015) reported that preceptors who completed preceptorship courses that were conducted using a traditional classroom style often remained inadequate at fostering positive interpersonal skills and clinical teaching skills in a clinical setting. Therefore, the evidence to date supports the application of active pedagogy to develop interpersonal and communication skills.

The literature has highlighted several effective experiential learning pedagogies for developing interpersonal and communication skills in nursing education; however, there may be some barriers to including some of these approaches in a preceptorship education programme. Firstly, as discussed in the previous section, time is a considerable challenge for nurse educators and the organisation of preceptorship education programmes; hence many programmes take a blended learning approach with typically one day of face-to-face teaching. Therefore, for participants to gain the most from face-to-face contact time and engage in hands-on learning, the theoretical underpinning of interpersonal and communication skills would be best covered as an online unit at a time that suited them prior to the in-person teaching day.

Secondly, the review findings highlighted that many preceptorship education programmes are run locally in healthcare institutions by nurse educators with a minimal budget. Therefore, while educational practices such as standardised patients and real patients have been beneficial, the budget to implement this method may not be available. Also, nurse educators may struggle to recruit real patients for each programme. A more cost-effective simulated experience that could offer trainee preceptors the first-hand experience of interpersonal relationships of a preceptorship

may be beneficial. Similarly, role-play has been deemed as beneficial to actively developing interpersonal and communication skills; however, it relies on the trainee preceptors' ability to "act" the role of a preceptor, student, or patient, and this can sometimes be difficult for the trainee preceptor who fails to comprehend their perspective in a situation. A simulated scenario that could provide trainee preceptors with an authentic first-hand experience of another person's perspective (e.g., the patient) could be highly beneficial in developing interpersonal and communication skills. Emerging technologies such as Virtual Reality (V.R.) could be a possible solution. V.R. has been found to offer unique immersive experiences depicting challenging interpersonal scenarios in a safe environment, thus reducing the learner's anxiety, facilitating implicit immediate feedback and improving training outcomes (Schmid Mast *et al.*, 2018). V.R. also negates practical challenges previously mentioned, such as recruiting actors and patients or relying on trainee preceptors to role play. Our findings suggest that there may be value in investigating the application of V.R. in preceptorship education programmes to provide a cost-effective experiential learning opportunity for trainee preceptors.

While professional preceptorship relationships involve students, preceptors, and patients, it is evident from this review that the patients' voice is missing from preceptorship education programmes. Only Nelson *et al.* (2012) referred to enabling relationship-based care in a nursing preceptorship, placing the patient first as a learning outcome of the preceptorship education programme. Patients also play a fundamental role in nursing students' clinical education, providing valuable perspectives to enrich student learning (Suikkala *et al.*, 2018), yet their involvement in a nursing preceptorship remains unappreciated and underrepresented in preceptorship education programmes. Similarly, this review highlighted the lack of patient involvement in the design of preceptorship education programmes reporting content derived from national guidelines, literature reviews, collaboration with universities and student and preceptor feedback. The application of Public and Patient Involvement (PPI) to improve health services has been observed for several decades and, more recently, in improving educational practices (Ocloo *et al.*, 2021). The future design of preceptorship educational programmes must involve PPI to clarify patients'

experiences of being involved in a nursing preceptorship and identify the key informational and educational needs recommended from a patient perspective to facilitate positive interpersonal relationships and patient care in a nursing preceptorship. This approach would go beyond the existing dyadic lens of preceptorship (Peplau 1997; Washington *et al.*, 2013) and emphasise the triadic nature of the relationship. Hierarchical communication barriers between faculty and preceptors have also been previously reported, resulting in preceptors' uncertainty about learning objectives and discrepancies in clinical assessment (Dev *et al.*, 2020). Therefore, the authors recommend that the future design of preceptorship education programmes should involve all parties of nursing preceptorship, students, preceptors and patients, and local programme facilitators in conjunction with an affiliated University to create an inclusive and authentic learning programme.

3.4.2 Recommendations for Future Research

Without a comprehensive preceptorship course outline (including a detailed description of training methods, pedagogical approaches, training hours and evaluation methods), it is challenging to comprehensively analyse and compare their effectiveness from such studies, which requires future methodological rigour. Further work examining the impact of an increased focus and active pedagogy on developing interpersonal and communication skills in the interpersonal relationships of a preceptorship is required. An empirical investigation is required to examine the potential of technology as a delivery method of training programmes and identify innovative methods of training preceptors. Finally, the application of PPI in the design and development of future preceptorship education programmes should be examined, including preceptors, students, and patients.

3.4.3 Strengths and Limitations

This is the first scoping review to examine interpersonal and communication skills in general nursing preceptorship education programmes providing key information that can inform the design and development of future preceptorship programmes. Furthermore, this review examines specific areas of preceptorship education programmes, such as duration, content, design, and pedagogical approaches that are

key to assisting nurse educators in developing effective preceptorship programmes. This review has several strengths, including a previously published and Internationally peer-reviewed protocol outlining a comprehensive and structured search of the literature undertaken, adhering to the Arksey and O'Malley framework. The multidisciplinary author team from various training backgrounds (i.e., Nursing, Psychology, Social Research) reduced potential bias and encouraged a holistic analysis of the identified studies. Due to the heterogeneity of the included studies in terms of design, programme structure and measured outcomes, the generalisability of the results is also subject to certain limitations of the individual studies, such as purposive selection and small sample sizes. Therefore, a descriptive narrative summary was conducted to synthesise the variety of approaches.

3.5 Conclusion

Considering the global implementation of preceptorship in nursing education, the literature shows a limited number of studies investigating the development of interpersonal and communication skills in nursing preceptorship education programmes. A lack of direct focus on interpersonal and communication skills development may result in preceptors lacking the necessary skills to facilitate positive interpersonal relationships in a preceptorship. Investing in developing trainee preceptors' interpersonal and communication skills is essential in maintaining good interpersonal relationships, creating an effective teaching environment and enhancing good patient care.

Chapter 4: Methods

4.1 Introduction

The previous chapters highlighted that highly developed interpersonal and communication skills are essential in developing successful and constructive professional preceptorship relationships (Ke *et al.*, 2017). However, the literature shows that discord can arise within the preceptor-student relationship due to poor interpersonal and communication skills (Dyess & Sherman, 2009; Gardiner & Sheen, 2016; Omer & Moola, 2019). Furthermore, patients play a central role in nursing preceptorship relationships. Nevertheless, the patient experiences and perspectives are mainly uncaptured in the literature and are unrepresented in current preceptorship education programmes (Suikkala *et al.*, 2021; Hardie *et al.*, 2022). Additionally, a lack of patient involvement in the design of preceptorship education programmes has been noted (Hardie *et al.*, 2022).

4.1.1 Chapter Overview

This chapter describes a suitable methodology to bridge the gap identified in the literature in co-designing and co-creating a new preceptorship education and training programme that focuses on developing the preceptor's interpersonal and communication skills, namely Experience Based Co-Design (EBCD). EBCD offers a practical and rigorous process for exploring nursing preceptorship experiences and improving preceptorship educational programmes, with full involvement from those central to the professional relationship, including students, preceptors, and patients, as well as nursing and educational experts. Before appraising EBCD in more detail below, the researcher examined several design methodological approaches to determine the most suitable methodology for this study.

4.1.2 Consideration of Different Design Science Methodologies

Research based on design science is concerned with generating knowledge by projecting and prescribing solutions to real problems (Dresch *et al.*, 2015). This research study aims to design and create an innovative preceptorship educational programme that develops interpersonal and communication skills amongst preceptors

to facilitate positive interpersonal relationships in a nursing preceptorship. Therefore, the researcher examined several design methodological approaches to determine the most suitable methodology for this study.

4.2 Design Science Research

Design Science Research (DSR) is a multi-method research approach in which the object of the study is the development of a new artefact and the design process, i.e., it simultaneously generates knowledge about the methods used to design an artefact and evaluation of the artefact itself. DSR was initially applied to information systems development but has recently expanded into education, healthcare, computing science and engineering (Vaishnavi & Kuechler, 2015). DSR is a multidisciplinary field research approach that draws on the expertise and constructed realities of different professional fields to create a new artefact. DSR applies an iterative design process that ensures the construction and evaluation of the artefact are carried out in a rigorous framework and employs a collaborative, iterative process of problem clarification, design, development, testing, reflection, redesign, and evaluation.

Typical outputs of DSR are constructs, models, methods, and instantiations (Vaishnavi & Kuechler, 2007). Constructs arise during identifying the problem and refer to identifying words and concepts to conceptualise the problem. For example, the researcher has identified nursing preceptorship relationships as a key concept of this project. A model is “a set of propositions or statements expressing relationships among abstract constructs” (Vaishnavi, 2007, pg.14). For example, teaching models are specific instructional plans designed per learning theories. In DSR, a model is presented in terms of what it does, and a theory is described in terms of the constructed relationships. A method refers to “goal-directed plans for manipulating constructs (concepts) so that the solution statement model is realised” (Vaishnavi, 2007, pg. 14). For example, the researcher examined various educational theories to investigate evidence-based pedagogical approaches which could be implemented to create an effective educational programme for developing interpersonal and communication skills (deductive reasoning). The final output of DSR is an

“instantiation”, i.e., the newly designed artefact that operationalises the constructs, models, and methods.

While implementing a DSR methodology could result in developing a new artefact (preceptorship education programme), DSR methodology focuses more on constructing, evaluating, and explaining how the new artefact works in the real world. Moreover, the principles of a design science research method do not require a joint collaboration between researchers and participants in the research environment (Collatto *et al.*, 2018). The researcher would therefore argue that the method lacks focus nor provides a structured framework for identifying students, preceptors and patients’ real-world problems to collaborate and create human-centred educational resources that combine experiential knowledge (experiences) and scientific knowledge (literature-based knowledge). Consequently, the researcher argues that DSR would not be a suitable methodology to co-design and co-create the new preceptorship education programme.

4.3 Action Design Research

Action Design Research (ADR) represents a variant of design science research that combines the principles of action research (AR) and design science research (DSR) (Sein *et al.*, 2011). As mentioned in the previous section, DSR is a methodology that focuses on developing a new artefact and generates knowledge about the design process. AR in the context of education relates to educators seeking ways to provide good quality education by transforming the quality of teaching activities through evaluation and inquiry. It is described as an inquiry conducted by educators in their own settings to advance their practice and improve their students learning, with many educators believing it provides a framework to grow professionally, become self-evaluative and take responsibility for their teaching practices (Efron & Ravid, 2019). Moch *et al.*'s (2016) systematic review on the application of AR in nursing education identified a growing application of the method ranging from examining individual lecturers' practices to implementing innovative teaching methods and examining students' roles in the classroom.

ADR is a method that applies a systematic approach to solve a set of practical problems that researchers/educators experience in their practice and contribute to the existing body of knowledge by creating new research artefacts (Marjanovic *et al.*, 2016). ADR employs a collaborative, iterative process over four stages, including 1) problem formation, 2) building, intervention, and evaluation, 3) reflection and learning, and 4) formalisation of learning. While ADR provides a structured framework for designing innovative educational practises, ADR privileges organisational influences on the design and evolution of the new artefact and typically aims at solving a problem within a single organisation (Haj-Bolouri *et al.*, 2018). As previously highlighted, the problem the researcher aims to address was identified through a systematic and detailed examination of the international literature. This identified positive and negative influences on preceptorship relationships and highlighted the lack of active development of interpersonal and communication skills in current preceptorship education. While the proposed new preceptorship education programme will be influenced by organisational operations of preceptorship education programmes observed in chapter 3, such as the length of the programme, budgets, and pedagogical approaches, it is not being designed and created to meet the needs of an individual organisation. Its purpose is to create a transferrable educational tool that local organisations can adapt to suit their local needs if required. In post-doctoral, the researcher aims to evaluate the implementation of the new education programme across several university hospitals in Ireland. Therefore, ADR would not be a suitable methodology for this research project as it typically focuses on a single organisation.

4.4 Co-Design

Design means "to invent and bring into being" (Merriam-Webster Dictionary and Thesaurus, 2022). Therefore, design deals with creating a new artefact that does not exist. Co-design is "meaningful end-user engagement in research design and includes instances of engagement that occur across all stages of the research process and range in intensity from relatively passive to highly active and involved" (Slattery *et al.*, 2020, pg. 3). A defining characteristic of co-design is its emergent and adaptive nature, making detailed pre-specification of interventions and outcome measures impossible

(Goodyear-smith *et al.*, 2015). Similar to DSR and ADR, Co-design in nursing education involves a cyclic process in which the objective is to create a new artefact (educational intervention). Co-design methodology involves the collaboration between researchers and end-users from the onset of the study, including question framing, research design and delivery, evaluation, and dissemination (Goodyear-smith *et al.*, 2015). Co-design projects in healthcare education can involve PPE patient/public involvement engagement in which patient/public become partners in the research process, facilitating collaboration throughout the iterative cycles of design, checking that the information and consent materials are understandable and advising on the dissemination of findings (lay findings for general public understanding) (Schilling & Gerhardus, 2017). A recent systematic review examining co-design and co-production in nursing and midwifery education highlighted a growing trend in applying such methods to create a human-based pedagogical curriculum resulting in rich and authentic learning experiences for students (O'Connor *et al.*, 2021). Furthermore, the review highlights the positive impact PPI engagement in the co-design of the curriculum has not only on the students learning but on the members of the public/patients' understanding of nursing/midwifery practises and their relationship with nurses and midwives as they work collaboratively together (O'Connor *et al.*, 2021).

Co-design is typically a participatory approach to facilitate prioritisation and research agenda setting (Slattery *et al.*, 2020), contribution to study design (Schilling & Gerhardus, 2017) and a series of interventions that brings staff and patients to design local solutions to local problems (Jessup *et al.*, 2018). While many of the concepts associated with co-design were embedded in this research project, including collaborative engagement with end-users and patient involvement in the iterative design stages of the preceptorship education programme. The researcher had already begun to identify the problem (via the literature), developed the research questions, and identified a possible intervention (new educational programme) before the co-design process had commenced. Therefore, the researcher cannot argue that a co-design methodology in its true essence was a suitable research method for this project.

To summarise, DSR, ADR and Co-Design all encompass elements of design science methods that could have been applied to this study. However, in the next section, the researcher will outline why an EBCD approach best suits this study's research questions and objectives.

4.5 Experience Based Co-Design

Experience based Co-design (EBCD) methodology is typically a process in which people with everyday experiential knowledge combine with people with expert knowledge (specialist/discipline-based) to improve health services or pathways of care (Robert *et al.* (2021). Central to EBCD is that patients are involved in all phases of the process, not just sharing their experiences. They are afforded the opportunity for active and meaningful engagement throughout the project (Gustavsson & Andersson, 2019). EBCD was initially developed and piloted in a Head & Neck Cancer service in an English acute hospital in 2004-5 (Bate & Robert, 2007). The method has been subsequently applied across a broad range of clinical areas internationally, including but not limited to mental health, palliative care services, paediatric diabetes, and emergency medicine (Green *et al.*, 2020).

EBCD draws on four main underpinning approaches: participatory action research, user-centred design, learning theory and narrative-based approaches to change (Robert, 2013). Participatory action research (PAR) is an umbrella term for qualitative research methodology that involves researchers and participants collaborating to understand social issues and take actions to bring about social change (Chevalier & Buckles, 2019). Robert (2013) argues that PAR has roots in social psychology, phenomenology, and influences such as Kurt Lewin and Paulo Freire. PAR encompasses a traditional, positivist science paradigm to recognize and address complex human and social problems. User-centred design is described as an iterative design process in which designers focus on the users and their needs in each phase of the design process (Ghazali *et al.*, 2014). Robert (2013) proposes that user-centred design offers a new lens or frame of mind to conceive approaches to improving

patients' experiences in healthcare. It also facilitates a collaborative co-design and prototyping process through iterative design processes.

The influence of learning theory on the development of EBCD was established by Robert (2013), highlighting the need to train reflective practitioners to gain insight into an experience. Thus, influences such as Argyris & Schon (1978) and Kerr (2010) shape the EBCD process to create a safe environment in which all parties involved can express their experiences, critically reflect, investigate relationships between concepts and experiences in practice and finally examine new ways of thinking or actions (Robert, 2013). Lastly, Robert (2013) states that a narrative approach is central to EBCD. Stories and storytelling are the most powerful and natural ways of accessing human experience (Bate & Robert, 2007). While stories are subjective, they reveal what the participants liked about their experience, what worked well for them, what led to positive interactions or what causes anxiety or adverse reactions. However, these socially subjective stories can determine connections with "assumptions, values, expectations, cognitions and emotions" that are the target outcomes of EBCD (Bate & Robert, 2007, pg. 65).

Touchpoints play a central role in EBCD and identifying the target outcomes. Touchpoints represent critical points with an emotional tone within an individual experience of contact between a service user and any service aspect, including interpersonal interactions (Bate & Robert, 2016; Clatworthy, 2011). Sharing and collaboratively discussing and reflecting on the participant's touchpoints provides an opportunity to see situations from different perspectives and better understand nursing practices (Fylan *et al.*, 2021) or, in the case of this study, nursing preceptorship experiences.

Robert *et al.* (2015) describe EBCD as a six-step process, which they recommend can take up to a year to implement.

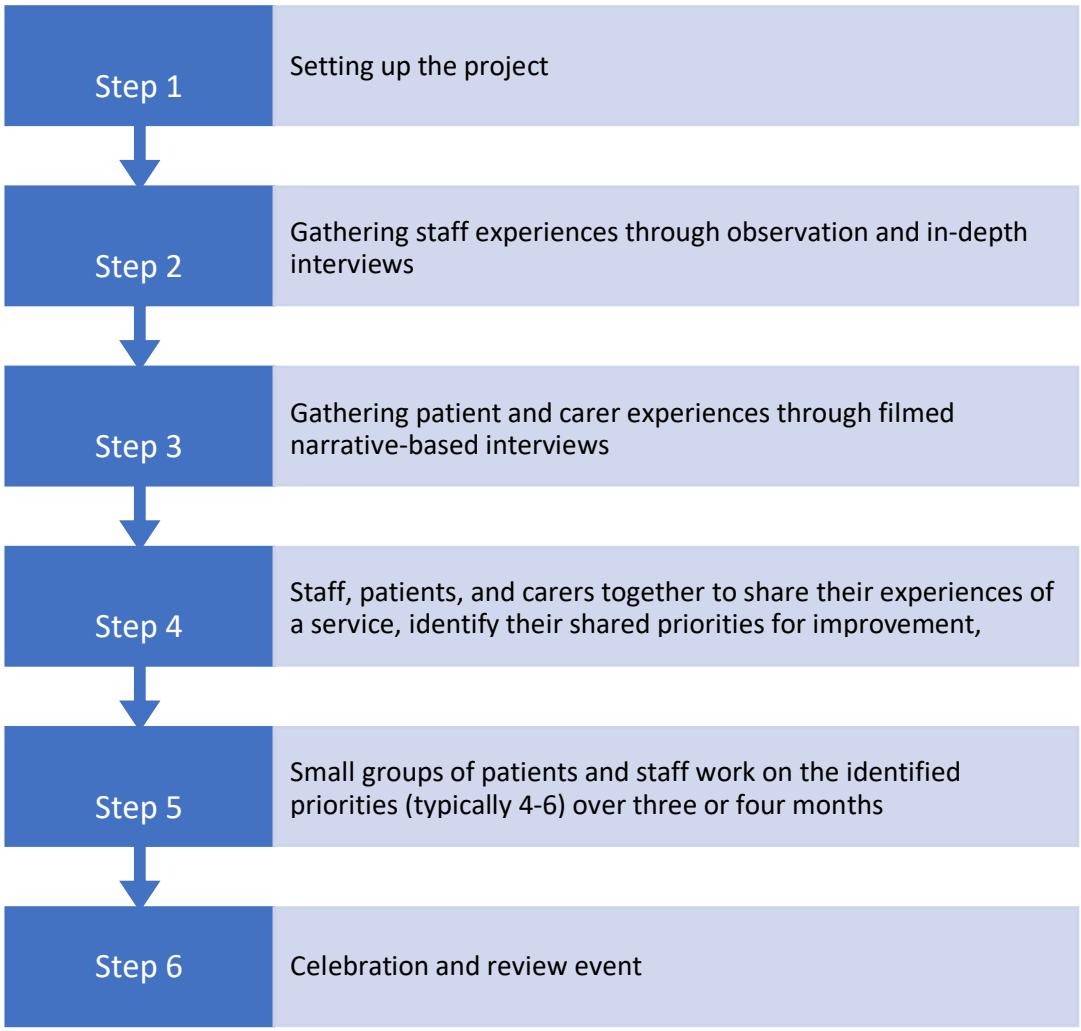


Figure 5. EBCD: Six-step process (Robert *et al.*, 2015)

4.5.1 Philosophical and theoretical underpinnings of EBCD

It is helpful to explore the epistemological and ontological approaches to EBCD as the philosophical and theoretical perspectives demonstrate the rationale for selecting this methodology. Philosophy provides the general principles of theoretical thinking, a method of cognition, perspective and self-awareness, all of which are used to obtain knowledge of reality and to design, conduct, analyse and interpret research and its outcomes (Moon & Blackman, 2014). Understanding philosophy is essential because research can only be interpreted in a meaningful way if there is clarity about the decisions that have been taken that affect the research outcomes. Some of those decisions are not always consciously made.

Ontology is the study of 'being' and is concerned with 'what is, i.e., the nature of existence and structure of reality as such (Crotty, 1998) or what it is possible to know about the world (Ormston *et al.*, 2014). Identifying ontology at the start of the research process is critically important as it determines the choice of the research design. Epistemology is about "how we know what we know" (Crotty, 1998, pg. 8) of the "nature of the relationship between the knower or would-be knower and what can be known" (Lincoln *et al.*, 2011, pg. 103). Epistemological assumptions made or held by the researcher profoundly affect how they uncover knowledge. There is a range of epistemological and ontological positions, i.e., views of the world and knowledge. Vaishnavi & Kuechler (2015) demonstrate the philosophical assumptions of three research perspectives, including a positivist, interpretive and design perspective. While many nursing researchers consider a positivist and interpretive perspective, the design perspective is relatively new to nursing research. Vaishnavi & Kuechler (2015) believe it is also vital to examine the axiology (the study of values) when examining the philosophical assumptions of research perspectives. A shared understanding of what researchers are trying to discover in pursuing their efforts is what ties them into a group. The philosophical assumptions of these three research perspectives are outlined in Table 3.

Table 3. Philosophical Assumption of Research Perspectives

Basic Belief	**Positivist**	**Interpretive**	**Design**
Ontology	A single reality. Knowable, probabilistic	Multiple realities, socially constructed	Multiple, contextually situated alternative world-states. Socio-technologically enabled
Epistemology	Objective; dispassionate. Detached observer of the truth	Subjective, i.e., values and knowledge emerge from the researcher-participant interaction	Knowing through making; objectively constrained construction within a context. Iterative circumscription reveals meaning
Methodology	Observation; quantitative, statistical	Participation; qualitative, hermeneutical, dialectal	Developmental (agile process). Measure artificial impacts on the composite system (system reliability)

Axiology: what is of value	Truth: universal and beautiful: prediction	Understanding: situated and description	Control; creation; problem-solving progress (i.e., improvement) and understanding

Adapted from Vaishnavi & Kuechler (2015).

EBCD is a flexible research approach that does not support the perception of a single reality or paradigm in which objectivity equates to evidence (Glasby and Beresford, 2006). The philosophical assumptions of EBCD are unique; the ontological and epistemological viewpoints shift in EBCD as it moves through the different stages of the project. As discussed in the previous section, the epistemological and ontological roots of EBCD stem from participatory action research. PAR seeks to understand and improve the world by changing it. At the heart of EBCD is collective, self-reflective inquiry that researchers and participants undertake so they can understand and improve upon the practices in which they participate and the situations in which they find themselves. The reflective process is directly linked to action (Chevalier & Buckles, 2019).

The ethos of the EBCD is an applied anthropological one, aiming to capture, understand and improve patient experiences of health care (Robert, 2013). Therefore, the EBCD researcher is a pragmatist; they aim to make sense of people's experiences and find solutions to poorly designed interactions or experiences in the clinical setting. Ontologically, the EBCD researcher emphasises that knowledge of the social world is subjective. Epistemologically, the EBCD researcher believes the reality is multiple and relative; therefore, EBCD researchers avoid rigid structural frameworks such as positivist research and adopt a more personal and flexible research structure. Axiologically, the EBCD researcher, values creative alterations, i.e., service improvements, to improve patient health care experiences.

The philosophical perspective of the EBCD researcher moderates through the different iterative phases. The EBCD creates reality through constructive intervention (i.e., developing the new preceptorship education programme), then reflectively becomes a positive observer, documenting the behaviour of the educational intervention (i.e.,

does it develop interpersonal and communication skills) and then comparing to the theory (i.e., comparing outcomes to experiential and simulation-based learning theory). The observations are interpreted and become the basis for new theorising.

Having outlined the philosophical orientation of EBCD, the next section will outline the reported strengths and weaknesses of applying EBCD.

4.5.2 Strengths and weaknesses of EBCD

The literature identifies EBCD as a valuable framework for developing human-centred interventions that combine experiential knowledge (experiences) and scientific knowledge (literature & expert-based knowledge) (Fylan *et al.*, 2021; Raynor *et al.*, 2020). However, Green *et al.* (2020) notes that there is a lack of consistency in reporting EBCD projects due to the lack of standardised reporting guidelines making it challenging to compare and contrast studies as various adaptions of EBCD are presented in the literature. Although the methodology's experience has been mixed, reports of strengths and weaknesses predominantly relate to the same factors.

Positive impacts of EBCD have been reported across several projects, including participants learning new skills; enabling healthcare professionals to appreciate the impact of healthcare practices and environments on patients and carers; engaging service users in 'deliberative' processes; and enabling the service to implement solutions that met the wishes, advice and insights of patients and frontline staff (Donetto *et al.*, 2015). Similarly, public and patient involvement in EBCD projects have resulted in feelings of empowerment and an equal power dynamic between them and healthcare professionals (Green *et al.*, 2020; Gustavsson & Andersson, 2019).

A frequent criticism of EBCD is that its implementation is typically applied to a single site location to improve patient experiences of local services. Applying EBCD across a multisite setting would provide a broader population view, increase the transferability of knowledge gained throughout the project beyond a local setting, and possibly develop a quality improvement programme (Fylan *et al.*, 2021). Furthermore, Donetto *et al.* (2015) review of the implementation of EBCD for healthcare improvements noted

several weaknesses in the method. These difficulties included researchers having difficulty maintaining the patient cohort from the experience gathering to the entire co-design phase due to the length of the project, as well as staff reporting difficulties in engaging in the project due to work commitments. In addition, Donetto *et al.* (2015) reported that participants often found projects complicated. The cost was another negative factor noted in carrying out an EBCD project with often little funding available (Green *et al.*, 2020). Thus, an accelerated version of EBCD (AEBCD) was developed to provide a more cost and time-effective method (Bienlinska *et al.*, 2022).

Considering an EBCD approach, its strengths and weaknesses show that, while challenging, EBCD is a methodology designed to engage with and improve human experiences and healthcare practises in complex situations through the co-design and co-production of human-centred interventions with patients, healthcare professionals and design experts.

4.6 Study Design

As discussed in the previous section EBCD approach is best suited to achieve the research project aims and contribute original insight to the current body of knowledge. This study will be conducted to address the following objectives:

- To identify key "touchpoints" to determine what students, preceptors and patients liked about their experiences of a nursing preceptorship, what worked well for them in generating positive interpersonal relationships or what caused anxiety or adverse reactions in the professional relationship.
- To co-design and co-produce an innovative preceptorship education programme with students, preceptors, patients and experts in nursing and nursing education, incorporating experiential knowledge (touchpoints) and scientific knowledge (literature and expert-based knowledge) applying a user-centred design EBCD approach.

Therefore, the researcher set out to examine:

- What are students', preceptors' and patients' key "touchpoints" of nursing preceptorships?
- What key educational topics and pedagogical approaches are identified by students, preceptors, and patients in collaboration with nursing and education experts to develop an effective preceptorship education programme for developing interpersonal and communication skills?

The following section will provide an overview of the adapted EBCD method involved in this study.

4.6.1 Adaptation of EBCD to the study

Considering the study objective to develop an innovative preceptorship education programme, the researcher identified EBCD as an integral part of the research process to help identify and create a human-centred curriculum. A particular appeal of EBCD is the ability to adapt it to particular circumstances. To further inform the design and adaption of the EBCD method, the researcher attended a weekly month-long EBCD workshop disseminated through a not-for-profit charity (Point of Care Foundation, 2013). The researcher also availed of the free-to-access online toolkits incorporating several case studies available to inform the study's design (Point of Care Foundation, 2013). Similarly, a critical understanding of EBCD was required to prepare for the practical undertaking of the study. Strengths, weaknesses, challenges, criticisms and subsequent recommendations identified by other EBCD projects were considered iteratively throughout the thesis as they became available.

In this study, the students, preceptors, and patients, in collaboration with nursing, educational and design experts, act as the main drivers for change. The project retained a user-centred design approach throughout, as their lived experience, expertise and knowledge of nursing preceptorship propelled the entire co-design and co-production of the new preceptorship education programme. The process (outlined in greater detail in chapter 7) enabled participants to share and explore their individual experiences of the interpersonal dynamics of a nursing preceptorship retrospectively, equipping them to draw meaning and understanding from their story to find a shared

narrative. The shared narrative was used as a foundation to move the process beyond the original experience and onto the unique element of EBCD to co-design and co-produce a new preceptorship education programme.

The EBCD project subject to this research differs from the traditional EBCD approach described in the earlier part of this chapter. The researcher has adopted a novel approach to applying EBCD to co-design and co-produce a new preceptorship educational programme consisting of 10 steps outlined in Figure 6. For full details on the application of EBCD for this study, please refer to Chapter 7.

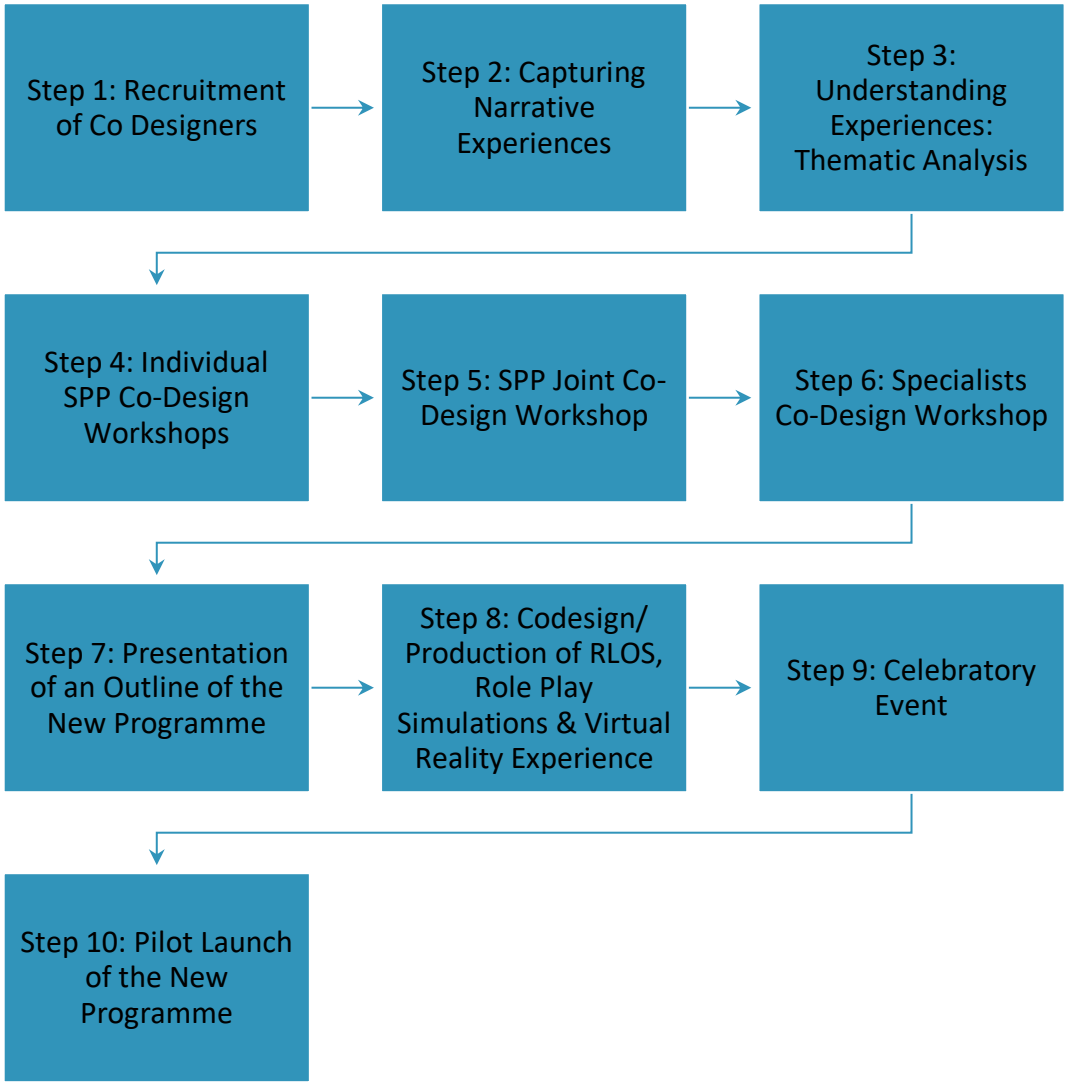


Figure 6. Overview of adapted EBCD method applied to this study

4.7 Ethical Considerations

Employing an EBCD method requires attention to ethical considerations. Ethical research conduct is the application of moral reasoning founded on a set of moral principles. Ethical principles have been identified by many governing bodies, authors, and research boards internationally and include respect for persons/autonomy, beneficence, non-maleficence, justice/fairness, veracity, fidelity and confidentiality (Nursing Midwifery Board of Ireland, 2021).

Acknowledging that EBCD often involves cooperation and coordination of many people in different disciplines and institutions, ethical standards promote values essential to collaborative work, such as trust, accountability, mutual respect, and fairness (Resnik, 2013). The UCD Human Research Ethics Committee (UCD College of Health and Agricultural Sciences) granted a low-risk ethical exemption to carry out the study (Appendix C). The researcher also completed the research integrity training course, guiding responsible research practices, guidelines and relevant resources. Several ethical issues became apparent during this research study's conceptual and methodological design. Measures were, therefore, put in place to ensure ethical and moral fairness to its participants and the researcher.

4.7.1 Informed consent

Before commencing the co-design process, all participants were provided with an information leaflet describing the nature and purpose of the proposed research, how the project will operate and what level of involvement would be expected from them to ensure they could make an informed decision about joining the research project. Participants were also informed how their data would be used. Participants were informed that they had the right to withdraw from the study without consequences. The contact details of the researcher and his supervisors were provided. Written consent was obtained from all participants (digitally). Please see Appendix (D,E,F) i.e., the participant information leaflet for students, preceptors (Appendix D), the participant information leaflet for members of the public/patients (Appendix E) The participant information leaflet for experts (Appendix F).

4.7.2 Confidentiality

Participants were informed verbally (at the beginning of every session) and via the information leaflets that the interviews and co-design workshops were recorded, using an encrypted video software package (Zoom) for transcription purposes and providing accurate data for analysis within the study. The recordings were stored on a password-protected server and destroyed once transcribed. The recorded interviews and co-design workshops will solely be used for the study. These transcripts will be destroyed two years after the completion of the thesis, as they may be required for further publications related to the thesis. The participant information leaflet and consent forms contain all information regarding the study's confidentiality. Any name, identifiers or other specific details gathered during the interviews or co-design workshops were not included in the transcripts or the preceptorship education programme – pseudonyms were adopted in place of the participant's real names.

4.7.3 Duty of Care

The researcher ensured a duty of care to the co-designers of the project. The researcher was mindful of their other obligations (work and personal) and did not put undue pressure or stress on the co-designers throughout the project. The researcher also took great care to ensure a duty of care for the students, preceptors and patients telling their stories and experiences throughout the study. The researcher endeavoured not to deliberately initiate issues that may be upsetting or uncomfortable to discuss unless instigated by the participant. If students, preceptors, and patients did not wish to answer all the questions, they were assured it was okay. They were advised that the interview could stop at any moment they wished. Information on local counselling services (HSE National Counselling Service) and contact details on support services in Ireland (Irish Patients Association/Hospital & University support services) were available if required.

To ensure a duty of care for all participants participating in the co-design workshops, the researcher created an atmosphere of trust and confidentiality. The aim was to create an atmosphere where participants felt free to express their opinions without fear that their opinions would have an impact on the outcomes of their undergraduate

programme (students), their role as a preceptor (staff nurses), and their nursing care (patients). A non-disclosure statement was included as part of the consent form. "I agree to maintain the confidentiality of the information discussed by all participants and researchers during the co-design workshops" to ensure participants respect the privacy of their fellow participants and not repeat what was said in the co-design workshops to others. Participants were also informed prior to the workshops that they could take a break at any stage if required.

Finally, the COVID-19 pandemic has increased potential risks to all participants in this study. Therefore, all one-to-one interviews and co-design workshops were held virtually to ensure the health and safety of all participants.

4.7.4 Obligation to Participate and Bias

Co-designers may have felt obliged to participate in the study because of their professional or academic association with the researcher's workplace. There may also be a risk of acquiescence bias in which the co-designers agree with and be positive about whatever the researcher presents. To avoid this, the researcher ensured the co-designers knew they were not obliged to participate in the study and that open-ended exploratory questions would be used throughout the design and iterative evaluation process to obtain their true point of view. Open and transparent evaluation methods were implemented to reduce the risk of inadvertently introducing bias, including a peer review of findings by the researcher's primary and secondary supervisors.

The researcher remained impartial throughout the study, particularly during the data collection of the students, preceptors and patients' stories. The researcher avoided implying there was a right or wrong answer, reducing the risk of bias in the students, preceptors and patients, creating stories to support the researcher's beliefs on the interpersonal dynamics of a preceptorship relationship.

4.8 Critical Reflection; researcher positionality

Positionality refers to an individual's worldview (Holmes, 2020). An individual's worldview, or 'where the researcher is coming from', involves ontological assumptions

(the nature of social reality), epistemological assumptions (the nature of knowledge) and assumptions about human nature and agency (Sikes, 2004). These components are shaped by individual values and beliefs, including gender, nationality, cultural background, social class, political stance, religious faith, sexuality, and many other factors (Short & Mollborn, 2015). Acknowledging and exploring a researcher's positionality is critical; the researcher must be conscious of his own biases, values, experiences and how they could affect the research. Therefore, the researcher has reflected on his position.

The current research was undertaken within the organisation (UCD), where the researcher works as a clinical nurse tutor. Within this role, the researcher is a personal tutor to student nurses; this role can involve liaising with clinical partners when student nurses encounter difficulties in their practice placements. These difficulties can often be related to interpersonal clashes with their preceptors. The researcher has also observed first-hand positive and negative interpersonal relationships between preceptors and student nurses while working in the clinical setting as a nurse. Moreover, the researcher has previously held the position as a preceptor in the UK and Ireland, in which he experienced positive interpersonal relationships with the student nurses he was assigned to precept.

Furthermore, the researcher has been told first-hand by family and friends of events in which poor interpersonal and communication skills portrayed by either the staff nurse or student nurse have led to confusion and, in some cases, anger while admitted to the hospital. Thus, the researcher's worldview contains a pre-existing understanding of both positive and negative experiences of the interpersonal dynamics of a preceptorship relationship before carrying out the data collection for this study.

4.9 Summary

This chapter describes the methodological approach and methodological considerations involved in undertaking this research effectively. The researcher outlined how applying an EBCD is a suitable approach to co-design and co-produce an innovative educational programme to meet student, preceptor and patient

viewpoints associated with fostering positive interpersonal relationships in a nursing preceptorship in collaboration with nursing education and design experts. The following two chapters provide details of two pilot studies carried out by the researcher that influenced the co-design and co-production of the new preceptorship education programme. In chapter 5, a pilot study that influenced the design of the new preceptorship educational programme, will be discussed. The pilot study examined the application of reusable learning objects (RLO) in preparing students for a face-to-face simulation laboratory. In chapter 6, another pilot study that also influenced the design of the new educational programme will be discussed. The study investigated the subjective experience of using an immersive virtual reality storytelling experience as an active pedagogy in nursing education. Following this, the researcher will provide a detailed account of the EBCD method applied to this study in the following chapter.

Chapter 5: The Application of Reusable Learning Objects (RLOs) in Preparation for a Simulation Laboratory in Medication Management: An Evaluative Study

Abstract

To enhance the preparedness of undergraduate nursing and midwifery students to participate in the safe provision of medication administration on their clinical placements, an innovative blended learning strategy was designed and developed by the authors. The blended learning strategy included a suite of online Reusable Learning Objects (RLOs) specific to medication management theoretical knowledge and psychomotor skills to prepare students for a 90-minute practical face-to-face simulation laboratory session. Students identified that the reusable learning objects had prepared them for the simulation laboratory session and were rated as a productive learning experience. The blended learning strategy implemented for teaching and learning medication management to undergraduate nursing and midwifery students can positively influence students' acquisition of knowledge and psychomotor skills to safely administer medications prior to their practice placements in a clinical setting.

Article information:

Keywords: Blended Learning, Reusable Learning Objects, Medication Management, Simulation

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5.1 Introduction

Medication management is "*patient-centred care that optimizes safe, effective, appropriate drug therapy*" (Canadian Pharmacists Association *et al.*, 2012). Medication management encompasses how medications are procured, prescribed, stored, administered, and reviewed to safely administer medications in practice and ensure that medicines have the desired outcomes in patient care (Roulston & Davies, 2021). Medication management care is provided through multi-disciplinary professional collaboration with patients (World Health Organization, 2019). Over the past ten years, medication management within the clinical practice of Nursing and Midwifery has undergone significant changes nationally and internationally. It now includes the capacity for independent prescribing and the primary responsibility for preparing and administering medicines to patients (Nursing and Midwifery Board of Ireland, 2020).

A rise in reported medication errors has resulted in reformed medication management practices. A medication error can be defined as "any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of the healthcare professional, patient, or consumer" (NCCMERP, 2020). Medication errors can occur at any stage of administering medicines, from prescribing, dispensing, preparing, and administering medicines, to monitoring their effects, and, therefore, are a multi-disciplinary issue (Pentin *et al.*, 2016). Nurses and midwives play a central role in the medication management cycle and are well-positioned to identify and prevent actual and potential medication errors. The Asensi-Vicente *et al.* (2018) systematic review examining medication errors involving undergraduate nursing students identified a high incidence of error observed and most commonly at the administration phase of medication management. Students reported fear, anxiety, and loss of confidence after making an error. Therefore, nursing and midwifery students must receive adequate education, training, practice experience, support, and supervision to achieve the standards associated with medication management (NMBI,2020).

Educators have shifted from traditional didactic lectures (passive learners) to student-centred active learning techniques (experiential learning) to promote greater medication management competency in undergraduate nurses and midwives. The experiential learning theory defines education as a result of the knowledge gained through experience, emphasizing experience's essential role in learning (Kolb & Kolb, 2009). The paradigm shift to student-centred active learning has resulted in teaching practices that align with constructivist learning theory. Piaget's (1970, as cited in Mayes & Freitas (2004)) principles of constructivism state that knowledge is constructed rather than innate or passively absorbed. Therefore, in constructivism, students are encouraged to learn through active engagement by linking new information with existing information, to form new knowledge or understand the concept's meaning (O'Donnell *et al.*, 2015).

The conceptual change in nursing and midwifery education and the increased use of technology have resulted in innovative and transformative pedagogical approaches, including technology-assisted blended learning strategies and simulation-based learning. Blended learning has been defined as "any combination of face-to-face instruction with technology-mediated instruction" (Leidl *et al.*, 2020). Recent scoping reviews (Jowsey *et al.*, 2020; Leidl *et al.*, 2020) describe a comprehensive and diverse range of approaches to blended learning integrating face-to-face interaction with technology-mediated interaction in nursing education. Most noticeably, it reported a positive impact of blended learning approaches on student engagement, satisfaction, skills acquisition, and knowledge retention.

One such application emerging in the literature in facilitating technology-assisted blended learning is Reusable Learning Objects (RLOs). RLOs are described as digital educational resources which are self-contained and reusable (Onofrei & Ferry, 2020). RLOs are modifiable to meet specified learning outcomes, specifically their context, content, and learning activities (Wiley, 2000). RLOs deliver small units of learning that can be accessed at any time, in any location via the internet (Khan *et al.*, 2019). RLOs involve interactive endeavours for autonomous learning, including self-test elements (Windle & Wharrad, 2010). RLOs can accommodate different learning styles by including interactive features to present theoretical content and depict real-life

scenarios (Brown *et al.*, 2019). There is a growing body of knowledge on the use of RLOs being utilized in a variety of contexts in nursing education, including pharmacology (Lymn *et al.*, 2008), wound care (Redmond *et al.*, 2018) and injection skills teaching (Williams *et al.*, 2015). These studies suggest that RLOs can provide nursing students with authentic learning materials that can supplement the teaching of complex skills and promote autonomous learning.

Simulation is a learning technique that aims to replicate real-world events to help attain specific learning goals (Weller *et al.*, 2012). It creates an opportunity to recreate and perform a task as close to real life in a safe learning environment (Rutherford-Hemming & Alfes, 2017). Simulation supports students in developing a greater understanding of managing an event if it occurs in clinical practice, consequently building their confidence (Labrague *et al.*, 2019). To date, several studies have investigated the application of simulation to the field of medication management, including simulating possible medication errors rates among critically ill patients (Ford *et al.*, 2010) and simulating the use of electronic administration records (Chan *et al.*, 2019), simulating interruptions during medication administration (Hayes *et al.*, 2017) and simulated medication rounds (Harris *et al.*, 2014). Results demonstrate a positive impact on student learning, creating authentic learning experiences that permit students to deepen their understanding of the concepts related to medication management through deliberate, safe practice in a controlled, simulated environment.

Considering evolving pedagogical practices, revised standards for Nursing curriculum (NMBI, 2016) and medication administration (NMBI, 2018;2020), faculty at an Irish University set out to create an effective and practical new approach to undergraduate teaching and learning medication management.

5.1.1 Aim of the study

The authors created an innovative blended learning programme to provide Nursing and Midwifery students with the knowledge and skills to carry out safe medication management practices during their clinical experiences. The blended learning programme consists of online RLOs, followed by a face-to-face simulation laboratory. To the authors' knowledge, no study has examined the standalone use of RLOs in

preparation for a practical simulation laboratory in medication management. Therefore, to address this gap, this study sets out to examine the following research questions:

- What is the students' evaluation of a blended learning strategy that utilized RLOs and simulation as an active pedagogy for medication management?
- Does the application of online RLOs prepare students for a face-to-face practical simulation laboratory?

5.2 Methodology

5.2.1 Design and setting

Described here is a descriptive, evaluative cross-sectional pilot study. This study was undertaken in a large University in Ireland, which offered undergraduate degree programmes across Nursing and Midwifery. The newly developed educational package was incorporated into a core shared module in Year 2 of the programmes as part of the curriculum due to new and updated guidance for medication management (NMBI, 2018; 2020) and to improve students' learning experience.

5.2.2 Development of the RLOs

The introduction of the RLOs was intended to promote flexible and autonomous learning online to support face-to-face simulation-based teaching on campus. One key driver for developing a suite of RLOs for this project was creating bespoke online content that complemented the knowledge and skills required to actively participate in the simulation laboratories, hopefully providing a seamless transition from theory to practice. The RLOs were designed and developed by a multi-disciplinary team of instructional designers consisting of faculty members and a clinical expert. The systematic approach established by Windle & Wharrad (2010) in developing the RLOs in five phases was followed.

Phase 1: (Scoping workshop) consisted of establishing the characteristics and potential use of RLOs. The team established the learning units (independent, self-standing learning content) required to meet the desired learning outcomes set by

NMBI (2016;2020) and agreed on each unit's specific learning goals (2-3 per unit). The team established and decided on the following learning units listed in (Table 4). Discussions on the deliverables required to achieve the desired learning objectives occurred. A project timeline of 6 months was established, considering the authors' tasks, dependencies, and requirements for the teaching units for the following trimester of teaching.

Table 4. Utilization of the Reusable Learning Objectives

		Accessed Once		Accessed More than Once	
		N	%	N	%
1.	Professional Practice and Legislation	151	90.4	79	47.3
2.	Medication Record	162	97	101	60.5
3.	Oral Administration	161	96.4	107	64.1
4.	Intramuscular Administration	159	95.2	135	80.8
5.	Subcutaneous administration	160	95.8	133	79.6
6.	Per Rectum Administration	152	91	98	58.7
7.	Medication Calculations	141	84.4	112	67.1

Note: This table demonstrates the utilization of the reusable learning objects by students. Indicating a high percentage of student engagement with the RLOs.

Phase 2: (Iterative development) The RLOs were then storyboarded by team members using PowerPoint. The content was derived from the latest international evidence-based professional practices (HIQA, 2015; NMBI, 2018; 2020; WHO, 2019). Each storyboard was then peer-reviewed by the team for accuracy and appropriateness of the material using the learning object review instrument (LORI) (Vargo *et al.*, 2003). The overall design, usability, motivation, learning goal alignment, and quality of the content to ensure it was suitable for all four programmes were reviewed. Along with the theoretical content, students' opportunities to engage with activities such as multiple-choice questions and drag-and-drop exercises to promote practice, feedback, and reflection were embedded in the RLOs. The team reviewed this element from a technical perspective to ensure its feasibility and suitability.

Phase 3: (Media development stage), creating the required media for the RLOs. Step 1 included scripting, filming, and editing a series of short procedural videos and creating computer-generated infographics and images. The authors used a combination of real equipment and theatrical film props, i.e., retractable effect needle and syringe, to create authentic procedural videos without injecting the actors. Step 2 included scripting and recording the voiceover for the individual RLO slides. Step 3 required the amalgamation of all the components into a Shared Content Reference Model (SCORM) software package: Articulate©. This approach was chosen as SCORM RLO files are compatible with most major Virtual Learning Environments (VLEs) (Reece, 2016).

Phase 4: (Content and quality review): All RLO units were then peer-reviewed by an external expert (BM) with the lead author (PH) during a design workshop to ensure the detail and scaffolding of content were suitable to clarify the concepts of each RLO learning objectives, and the RLO interface and user experience were optimal.

Phase 5: (Release of the RLOs): Finally, the completed SCORM units were uploaded to the VLE Brightspace© and launched for students to access. The individual units were released to the students every week for seven consecutive weeks before the simulation laboratory in the module's eight-week. Each unit typically took the students 10-15 mins to complete except for Unit 7 medication calculations, which took approx.—60 mins to complete. Figures 7-9 demonstrate sample screenshots from the RLOs.



Figure 7. 10 Rights of Medication Management

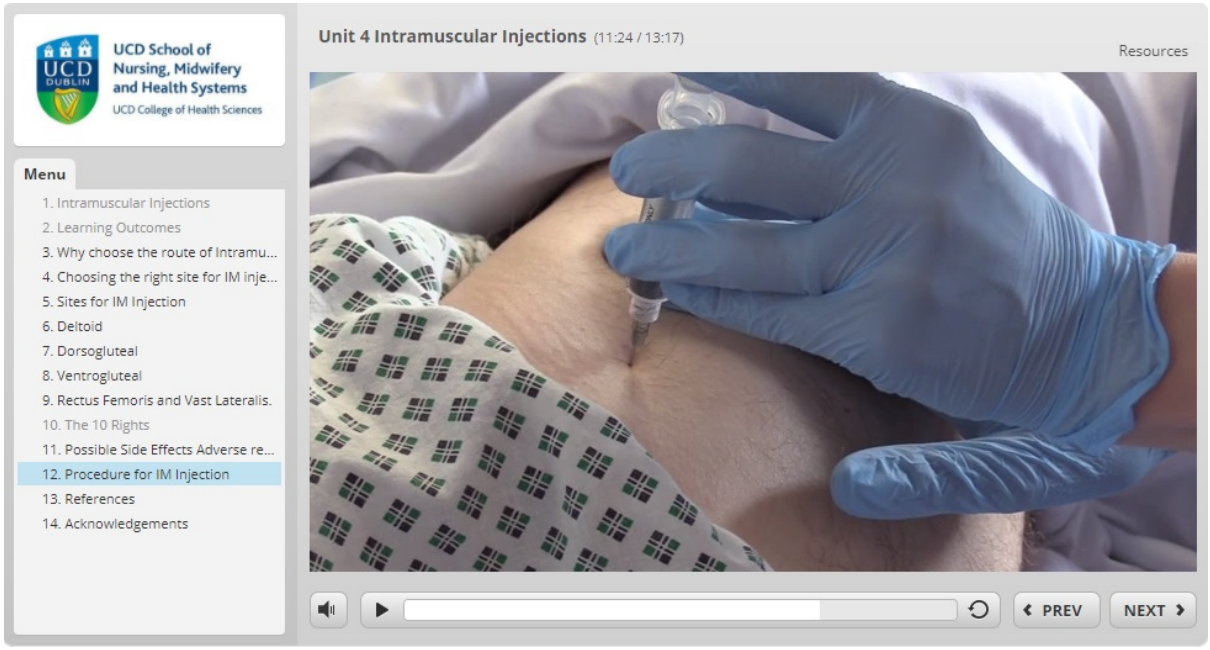


Figure 8. Intramuscular Injection Ventrogluteal site



Figure 9. Intramuscular Injection Deltoid site

5.2.3 Development of the Simulation Laboratory

The simulation scenarios' design was led by an academic with a specialist background in simulation-based education and patient safety (SB) and was peer-reviewed by the remaining authors. Applying the International Nursing Association for Clinical Simulation and Learning (INASCL) (2016) framework, the authors considered design criteria such as creating a simulation experience that can achieve measurable objectives, is participant-centred and incorporates a level of fidelity that creates a perception of realism to the simulated scenario.

An online pre-brief pack that identified the simulation's goals and objectives, the student's expected role and the expected role of the facilitators was designed and uploaded to the VLE before the simulation workshop. Each session lasted 1.5 hours, with a ratio of 12 students to 1 facilitator per room. The simulation commenced with a pre-briefing by the facilitator. Each scenario involved a combination of clinical reasoning combining technical and non-technical skills. Students rotated through each station and alternated between the role of patient and nurse, lasting approximately eight minutes each time. At station one, the student had to determine what oral medications to administer, carry out drug calculations, and correctly dispense a liquid

medicine and a tablet. Station two involved subcutaneous medication administration for pain management, drawing up and administering the medication correctly using a task trainer and safely disposing of sharps. Station three consisted of intramuscular medication for nausea management, drawing up and administering the medication correctly using a task trainer and safely disposing of sharps. Following the simulations, a 20-minute debriefing session took place with the students, led by the facilitator using the SHARP Debrief Tool (Imperial College London, 2013).

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5.2.4 Survey instruments and procedure

For student evaluation, an anonymous questionnaire was created, adapting two validated tools, an Evaluation Toolkit for Reusable Learning Objects and Deployment of E-Learning Resources devised by the Centre for Excellence in Teaching and Learning for Reusable Learning Objects (RLO-CETL) (Wharrad *et al.*, 2008) and Educational Practices Questionnaire (National League for Nursing, 2005). For this study, the authors adapted the questions to examine the purpose-built RLOs and simulation for medication management; for example, "The purpose and learning objectives of the medication management RLOs were clear"? The questionnaire consisted of 37 items, a mixture of both summative rating scale response options and open-ended responses. Testing the adapted tool revealed a Cronbach alpha coefficient > 0.7 for each item. For overall reliability, the internal consistency for the questionnaire was $\alpha = 0.82$. The results indicated the satisfactory construct validity and internal consistency level of this modified questionnaire. Participants respond to each item by rating it on a five-point Likert scale (strongly disagree (1) and strongly agree (5). The mean of their replies, signals students' level of agreement with the questionnaire's statements. The questionnaire was offered to students using a web-based survey service for one week after exposure to the RLOs and completing the simulation laboratory.

5.2.5 Sample

2nd Year students from Bachelor of Science (BSc) General nursing, Children's and General Nursing, Mental Health Nursing and Midwifery degree programmes undertaking a core shared Patient Safety module in 2019 were invited to participate. Participants were encouraged to partake in the study at the end of a lecture. Students were informed that their participation in the study was entirely voluntary. It would not impact their coursework or related grades for the module if they did not wish to participate. Students who did not want to partake would still receive the same educational resources as those taking part. This study comes within the category of "educational evaluation" within our institution; therefore, the approval of an ethical exemption was granted by the University Ethics Committee. Students were then invited to complete an anonymous online questionnaire in which consent to partake in

the study was detailed at the outset. Two hundred and ten students were offered participation in the study, with one hundred and sixty-seven completing the questionnaire, resulting in a 79.5% response rate.

5.2.6 Data Analysis

Qualitative data were collected via open-ended responses within the survey. Quantitative data were analyzed using the Statistical Package for Social Sciences (SPSS version 24). Descriptive data analysis was utilized to examine the percentage distribution of each item based on their responses to the questionnaire's statements (PH, KC). A deductive thematic analysis using Braun and Clarke's (2006) six-phase framework was applied: Step 1: Familiarisation, Step 2: Deductive Coding, Step 3: Generating themes, Step 4: Reviewing themes, Step 5: Defining and naming themes, Step 6: Writing up as a framework was applied. The authors (PH, AM, PD) applied a top-down approach to identify key themes and select key quotations to illustrate the key findings to address the research questions listed above.

5.3 Results

5.3.1 Demographic data

Most of the participants were Irish (90.4%), female (92.2%), and aged 18 to 24 (82.5%). All participants were in stage two of their programme, with 60.2% undertaking a General nursing degree, 20.5% in Children's and General Nursing, 9.6% in Mental Health Nursing and 9.6% in the Midwifery programme.

5.3.2 Evaluation of a Blended Learning Strategy

Overall, the students reported positively implementing the blended learning strategy that incorporated a suite of RLOs and simulation laboratory as an educational tool for medication management. The authors will discuss the results below.

5.3.3 Evaluation of the RLO's

Table 5 presents the students' utilization of the RLOs, indicating a high percentage of student engagement with the RLOs. Of the sixteen attributes examined of the RLO, over 90% of students "strongly agreed or agreed" with all attributes. Accessing the

RLOs anytime ranked the highest quality, with 79% strongly agreeing (n=124) and 21% agreeing (n=33). One student commented," *'I enjoyed being able to work at my own pace, and I also like that I can review all the material at any time, I can take notes by just pausing the video. However, in lectures, if I miss something, I'm often too intimidated to ask for the lecturer to repeat it!'*. 98% (n=155) of students ranked the visual components and quizzes embedded in the RLO as positive contributors to student learning. Students evaluated the RLOs positively regarding meeting the module's learning requirements, with 54.1% strongly agreeing (n=86) and 41.5% agreeing (n-66). A small percentage of 2% (n=3) responded negatively towards the attributes of the RLOs.

Table 5. Attributes of the Reusable Learning Objectives

		Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
		N	%	N	%	N	%	N	%	N	%
1.	Visual Components, e.g., video contributed to student learning	112	71.3	43	27.4			1	0.6	1	0.6
2.	Audio/ commentary components contributed to student learning	91	58.3	60	38.5			4	2.6	1	0.6
3.	The interactivity of the RLO's contributed to the student's learning	97	61.8	52	33.1			8	5.1		
4.	The quizzes contributed to the student learning	113	72	43	27.4			1	0.6		
5.	Having access anytime contributed to the student learning	124	79	33	21						
6.	Having access anywhere contributed to the students learning	110	71	41	26.5			4	2.6		
7.	Working at the student's own pace contributed to their learning	121	78.1	33	21.3			1	0.6		
8.	Purpose and Learning	92	56.4	66	40.5	5	3.1				

	objectives was clear										
9.	Learning objectives of the RLOs was pitched at the right level	78	47.6	81	49.4	4	2.4	1	0.6		
10.	RLO's was easy to navigate	78	47.6	80	48.8	6	3.7				
11.	RLO's introduced new concepts and language clearly	75	45.5	82	49.7	6	3.6	2	1.2		
12.	RLO's allowed the student to meet the requirements of the module	86	54.1	66	41.5	4	2.5	3	1.9		
13.	Using the RLO's helped the student to retain knowledge in the area of medication management	79	50	67	42.4	9	5.7	3	1.9		
14.	Using the RLO's prepared the students for the simulation workshop	84	52.8	58	36.5	12	7.5	5	3.1		
15.	Using the RLO's helped prepare the students for the administration of oral medication in the simulation workshop	76	47.8	67	42.1	16	10.1				
16.	Using the RLO's helped prepare the students for the administration of injections	66	41.5	72	45.3	14	8.8	6	3.8	1	0.6

Note: This table highlights the attributes of the RLOs. Each row contains one attribute and how they are rated in terms of student evaluation. Indicating a high percentage of student satisfaction with the RLOs.

5.3.4 Evaluation of the Simulation Laboratory

Similarly, students rated attributes of the simulation laboratory positively overall. Table 6 exhibits the simulation laboratory's evaluation. 94% (n=143) reported that simulation offered various methods to learn about medication management and administration.

Table 6. Attributes of the Simulation Workshop

		Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
		N	%	N	%	N	%	N	%	N	%
1.	The learning objectives of the simulation workshop were clear and easy to understand	93	61.2	54	35	4	2.6	1	0.7		
2.	The student learnt from the comments made by the facilitator before, during and after the simulation	94	61.8	50	32.9	5	3.3	3	2		
3.	The simulation offered a variety of ways to learn about medication management and administration of medication	87	57.2	56	36.8	6	3.9	3	2		
4.	Students found role play with their peers beneficial	95	62.5	46	30.3	8	5.3	3	2.0		
5.	Simulation made students learning time more productive	99	65.6	46	30.5	4	2.6	2	1.3		
6.	Simulation enhanced student confidence and retention of knowledge to perform skills in the clinical setting	95	62.5	52	34.2	4	2.6	1	0.7		
7.	Students had the opportunity to reflect and discuss their performance during the debriefing session	90	59.2	56	36.8	5	3.3	1	0.7		
8.	Students found that reflecting and discussing the simulation enhanced their learning	84	55.3	58	38.2	9	5.9	1	0.7		
9.	Simulation helped students recognise their clinical strengths and weaknesses	92	60.5	57	37.5	3	2.0				

10.	The simulation activity stimulated the students' interest in learning medication management and administration	97	63.8	53	34.9	2	1.3
11.	The simulation was a valuable learning experience	94	61.8	55	32.6	3	2.0

Note: This table highlights the attributes of the Simulation workshop. Each row contains one attribute and how they are rated in terms of student evaluation. Indicating a high percentage of student satisfaction with the simulation workshop.

96.1% of students further testified that the simulation laboratory provided a productive learning experience, with (n=99) strongly agreeing and (n=46) agreeing with the statement. Other positive attributes included self-reported knowledge retention and building of confidence (96.7% n=147), identification of clinical strengths and weaknesses (98% n=149), and the simulation laboratory was overall a valuable learning experience by 94.4% (n=149). A marginal percentage of 2% (n=3) responded negatively to the simulation laboratory. Students commented positively on learning and practising medication administration skills in the simulation laboratory instead of learning online. '*I certainly would prefer to have more clinical hands-on experience with the equipment. I do not feel I learn as well online*. One student was very direct in their preference for learning in the simulation laboratory versus the online environment, '*more labs less video*'. There were no comments from students saying the online environment could substitute learning in the simulation laboratory. The live experience element was articulated by several students (7.1 % n=12) again concerning receiving feedback on their skills. Having the facilitator present and providing feedback on the spot was valuable for students. One student commented, *'To be told what you're doing wrong as you go along so you know it's specific to you*.

5.3.5 Using RLOs for preparation for simulation laboratory

Overall, most of the students, 89.3% (n=142) reported the RLOs prepared them for the simulation laboratory, with 89.9% (n=143) of students reporting the RLOs helped

prepare them for oral medication administration and 86.8% (n=138) reporting the RLOs helped prepare them for the administration of injections. Students said that learning about medication management through the RLO made it easier to put the theoretical information into practice in the simulation laboratory, *'It was great to apply the knowledge we acquired through the information and videos online'*. However, a minority of 4.4% (n=7) students either disagreed or strongly disagreed that the RLOs prepared them for administering an injection in the simulation laboratory. While the students had an opportunity to watch the skills associated with medication management through the RLOs, some students (8.9% n=15) reported that they would still like the skill to be demonstrated again in real-time in the simulation laboratory before they undertake the skill. Some comments included: '*Completing one run-through of each station by the instructor to help reassure students*' and "*the live demonstrations would assist the students with aspects such as positioning of patients*". One student commented on the difference between watching a video and the live situation of watching someone hold the equipment; *'I feel that a practice clinical skills lab is needed as it is very different to handle equipment, then it is to watch someone else on a video do it'*. *'I felt like we needed to be thought [taught] in a lab setting how actually to use the needles, i.e., taught about what to use when…'*. Some students indicated that video demonstrations could not replace the live experience of seeing the skill demonstrated in front of them. Another student suggested, *"Provide a demonstration after the student's first attempt at injections to ensure the correct practice is carried out, then allow the student to practice"*. Students could test their knowledge of medication administration via the RLOs interactive quizzes before coming to the simulated laboratory; however, they expressed a need for live feedback on their psychomotor skills.

5.4 Discussion

Medication management is integral to patient safety (World Health Organization, 2017). Students must incrementally develop their medication management competency as they progress through their undergraduate programme (Nursing and Midwifery Board of Ireland, 2016). Nevertheless, for many students, a comprehensive understanding of medication management can be challenging due to the complexity

of knowledge and skills required, including medication administration, medication calculations and pharmacology (Lee & Quinn, 2019; Mackie & Bruce, 2016; Thomas & Schuessler, 2016). Often leading to stress and a lack of confidence in the student's ability to perform safe medication practices (Goodwin *et al.*, 2019; Moloney *et al.*, 2020). Therefore, nurse educators are responsible for providing effective educational interventions that promote the development of nursing and midwifery students' knowledge and skills for medication management.

Overall, the students responded positively to integrating the RLOs as part of the module, reporting that the RLOs provided a suitable educational tool to effectively meet the learning outcomes of the individual units created by the authors. Similar results were established by Redmond *et al.* (2018) and Williams *et al.* (2015), in which students perceived learning gains in terms of achieving the prescribed learning outcomes and retention of knowledge following active participation with the RLOs. In this study, attributes of the RLOs, such as the interactivity and self-test elements, rank high in student learning. These findings support research by Redmond *et al.* (2018) and Williams *et al.* (2015), which also found that the assessment/self-test exercises embedded in the RLOs contributed positively to students' development of knowledge and nursing skills. It allows students to assess their understanding and knowledge as they progress through the RLOs (Clinton, 2018). Equally, students highly valued the opportunity to repeatedly access the RLOs either at home or on campus, working in their own time in this study. The flexibility for students to actively engage in their studies at a time and pace that suits them through the application of RLOs has also been observed in several studies to have a positive impact on their learning (Blake, 2010; Lymn *et al.*, 2008; Onoferi & Ferry, 2020). In general, the evidence from this study and the wider literature suggests the implementation of RLOs as a positive student-centred pedagogy in nursing education.

Byrant *et al.* (2020) maintain that simulation as a pedagogy enhances students' opportunity to consolidate and apply theoretical content and develop essential skills such as clinical judgment and decision-making skills, which are essential in performing safe medication management practices. Therefore, implementing simulated scenarios

based on medication management and patient safety is essential to developing safe medication management practices among students. Overall, the implementation of the simulation laboratory as a teaching strategy for medication management was evaluated positively and as a valuable learning experience by the students who participated in this study, a finding similar to others that adopted this approach (Chan *et al.*, 2019; Edwards *et al.*, 2019; Ford *et al.*, 2010; Harris *et al.*, 2014; Hayes *et al.*, 2017; Sarfati *et al.*, 2019). Furthermore, students reported building confidence in their knowledge and skills by identifying clinical strengths and weaknesses during the simulation experiences. Comparable results have been found by Chan *et al.* (2019); Edwards *et al.* (2019); Ford *et al.* (2010); Sarfati *et al.* (2019), who reported that students felt the simulation had a positive impact on their confidence and their perceived ability to carry out safe medication administration. However, further research is required to examine if the students perceived level of confidence transpires into the clinical practice setting. In this study, some students stated that the simulation laboratories were an excellent means of reinforcing their understanding of the material covered in the RLOs.

Finally, this study examines students' perceived preparedness for a simulation laboratory on medication management following engagement with a series of bespoke RLOs. To the best of the authors' knowledge, this study provides a unique insight into the blended learning approach to medication management. Most students reported high levels of satisfaction and readiness to actively participate in the simulation laboratories following engagement with the online RLOs. The findings suggest that RLOs positively impacted their knowledge, with the majority reporting that the RLOs helped prepare the students for the simulated experience of administering medication either orally or by injection. These findings support research by Redmond *et al.* (2018) that implemented a series of RLO's as a blended learning tool in conjunction with a traditional clinical skills workshop on wound care. Students reported an increased ability to grasp subject material covered in the clinical skills labs following engagement with the RLOs.

Interestingly, analysis of the qualitative data gathered suggested that a minority of students did not feel prepared for the simulation laboratory after completing the RLOs. Despite exposure to online learning, a minority of students felt nothing could replace the simulation laboratory's live engagement in terms of demonstration and feedback. Therefore, while the medication management RLOs were positively received and students reported a perceived preparedness for the simulation laboratory, the authors would recommend implementing RLOs as a supplement and not a substitute for face-to-face teaching. The authors recommend a blended learning strategy, including online teaching in conjunction with simulation-based education, for medication management education and training. This supports similar findings by Williams *et al.* (2015) that advocate integrating RLOs into the curriculum as an additional educational tool to support face-to-face teaching. This teaching strategy promotes active student-centred learning that permits students to work in their own time in conjunction with a face-to-face experiential learning experience.

5.4.1 Limitations

This was a moderate-scale descriptive cross-sectional pilot study centred on a convenience sample from one university that relied on students' self-reporting. Objective knowledge and skills improvement measures were not gathered, and no control group was implemented to compare receiving traditional didactic lectures to RLOs on preparedness for simulation laboratories. Given that students were recruited from year 2 of the programme, it is possible that students from years 3 or 4 could evaluate the educational package differently following increased exposure to medication management during their clinical experiences. Further research is required before the generalization of results. The authors also acknowledge that the design approach's lack of end-user (student representatives) in the design process for both the RLOs and simulation is a limitation. Student involvement in the design process could have provided greater insight into students' existing knowledge and feedback on the interface and user experience. Notwithstanding these limitations, this pilot study offers valuable insights into students' perspectives on engaging with the unique

blended learning strategy. Furthermore, it informs the planning and design of a larger-scale study.

5.5 Conclusion

Medication management is an integral part of nursing and midwifery practice and involves the safe and effective use of medicines in clinical practice. Hence, it is essential to consider the educational preparation of nursing and midwifery students in medication management. This study's findings support using a blended learning strategy incorporating a suite of RLOs and a practice simulation laboratory for medication management teaching and learning. With universities worldwide redesigning the curriculum's delivery due to the COVID-19 pandemic, blended learning is becoming a new normal. The authors of this project have continued to implement the blended learning approach of online RLOs, followed by face-to-face simulation or clinical skills workshops throughout the global pandemic, with positive results. The authors believe blended learning will continue to play a significant part in nursing education.

Chapter 6: Nursing & Midwifery Students' Experience of Immersive Virtual Reality Storytelling: An Evaluative Study

Abstract

Background: Immersive Virtual Reality (iVR) storytelling is a concept that merges ground-breaking virtual reality technology with the traditional art of storytelling. Virtual reality storytelling offers a rare opportunity to present abstract experiences that challenge boundaries, heighten emotions, and convey previously intangible concepts. Scientific research into immersive virtual reality storytelling is still in its infancy, particularly in the field of education in Nursing and Midwifery. Therefore, this study investigates the subjective experience of using an immersive virtual reality storytelling experience as an active pedagogy.

Methods: This was an evaluative study incorporating a multimodal approach encompassing a cross-sectional survey and observational study conducted in a large University in Ireland, offering major undergraduate and graduate degree programmes in the fields of Nursing and Midwifery. Students were invited to view the innovative virtual reality storytelling experience "Wonderful You" (BHD Immersive), which tells the story of the first nine months of a baby's life inside a woman's womb. On completion, students were asked to complete an anonymous survey about their experience. Observational studies were also conducted, examining the student's engagement and interaction with the iVR experience. A combination of statistical and thematic qualitative analysis was employed to interpret the respective summative rating scale and open-ended response questions in the evaluation survey. Data captured from the observations were grouped into categories and analysed, capturing key themes.

Results: 71.2% (n=94) response rate identified iVR storytelling as a memorable learning experience that triggered students' engagement and motivation to learn. Qualitative analysis of narrative responses revealed positive evaluations of the iVR storytelling experience. IVR storytelling enabled students to visualise and better understand abstract concepts. Observational studies further revealed that students were highly engaged and interacted positively with the iVR storytelling experience.

Conclusions: The full potential of this new medium of iVR storytelling has yet to be seen. However, this study provides an encouraging insight into the positive attributes of iVR storytelling that engages students and creates authentic active learning experiences.

Hardie, P., Darley, A., Carroll, L., Redmond, C., Campbell, A. and Jarvis, S., 2020. Nursing & Midwifery students' experience of immersive virtual reality storytelling: an evaluative study. *BMC nursing*, *19*(1), pp.1-12.

6.1 Background

Virtual reality (VR) is a technology that continues to grow in popularity. Advances in VR technology have led to the potential use of VR in Nursing and Midwifery education to create innovative and memorable learning opportunities. The term "Virtual Reality" was popularised in 1988 by Jaron Lanier, an American philosopher, and computer scientist, through his company VPL Research (Rheingold, 1992; Ewalt, 2018). VR is defined as "*a three-dimensional simulated environment based on technology that enables the user to interact with real-world simulations or alternative realities*" (Jerald, 2015). Lioce *et al.* (2020) further define VR as "*a computer-generated three-dimensional environment that gives an immersion effect"*. VR permits users to view content through a head-mounted display (HMD). A stereoscopic lens which permits a three-dimensional effect is used in the HMD to immerse the user into the experience.

The application of VR as a pedagogical approach adheres to constructivist learning theory and speaks to the paradigm of experiential learning. In line with constructivist learning theory, students take an active role in their learning through VR, absorbing new information in the VR experience and connecting it to previous knowledge to construct new knowledge (Huang *et al.,* 2010). Experiential learning theory suggests that immersive technology can enhance learning performance by providing learners meaningful experiences (Huang & Liaw, 2018). The theory framework conveys learning as a continuous process that moves in four stages, and Huang *et al.* (2016) advocate implementing the four stages to support active learning through VR. Stage 1 consists of the concrete experience: involving participation in a VR experience. Stage 2 involves observation and reflection, e.g., debriefing and identifying areas of strengths and weakness throughout the VR experience and identifying any discrepancies between the experience and understanding of a concept in the VR experience. Stage 3 concerns forming abstract concepts, e.g., what was learned from the VR experience and feedback from a facilitator. Stage 4 involves testing new situations, e.g., planning or practically applying the learning to future situations (Huang *et al.,* 2016).

As early as 2002, Stapleton *et al.* identified imagination as one of the key features of VR. Burdea & Coiffet (2003) further determined two additional core features of VR, creating the i3 triangle “Immersion, interaction and imagination”. Immersion refers to the physical level of submersion in the VR experience. It is determined by the degree a user associates themselves with a simulated virtual world (Parsons, 2015)), with Nilsson *et al.* (2016) arguing that the level of immersion is a result of the affordance of VR technology, e.g., High-End VR facilitates a greater level of immersion. The feeling of "being immersed" is subjective and generally associated with a person's emotional capacity. It is the feeling of being involved with an experience (Slater, 2018). The second feature of VR is its level of interaction, defined as the degree of accuracy and responsiveness a user's actions represent in the VR world when using VR input hardware such as motion sensor gloves (Parsons, 2015). Finally, VR is grounded in the user's imagination and refers to the mind's capacity to perceive non-existent things in the VR world, whether it be objects or a completely alternative universe, despite knowing they are physically situated in another environment (Rebelo *et al.*, 2012). Huang *et al.* (2010) believe that with the increased immersion, interaction, and imagination that VR provides, students' motivation for learning increases. VR immerses students in a place or situation that prompts the exploration of new concepts, enhancing problem-solving capabilities through active discovery.

More specifically, Immersive Virtual Reality (iVR) Storytelling is a concept that combines the emerging world of VR technology and the art form of classical storytelling. iVR storytelling involves a user-focused engagement with the unfolding narrative either as a witness or participant (Dooley, 2017). This new format of storytelling differs from traditional narrative media, such as film and tv, in which the viewer, for the most part, is a passive participant. Storytelling in VR is less about telling the viewer a story and more about letting the viewer discover the story (Bucher, 2017). Prof. Uri Hasson`s exploration of the science of storytelling has revealed that stories activate multiple senses in the brain; motor, auditory, olfactory, somatosensory, and visual (Suzuki *et al.,* 2018). The triggering of these senses can help the listener/viewer of the story to understand the essence of complex concepts and ideas in a personal and meaningful way (Storr, 2019). Stories can create memorable experiences that evoke emotions, making them easier to recall due to the power of their sensory

associations (Aldama, 2015). In essence, personal and emotionally compelling stories engage the brain and are therefore better remembered than merely stating facts. IVR storytelling provides a unique opportunity to present abstract experiences that push boundaries, stir emotion, and express previously intangible concepts (Bucher, 2017).

Storytelling engages the students, contextualises theory to practice, can role model good practice and can help students envisage a life as a nurse (Sabio & Petges, 2019). Traditional storytelling is widespread in nurse education, with lecturers discussing stories from their clinical practice or other experiences to promote student learning and transfer practical knowledge gained through experience to the novice student (Attenborough & Abbott, 2020). Moreau *et al.*'s. (2018) systematic review on digital storytelling in healthcare education describes students' self-reported positive learning experiences and changes in behaviour resulting from a digital storytelling experience by healthcare professionals. The digital storytelling tool was observed as effective in developing skills and motivation in students' learning (Moreau *et al.,* 2018).

The use of conventional multimedia-based learning, such as digital storytelling via a desktop and web-based applications, is now further extended by iVR, as it can facilitate a deeply engaging learning environment. While some research has been carried out on examining traditional/digital storytelling, no empirical studies have reported the application of iVR storytelling in Nursing and Midwifery education in the literature to date.

Current applications of iVR in nursing education include anatomy education (Maresky *et al.,* 2019; Alfalah *et al.,* 2019; Erolin *et al.,* 2019), development of technical and procedural skills, including urinary catheterisation (Butt *et al.,* 2018), care of the older adult (Washington & Shaw, 2019; Dyer *et al.,* 2019) and interprofessional and communication skills development (Buchman & Henderson, 2019). Scientific research into the field of iVR storytelling is still in its infancy, particularly regarding the area of Nursing and Midwifery education. Therefore, the current study set out to explore Nursing and Midwifery students' perceived experience of using an iVR storytelling experience as an active pedagogy.

The aims of the study were to explore:

- Students' perception of an immersive VR storytelling as an active pedagogy
- Students' perception of levels of immersion, interaction, imagination, and motivation during an experience of immersive VR storytelling
- Students' engagement and interaction with immersive VR storytelling

6.2 Methods

6.2.1 Design and setting

This was an evaluative study incorporating a mixed-method design consisting of a cross-sectional survey and an observational study. This study was conducted in a large University in Ireland, offering major undergraduate and graduate degree programmes across Nursing and Midwifery.

6.2.2 Sample and Procedure

Students from Bachelor of Science (BSc) and Postgraduate (Higher Diploma) in Children's and General Nursing and Midwifery programmes were invited to participate. All students had previously received traditional lectures on embryology, however the development of the five senses encountered in the iVR experience was a new concept to all students. Following a lecture, students were informed about the proposed study and invited to participate. Participants were informed their participation was entirely voluntary, and that the iVR storytelling experience was an optional supplementary educational experience to their designated curriculum. Participants were also informed that their coursework or related grades would not be impacted in any way if they chose not to participate. An information leaflet was provided to potential participants describing the study and scheduled times the iVR experience would be available in the simulation laboratories on the university campus if they chose to participate. Interested students voluntarily booked a set date and time that suited them. Written consent to participate in the study was received on arrival to the simulation laboratory. Following the completion of the iVR storytelling experience, students were then asked

by the researchers to complete an online anonymous questionnaire. Student confidentiality and privacy was maintained throughout the study through the following steps; no identifiable information was recorded within the online questionnaire; no record of student names was recorded in the observational studies and the consent forms were only held by the lead researcher and locked in a secure filing cabinet. A total of 132 students were invited to take part in the study. 94 students completed the iVR experience and completed the questionnaire, resulting in a 71.2% response rate. An ethical exemption was granted by the University ethics committee on the grounds of the study being an educational evaluation.

6.2.3 Investigation Tool and Methods

This study utilised the award-winning open access iVR experience "Wonderful You" (https://www.wonderfulyouvr.com/), developed by BDH Immersive in collaboration with Dr David Barker, a developmental biologist in the United Kingdom. It tells the story of the first nine months of a baby's life inside the mother's womb; from a tiny cluster of cells to a fully formed baby, focusing on the formation and development of the five senses (sight, sound, touch, taste and smell). To evaluate students' attitudes towards iVR storytelling the well validated Huang *et al.* (2010) questionnaire was adapted with permission. Huang *et al.* (2010) tool was developed to investigate learners' attitudes toward virtual reality learning environments (VRLE) and is based on a constructivist theoretical approach, that examines student's interaction, immersion, imagination, motivation, and problem–solving capability with VRLE. For this study, the research team added a set of questions on immersive VR storytelling. The adapted questionnaire contained both summative rating scale response options that utilised a 5-point Likert scale (strongly disagree (1) and strongly agree (5) and open-ended responses such as "*What did you like most about using immersive virtual reality storytelling (via a headset) in the classroom*?". Testing of the adapted tool revealed a Cronbach α coefficient > 0.7 for each item. Internal consistency for the questionnaire was $\alpha = 0.95$. An internal consistency reliability test of the original questionnaire carried out by Huang *et al.* (2010) also reported the alpha reliability was highly accepted ($\alpha = 0.94$). Further details of the instrument will be covered in the analysis section. The

questionnaire was offered to students using a web-based survey service after exposure to the iVR storytelling experience.

Participant observation was also conducted throughout the iVR storytelling experience by a member of the research team in each simulation laboratory where the event took place. Typically, 12-15 participants were accommodated per room. The researcher was situated at the top of the room to enable a clear viewpoint to observe all participants. Each researcher was provided with a semi-structured observation guide based on observational principles outlined by Menter *et al.* (2011) for examining educational practices. They were directed to observe and note the student's engagement with VR and their interaction with the iVR storytelling experience e.g., did the students have any difficulties setting up the VR headset, or how did the students interact with the iVR experience for example their actions and body language. The semi-structured observation guide facilitates the recording of behavioural patterns and interactions but also permits flexibility to record comments and unexpected outcomes. Data gathered through participant observation was used as a benchmark against participants' subjective reporting in the questionnaire of their perceptions and interactions with VR.

A short demonstration on the setup of their phone and VR headset was provided at the start of each session. Participants were asked to download a free third-party VR app via Google Store or iTunes Store; Within (https://www.with.in/). Once downloaded the iVR experience “Wonderful You” could be accessed free of charge from the library of available iVR experiences. Each participant was provided by the University a Head Mounted Display (HMD) (VR One Plus Mobile Virtual Reality headset; est. cost per headset €49). The HMD delivers high optics through precision eyeglasses lenses which supports a wide range of interpupillary distance 53-77mm without the need for manual adjustment by users, therefore making the HMD suitable for participants who may wear glasses also. Participants removed the universal tray from the HMD headset and placed their personal smartphones in the tray (which supports smartphone displays sizes ranging from 4.7 up to 5.5 inch). It is important to note the smartphone must have an accelerometer, gyroscope, and compass for the iVR application to work. Once fitted in the tray, students inserted the tray into the front of the HMD. At this

point most students (n=62) utilised their personal audio headphones via the audio port in their smartphone or via Bluetooth. The remaining students did not bring their personal audio headphones and were therefore advised by the facilitator to adjust the volume on their smartphone so that it was both audible to them and limited distraction to other students. Instructions were provided to switch the phone to Aeroplane/Flight Mode to avoid distractions during the experience such as text messages or app notifications. Participants were guided by researchers on adjusting the head strap of the HMD for comfort purposes. Participants were reminded that the VR experience is a 360-degree experience, and to be mindful of their surroundings when positioning themselves to view the iVR experience. Students sat dispersed throughout the simulation lab, approx. 8 to 10 metres apart with some sitting on chairs, others sitting on the beds in the room. Researchers were instructed to assist the students with any technical difficulties setting up but not to interrupt the students once the iVR experience had begun.

6.2.4 Data Analysis

Quantitative data analysis was performed using the Statistical Package for Social Sciences (SPSS version 24). Descriptive data analysis was utilised to examine the frequency distribution of each item based on student responses to the statements of the questionnaire. The mean (SD) rating score of each item was also calculated. Qualitative data were collected via open-ended responses within the survey and observational studies during the VR experience. Thematic analysis was applied using Braun & Clarke's (2006) six-phase framework: Step 1: Familiarization, Step 2: Coding, Step 3: Generating themes, Step 4: Reviewing themes, Step 5: Defining and naming themes, Step 6: Writing up. Unlike many qualitative methodologies, thematic analysis is a method that is not affiliated to a specific epistemological or theoretical perspective, therefore making it a flexible method suitable for investigating teaching and learning approaches that are incredibly diverse in nature Maguire & Delahunt (Maguire *et al.*, 2019). The researchers applied a top-down approach by identify key themes and selecting quotations to the illustrate the key findings to address the research questions. Data from the observational studies were transferred to Excel, were

grouped into categories and analysed capturing key themes. Two researchers coded separately to enhance the validity of both processes (P.H./L.C Quantitative, P.H./A.D. Qualitative/Observations). As data was anonymous, data emerging from the observation sessions were not linked to individual participants, rather the observation data was used to triangulate and contextualise the quantitative and qualitative findings. The raw datasets used and/or analysed are available from the corresponding author upon reasonable request.

6.3 Results

6.3.1 Demographic results

The demographic profile of the participants is presented in Table 7 below. Most participants were Irish (93.46%), female (98.9%) and aged between 18 to 24 (66%). 55.3% (n=53) participants were undertaking a Midwifery programme and 44.7% (n=43) were undertaking a Children's Nursing programme.

Table 7. Demographic profile

Characteristics	n=94	
	n	(%)
Age (years)		
18-24	62	(66)
25-34	27	(28.7)
35-44	4	(4.3)
≥45	1	(1.1)
Gender		
Female	93	(98.9)
Male	1	(1.1)
Nationality		
Irish	88	(93.6)
European	5	(5.3)
Non-European	1	(1.1)
Programme		
Midwifery	52	(55.3)
Children's Nursing	42	(44.7)

6.3.2 Questionnaire results

The overall mean score of the questionnaire was 4.26 (SD 0.52; range 1-5), indicating that participants reported positively to engaging with and learning from an iVR storytelling experience. Figure 10 below summarises the mean score for each of the subscale themes. All items on the instrument were rated between strongly disagree (1) and strongly agree (5). The greatest perceived gain from implementing iVR storytelling was students' motivation, which received an overall mean score of 4.44.

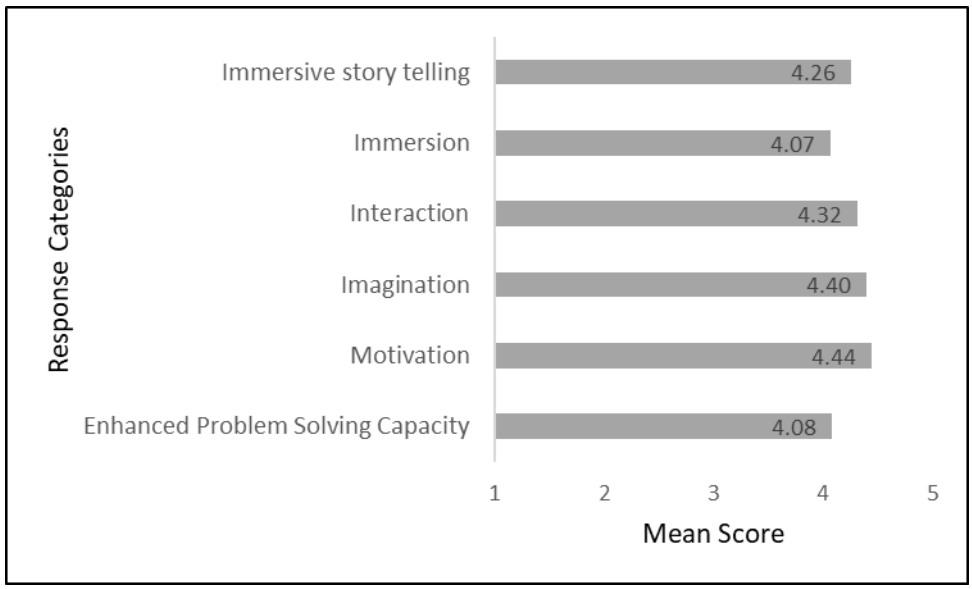


Figure 10. Perceived gains of iVR Storytelling

Score 1=Strongly Disagree; 2=Disagree; 3 Neither Agree nor Disagree; 4=Agree; 5=Strongly Agree

To further explore which item in each subscale contributed to participants learning, each item response was examined. Table 8 below outlines the percentage of scores in each of the 6 categories for all 28 items grouped under their respective subscales. The final column provides the mean (SD) rating score of each item illustrating those with the most and least impact. Percentage of scores in each of the 5 response categories (strongly agree to strongly disagree) for all items grouped under their respective subsections by all participants (n=94).

Table 8. IVR Storytelling Questionnaire Results

	Strongly Agree		Agree		Neither Agree or Disagree		Disagree		Strongly Disagree		Rating	
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)		Mean (SD)
Immersive Storytelling												
Immersive storytelling using virtual reality helped my learning of the development of the five senses	42	(44.7)	47	(50.0)	2	(2.1)	2	(2.1)	1	(1.1)	4.35	(0.73)
I paid more attention when using the virtual reality experience compared to the learning environment	48	(51.1)	34	(36.2)	9	(9.6)	1	(1.1)	2	(2.1)	4.33	(0.86)
The narrative storytelling kept my attention throughout the virtual reality experience	54	(57.4)	35	(37.2)	2	(2.1)	3	(3.2)	0	(0.0)	4.49	(0.70)
The storytelling experience motivated oral discussion afterwards	21	(22.3)	47	(50.2)	19	(20.2)	6	(6.4)	1	(1.1)	3.86	(0.88)
The virtual reality experience (Wonderful You) creates a realistic-looking learning environment	32	(34.0)	54	(57.4)	3	(3.2)	4	(4.3)	1	(1.1)	4.19	(0.78)
Being immersed in a story helped improve my comprehension, sequencing, and story recall	42	(44.7)	47	(50.0)	3	(3.2)	1	(1.1)	1	(1.1)	4.36	(0.70)
Immersion												
I felt immersed in the Virtual Reality experience	44	(46.8)	45	(47.9)	1	(1.1)	2	(2.1)	2	(2.1)	4.35	(0.80)
I felt comfortable/safe using the headset during the experience	55	(58.5)	30	(31.9)	4	(4.3)	4	(4.3)	1	(1.1)	4.43	(0.85)
I was aware of the lab room while experiencing the immersive story (i.e. sounds, other people)	18	(19.1)	41	(43.6)	10	(10.6)	18	(19.1)	7	(7.4)	3.48	(1.22)
I was able to ignore any thoughts that were separate from the virtual reality experience	25	(26.6)	47	(50.0)	11	(11.7)	11	(11.7)	0	(0.0)	3.91	(0.92)
I was completely captivated by the experience	39	(41.5)	39	(41.5)	12	(12.8)	3	(3.2)	1	(1.1)	4.19	(0.88)
Interaction												

I would like to share my virtual reality learning experience with other learners	43	(45.7)	43	(45.7)	7	(7.4)	1	(1.1)	0	(0.0)	4.36	(0.67)
The virtual reality experience was engaging and helped me understand the learning content	47	(50.0)	43	(45.7)	1	(1.1)	3	(3.2)	0	(0.0)	4.43	(0.68)
The virtual reality experience can enhance learner-learner interaction	46	(48.9)	40	(43.6)	7	(7.4)	1	(1.1)	0	(0.0)	4.39	(0.68)
The virtual reality experience can enhance teacher-learner interaction	33	(35.1)	40	(42.6)	17	(18.1)	4	(4.3)	0	(0.0)	4.09	(0.84)
Imagination												
The virtual reality experience stimulated my imagination	49	(52.1)	35	(37.2)	5	(5.3)	5	(5.3)	0	(0.0)	4.36	(0.82)
The VR experience improved my understanding through the imagination of being inside the womb	50	(53.2)	38	(40.4)	3	(3.2)	2	(2.1)	1	(1.1)	4.43	(0.76)
The VR experience helped me better understand by imagination the formation & development of 5 senses	46	(48.9)	43	(45.7)	4	(4.3)	1	(1.1)	0	(0.0)	4.43	(0.63)
Motivation												
I was impressed by using the Virtual Reality experience for learning purposes	58	(61.7)	34	(36.2)	1	(1.1)	1	(1.1)	0	(0.0)	4.59	(0.58)
The use of virtual reality was more interesting than the traditional video	66	(70.2)	23	(24.5)	3	(3.2)	2	(2.1)	0	(0.0)	4.63	(0.66)
The use of virtual reality was more interesting than traditional lectures	57	(60.6)	29	(30.9)	5	(5.3)	3	(3.2)	0	(0.0)	4.49	(0.74)
The VR experience was an appropriate format to learn about the formation & development of 5 senses	54	(57.4)	33	(35.1)	6	(6.4)	1	(1.1)	0	(0.0)	4.49	(0.67)
This virtual reality experience enhanced my motivation for future learning	44	(46.8)	31	(33.0)	18	(19.1)	1	(1.1)	0	(0.0)	4.26	(0.80)
This virtual reality experience has enhanced my motivation to learn	41	(43.6)	32	(34.0)	19	(20.2)	2	(2.1)	0	(0.0)	4.19	(0.83)
Enhanced Problem-Solving Capacity												
The virtual reality experience can enhance my learning capability	34	(36.2)	50	(53.2)	8	(8.5)	2	(2.1)	0	(0.0)	4.23	(0.69)
The virtual reality experience can enhance my capability of knowledge management	30	(31.9)	49	(52.1)	12	(12.8)	3	(3.2)	0	(0.0)	4.13	(0.75)
The virtual reality experience can enhance my capability of knowledge construction	30	(31.9)	49	(52.1)	13	(13.8)	2	(2.1)	0	(0.0)	4.14	(0.73)

The virtual reality experience can enhance my problem-solving capability	24	(25.1)	33	(35.1)	33	(35.1)	4	(4.3)	0	(0.0)	3.82	(0.87)

6.3.3 Students perception of iVR storytelling

The opening questions on the evaluation questionnaire examined students' perception of iVR storytelling as an active pedagogy. Overall, students reported a positive experience. The overall mean score was 4.26 (SD 0.61; range 1-5). 94.7% of respondents (n=89) strongly agree or agree that the iVR storytelling experience helped their understanding of the five senses in the womb. 94.6% (n=89) reported that the narrative element of the storytelling experience held their attention throughout the experience. A slightly smaller proportion of 72.5% (n=68) agreed that the iVR storytelling experience motivated oral discussions afterwards. Moreover, 94.7% (n=89) reported being immersed in a story helped improve their comprehension, sequencing, and story recall of the development of the five senses. These results indicate a meaningful educational experience and a high percentage of student satisfaction with this pedagogy.

6.3.4 Student's perception of levels of immersion, interaction, imagination, motivation, and enhanced problem-solving capacity during an experience with iVR storytelling

The remaining questions on the evaluation questionnaire examined students' perception of levels of immersion, interaction, imagination, motivation, and enhanced problem-solving capacity during their experience with iVR storytelling. Students reported high levels of immersion, with an overall mean score of 4.07 (SD 0.61). 83% (n=78) of participants noted being captivated by the experience. Students' evaluation of the interaction of the iVR experience was also received positively with an overall mean score of 4.32 (SD 0.61). However, it must be noted a small percentage of students (22.4%, n=21) responded neutrally or negatively that the iVR experience enhanced teacher-learner interaction, this will be examined in the discussion section of the paper. Students generally reported iVR experience engaged their imagination with an overall mean score of 4.40 (SD 0.63). 93.6%(n=88) reported the imagination of being inside the womb improved their understanding and enabled their learning. Students rated high levels of motivation towards the iVR storytelling experience receiving an overall mean score of 4.40 (SD 0.63) with 97.9% (n=92) reporting they

were impressed with using iVR storytelling experience for learning purposes. 94.7% (n=89) agreed that the iVR experience was more interesting than traditional videos. Students reported that the iVR experience enhanced their capability of knowledge management and construction of knowledge (84%, n=79). However, a significant number of students (39.4%, n=37) responded neutrally or negatively that the iVR experience enhanced their problem-solving capability. Overall participants self-reported perceptions of immersion, interaction, imagination, motivation, and enhanced problem-solving capacity with iVR storytelling was rated positively.

6.3.5 Qualitative data analysis

The online questionnaire contained open-ended questions which allowed students to express their views and experience of using iVR: what they liked the most and what they least liked about using iVR storytelling.

Several topics were identified as significant themes including memorable learning experience, negative elements to iVR and the application of iVR in other areas of the Nursing and Midwifery curriculum. Some minor themes included previous use of VR and interest in purchasing a VR headset.

6.3.5.1 Memorable learning experience

The positive evaluations of the iVR storytelling experience were also evident in the narrative responses. Students acknowledged that the iVR experience immersed them into a story they have never or could ever experience in real life. Participants reported enjoying that the iVR scenario felt as if they themselves were in the womb, as one participant referred to the experience as *"real in an unreal setting".* Others commented on how they felt immersed in the environment of the womb which they believed would help them remember in the future, compared to traditional teaching methods, and reinforced what they had previously been taught: *"I liked how it brought you into the environment and allowed you to be immersed in the development of the stages. The use of colour and animation really made it memorable.", "It was captivating and made more sense to me because I saw it in real life rather than a diagram.", "It held my attention more than a lecture", "It was so realistic and added to my knowledge. Felt like I learnt a lot that I will remember"*

Moreover, participants commented on how virtual reality felt "*fun*" and "*more interactive than normal"* compared to standard teaching methods. The immersion into the VR storytelling experience meant that participants had both an emotional and sensory experience, as well as a richer understanding of prenatal development: *"I felt submerged in the storytelling. It was amazing! Give me the chills!"*, *"Being able to focus completely and get a real-life sense of science."*, *"I found it easier to understand the development of structures than the lectures"*, *"Experiencing 'real-life' as accurately as possible"*. Participants commented how using iVR storytelling as a teaching method removes distractions from their surrounding environment that can sometimes be present in a traditional classroom: *"That it takes you into a new environment and blocks out any distractions".* Ultimately, this enabled participants to concentrate on the experience and increase their focus, as one participant appreciated "*being able to zone out from the room and focus on the video*".

6.3.5.2 Negative elements to iVR

Conversely, participants described some negative aspects of the iVR experience. Several participants' negative experiences were related to the headset, which they said was uncomfortable and claustrophobic to wear for the experience: *"The headset felt sweaty and heavy and gave me a sore neck", "slightly heavy, would be uncomfortable for long periods of time", "headset didn't fit properly so had to readjust".* Some participants reported feeling motion sickness and "*dizzy*" from using the headset and that their neck was sore from the turning involved in the experience. As previously mentioned, participants praised the experience for its lack of distractions, however, others mentioned they had a lot of noise distractions. Participants who used headphones for the experience were fully immersed, however students without headphones did get distracted by others: *"I could hear other peoples' videos playing"*, *"not having earphones did not allow for thorough immersion as could hear other headsets."*

Some students referred to technical difficulties relating to the required software and their smartphones. A common difficulty was with their hosting phone, rather than the VR equipment: *"Didn't download, had to stream it" "phone wouldn't download the app, Used staff members phone" "it would not play on aeroplane mode"*. Some mentioned

that the headset was "*out of focus*" and the video had a "*blurry*" quality to it which was difficult to view. This was likely due to the adjustment setting on the headset before commencing the experience. Some participants were unable to download the app due to space capacity on their phones: *"low disk space on phone", "no space".* Issues arose regarding students who were unable or had not downloaded the app before the session: "*Wouldn't show up in play store*", "*due to the internet, it took a while to download".*

6.3.5.3 Application of VR in Nursing and Midwifery Education

Participants reported an overall positive attitude to including iVR in other aspects of their education and training. There were two key factors for participants who suggested the use of virtual reality in other modules. Firstly, it increased their concentration and ability to engage with the learning material; "*I was very attentive, more than lectures", "I had a high level of concentration when using, "It was interesting and held my attention".* One participant noted that due to the lack of distractions while using the headset it "*makes you focus on one thing*". Secondly, students felt it enabled them to visualise abstract concepts of anatomy and physiology that is central to their curriculum: "*You get a far better understanding of what the anatomy of the body looks like", "Help to get a clearer picture of the topic", "visualizing makes it easier to grasp the concept".* Regarding the modules students would like to see virtual reality utilised in, there was a resounding appreciation of how it would be helpful in anatomy and physiology learning, where some participants specifying that it would help them understand cardiovascular, respiratory, gastrointestinal, central nervous and embryological concepts and the stages of labour. This potential usefulness of iVR is highlighted by its ability to allow students to interact, dissect and explore abstract anatomical objects enabling students to better understand spatial interpretation and depth perception of organs than traditional pedagogical approaches.

Minor themes emerging from the data included previous use of VR and purchasing a VR headset. Some participants referred to how they had previously used virtual reality through the medium of video games, at their own home or friends' houses using gaming consoles. Some participants reported using during outdoor events such as roller coasters or tourist exhibitions. However, 65.95% (n=62) participants reported

they had never used VR before. Participants described that they would be interested in buying VR headset as they viewed it as an innovative and engaging way to learn: "*New and different way of learning*", "*visual images and videos really help me learn*", "*it makes learning abstract things easier if you can visualize it*". However, other participants mentioned that they would not be interested in buying one as it did not align with their learning style: *"learn better by writing",* "*Didn't suit my way of learning*". One participant reported that they would have equivalent experience by watching educational videos on YouTube: "*could just watch an informative YouTube video*". Several participants described that they would be interested in buying a virtual reality headset, but it would be cost-dependent, as they were perceived to be expensive equipment: *"depends how much the device would cost".* Some participants mentioned they would want to ensure its good quality and would prefer to purchase when more options become available.

6.3.6 Observational data

Overall researchers observed students positively engaged with the iVR storytelling experience. Researchers noted an air of excitement amongst students, with most students turning up with the app downloaded and earphones ready to go. Students initially had many questions and appeared very enthusiastic e.g., "*will I really be inside a womb*?".

Researchers noted minor difficulties with the VR headsets. All participants were able to experience the iVR story; however, a few issues with set up and technical problems arose. Despite initial instruction, several students (n=28) required a second demonstration on how to insert the phone into the VR headset one-to-one. Other minor issues included difficulty setting and adjusting the head strap on the VR headset. One researcher provided their phone to a participant as their smartphone did not have enough storage space to download the app.

Positive student interactions with the iVR storytelling experience were also witnessed. Researchers noted the external gaze point (i.e., what direction they were looking in: straight on or rotating in the chair/bed to see behind and around them) of the participants when engaging with the VR experience. Most students were observed

moving their head and body looking up, down, left, right and behind them as though they were navigating through the iVR experience.

However, some students (n=9) appeared less engaged and sat motionlessly. The researchers noted how students who wore headphones for the experience appeared more immersed and engaged in more head and body movement in following the iVR experience. Those not wearing headphones appeared distracted looking over in the direction of other students who also had no headphones as though they were distracted by their iVR sound. One participant was observed to be suffering from motion sickness, appeared pale but continued and adapted to the experience, after which they expressed, they really liked the experience and only felt slightly nauseous.

Members of the observational team noted differences in the degree of emotional and facial arousal according to the content being viewed. However, the research team was unable to determine what point of the VR experience the participant was viewing when this occurred. Some students were vocal in their reactions throughout the VR experience with comments such as "*oh my god, this is cool*", *this is weird*" and "*this is awesome*".

6.4 Discussion

This study aimed to provide a unique insight into Nursing and Midwifery students' perception of the application of an iVR storytelling experience as an active pedagogy. By implementing "Wonderful You" (BHD Immersive), the authors set out to examine the students' perceptions of iVR storytelling and its impact on their learning. This study found immersive VR storytelling to be a positive and effective learning experience. iVR storytelling created an authentic learning experience comparable to the application of conventional storytelling (Attenborough & Abbott, 2020) and digital storytelling (Moreau *et al.*, 2018) in Nursing and Midwifery education. Students reported that the storytelling narrative maintained their attention throughout and expressed that they had increased levels of engagement with the presented material compared to traditional learning environments. This may be related to the characteristics of iVR storytelling media used in which students are no longer passive viewers of a story but immersed in it as active participants. As such, VR users must actively discover the

story, as the narrative and visuals elements evolve 360 degrees around them. These findings are consistent with Urstad *et al.* (2018) who maintain that storytelling can capture a person's attention and therefore generate strong emotional engagement. Similarly, Pieterse *et al.* (2018) found that students felt more actively engaged with a 360 VR video experience than while watching a standard video. These results imply that iVR storytelling fosters high levels of attention and interest from students which are vital for active learning.

This study also aimed to examine student's perception of levels of immersion, interaction, imagination, motivation, and enhanced problem-solving capacity with iVR storytelling. Overall high levels were reported by students in each category, particularly motivation, imagination and interaction which stimulated students desire to learn the educational content featured in the iVR storytelling experience. Students reported high levels of immersion; the head-mounted displays (HMD) blocked out visual distractions from the physical environment of the simulation laboratory, placing greater emphasis on the visual components of the story. Students who wore headphones further reported an even higher level of immersion as it blocked out any noise from surrounding students. These findings support previous research that found audio and visual features of IVR can elicit cognitive and affective responses from users that create a sense of immersion (Suh & Prophet, 2018).

Similarly, high levels of interaction were reported by students stating that they would like to share their learning experience with others and that it could enhance learner-to-learner interaction. This may be as a result of the novel experience iVR storytelling provided students; however educational experiences that increase communication and collaboration amongst students have been shown to facilitate quality learning experience with significant positive outcomes for students (Al-Huneidi & Schreurs, 2013). A minority of students responded neutrally or negatively that the VR experience enhanced teacher-learner interaction. It should be noted that no debriefing session was held following this iVR storytelling experience. Debriefing has been identified as a critical factor to a successful experiential learning experience to promote student reflection and assimilate the learning experience, generating a deeper understanding.

The omission of a debriefing session may have led to a decreased satisfaction for some with the level of teacher-learner interaction in this study (Huang *et al.,* 2016; Fanning & Gaba, 2007).

Rather than asking students to imagine themselves in a specific situation, VR perceptually immerses them in an experience, consequently triggering their imagination (Van Gelder *et al.,* 2019). This study confirmed these findings with students acknowledging the iVR storytelling experience elicited their imaginations in believing they were inside a womb. Students further reported the imagination of being inside a womb improved their understanding as they were able to visualise the anatomy and enabled their learning of the formation of the five senses.

Evidence shows that Nursing and Midwifery students self-motivation plays a significant part in the learning process and if educators can connect learners with ideas and concepts that motivate them to discover more, positive learning outcomes are very likely to be achieved (Bengtsson & Ohlsson, 2010). The greatest perceived gain from implementing iVR storytelling in the current study was an increase in students' motivation to learn. Arguably students self-selected into the learning experience in the first instance so a subset of the self-motivated students in the class took part in the experience. Nonetheless, students indicated they were impressed with using iVR storytelling experience for learning purposes and felt iVR storytelling was an appropriate medium of learning the five senses and reported highly to the iVR experience motivating their future learning. As previously mentioned, students also found iVR storytelling provided greater motivation than traditional pedagogical approaches. Students could see the merits of iVR storytelling and would like to see it being used as a pedagogical tool in future learning particularly in areas of abstract concepts of anatomy and physiology that are central to their curriculum.

Students also reported high levels of enhanced problem-solving capacity following exposure to the iVR storytelling experience. For students to learn and gain a deep understanding of a concept, the content must be rendered meaningful to the learner (Feldman, 1989). When achieved, learning is transformed, and the student can make a connection with the material. This leads to the personal construction of knowledge,

which in turn generates ownership of the new knowledge (Tsimane & Downing, 2020). This speaks to constructivist theory for education in which learners construct knowledge through the process of making sense of the experience (Rolloff, 2010). iVR helps students to conceptualise abstract knowledge and promotes spontaneous and creative elaboration on the topic, therefore improving student's ability to examine new concepts and reasoning (Maresky *et al.,* 2019; Moro *et al.,* 2017). This study supports these findings, as students expressed iVR storytelling experience improved their comprehension, sequencing and recall of abstract concepts such as anatomy which has been reported as being sometimes difficult to grasp when traditional pedagogical approaches are applied (Alfalah *et al.,* 2019). Previous research has highlighted students often struggle with comprehending complex concepts in biosciences due to a traditional pedagogical approach and the lack of hands-on student-centred concrete activities (Alfalah *et al.,* 2019; Johnston *et al.,* 2015; Erolin *et al.,* 2019). VR offers a suitable medium and educational approach to potentially address this issue.

The third aim in this research study set out to examine the student's engagement and interaction with the iVR storytelling experience. Observations are a critical component of developmental evaluation for new pedagogical approaches. Observations reinforced students' self-reported positive learning experience. A clear sense of active engagement and participation with the iVR storytelling experience was observed, with most students expressing enthusiasm for the authentic learning experience. Herault *et al.* (2018) also concluded that nursing students and faculty agreed immersive VR added value and increased engagement with their education from which the authors concluded that it was a great pedagogical approach to supplement traditional teaching practices. Active student interaction was observed throughout this study with clear signs of positive emotional and facial arousal noted by the research team. However, a small number of students appeared less engaged and remained motionless when viewing the iVR experience. It is possible that these students were unfamiliar with the concept of iVR and its ability to present images 360 degrees and were more accustomed to viewing a traditional film which requires you to look straight ahead. Furthermore, a small proportion of students expressed a negative evaluation of the iVR storytelling experience with students reporting physical discomfort from the VR headset and episodes of motion sickness. Suh & Prophet (2018) presented similar

findings citing immersive technology did not always create a positive learning experience and in the same way as this study caused motion sickness to a small proportion of users. Further research is required to determine what features of the iVR storytelling experience influenced the participants viewing behaviour and degree of emotional arousal, as well as specific triggers for motion sickness.

Several recommendations concerning the implementation of iVR storytelling as an active pedagogy can be made from the finding of this pilot study. Results from the observations exemplify the importance of determining the student's role in the iVR experience and communicating this to them before the iVR experience commences, so that students will be aware of what is expected of them. The adaptation of The International Nursing Association for Clinical Simulation and Learning (INACSL) (2016) standards of best practice for simulation could provide a framework to structure the iVR storytelling experience and assist in the organisation of the experience. A co-ordinated pre-briefing session in which the student role and objectives are communicated, as well as a debriefing session in which the students reflect and summarise their learning experience is recommended. Minor set-up issues were easily managed by the research team as students became accustomed to using the VR headsets. However, the authors recommend familiarising both faculty and students with the VR headset before an educational experience. Given the fact that many students may not be accustomed to using HMD technology, it is crucial to provide a single-focused and engaging viewing experience to avoid cognitive overload in students. The application of a VR headsets with built-in headphones or capacity for Bluetooth is recommended to immerse the student into the VR experience further and avoid distraction for other students when using VR in a small group teaching setting. The research team advocates for easier access to different directional gaze points by use of a swivel chair with reclining capability, as opposed to the stationary or non-rotational chairs and beds utilised in the current study. Finally, in order for the application of iVR storytelling to be integrated into Nursing and Midwifery programmes it is important to engage course coordinators in trialling a VR application to achieve interest in and engagement with the value in its application in the various curricula.

6.4.1 Limitations

The authors note that the findings of this study are limited to a moderate scale evaluation study based on a convenience sample from a single site that relied on students self-reporting. Therefore, these results are not generalisable to the wider Nursing and Midwifery student population. This study lacked the implementation of a best practice simulation framework such as INACSL (2016), therefore the effectiveness of the iVR storytelling experience could have been further enhanced by integrating best practices such as a guided debriefing session. Notwithstanding these limitations, this work offers valuable insights into students' perspective of the application of immersive VR storytelling as a pedagogical approach to Nursing and Midwifery education. The application of iVR storytelling for Nursing and Midwifery education will only progress as researchers continue to experiment and share what they observed to be effective and ineffective before the full potential of this innovative medium as an active pedagogy can be understood or realised.

6.5 Conclusions

This exploratory pilot study addresses the gap in the literature examining the application of immersive VR storytelling as an active pedagogy in Nursing and Midwifery education. This study identified attributes of iVR storytelling such as immersion, interaction and imagination promote student's motivation and problem-solving capacities, which in turn creates a meaningful and memorable learning experience for students. iVR storytelling can provide a valuable opportunity to imagine a conceptually complex idea, increasing the possibility of a deeper understanding of concepts that might not be easily understood. The full potential of this new medium of iVR storytelling has yet to be seen. Continued technological advancements and investigation into iVR storytelling within Nursing and Midwifery education may provide new insights and future possible applications.

Chapter 7: Experience Based Co Design: Nursing Preceptorship Educational Programme

Abstract

Background: Patients play a central role in nursing preceptorship relationships, a professional educational relationship between a staff nurse and student nurse that is grounded in providing patient care. Yet the patient experiences and perspectives are largely uncaptured in the literature or represented in current preceptorship education programmes. Furthermore, the lack of student, staff nurse & patient involvement in the design of preceptorship education programmes has been noted.

Objective: To use a co-design process to develop an innovative educational programme for developing interpersonal and communication skills among nurses who act as preceptors. We sought to a) clarify experiences and events from all three members involved in a preceptorship relationship (student nurse, preceptor, and patient (SPP) in order to develop a shared understanding of nursing preceptorship relationships and b) identify the key informational and educational needs recommended by SPP for the educational programme.

Methods: Using the principles and the iterative process of Experience Based Co Design (EBCD), data was collected from qualitative interviews and used to inform a series of co-design workshops and the co-production of the new educational programme.

Results: Twenty-six individuals, including undergraduate student nurses, staff nurses, patients, and a team of nursing, educational and educational technologist experts, contributed to developing a blended learning preceptorship educational programme that consists of three core elements 1) Six online reusable learning objects, 2) Two role play simulations and 3) a virtual reality storytelling simulated experience.

Conclusions: The EBCD process ensured that the educational programme was developed to meet SPP viewpoints associated with fostering positive interpersonal

relationships in a nursing preceptorship. EBCD is a valuable framework for developing human-centred educational resources that combine experiential knowledge (experiences) and scientific knowledge (literature-based knowledge). It facilitated the identification and the development of Interpersonal and Communications skills (IP & C skills) training required within a nursing preceptorship relationship, creating an authentic and memorable learning programme. The structure of EBCD harnesses SPP involvement throughout the research and development process, ensuring transparency and continuity of message, scope, and outcomes.

Plain English Summary:

Nursing preceptorship is a professional educational relationship between a staff nurse and student nurse based on providing patient care. The preceptor is a role model for the student, demonstrating professional roles and practice responsibilities. Furthermore, the preceptor accesses the student's clinical competence , providing valuable feedback, support and guidance. Therefore ,an effective preceptor must develop interpersonal, teaching and competency assessment skills. This paper describes a co-design project that involved engaging nursing students, nurses, former patients, and educational & nursing specialists in creating a new nursing preceptorship education programme. The goal was to develop an educational programme that combined scientific evidence with real-life experiences of nursing students, nurses, and patients focusing on developing nurses' interpersonal and communication skills required to be an effective preceptor .

Collaborative co-design workshops were held virtually over several months. Activities included one to one interviews, group discussions and feedback on various drafts of the developing educational programme. Participants provided their stories, opinions, and ideas to create an outline of the new programme. The co-design team then collaborated with educational technologists and a virtual reality production company to complete the state-of-the-art innovative educational programme.

The programme is now ready to be piloted. It is hoped this new innovative programme that blends both scientific knowledge with real-life experiences will help nurses

develop the interpersonal and communication skills required when interacting with students and patients.

Hardie P., Murray A., Jarvis S., Redmond C. (2022) Experience based co design: nursing preceptorship educational programme. BMC Research Involvement and Engagement, 8(53).

7.1 Introduction

Nursing preceptorship plays a central role in nursing education. *Preceptorship* is defined as a professional educational relationship situated within the clinical hospital environment, between a staff nurse (the preceptor) and a graduate or student nurse, involving the delivery of patient care (Ward & McComb, 2018). Therefore, this professional relationship comprises a triadic relationship between the student nurse, preceptor, and the patient (SPP) (Hardie *et al.*, 2021). The preceptor acts as a role model, supervises, provides guidance and learning experiences, facilitates the socialisation and development of the student in the nursing profession and provides patient care (Bartlett *et al.*, 2020; Irwin *et al.*, 2018). Furthermore, student assessment and providing continuous ongoing feedback are incorporated within the preceptor role (NMBI, 2019). When students feel their presence is valued and part of the team, and 'preceptors' express empathy towards students, positive interpersonal relationships develop(Kelly & McAllister, 2013; Ralph *et al.*, 2009). The quality of the preceptorship relationship can significantly influence the student's integration into the nursing profession and the clinical environment and can affect the student's professional development and delivery of patient care (Washington, 2013; Ward & McComb, 2018).

However, interpersonal attributes demonstrated by preceptors can negatively influence the relationship also, including a hostile cultural environment created by preceptors that imposes a hierarchical status on students (Gardiner & Sheen, 2016; McCloughen & Foster, 2018). Additionally, preceptors that are dismissive and exclude students from daily activities on the ward result in sometimes hostile or resentful attitudes from students (Hugo & Botma, 2019; Hanson *et al.*, 2018). Furthermore, ineffective feedback methods, i.e., inappropriate locations (In front of the patient) or unconstructive feedback (Garinder & Sheen, 2016; Omer & Moola, 2019), can leave students feeling humiliated and will negatively impacted their relationship with their preceptor. Indeed, within the researcher's institution, each year, several students report difficulties regarding their lived experiences of preceptorship that occur in the clinical setting. These findings suggest that creating positive interpersonal attributes amongst preceptors is an issue that requires a stronger emphasis in preceptorship education programmes. Despite this a recent scoping review emphasised a lack of

focus on interpersonal and communication skills training in current nursing preceptorship programmes internationally (Hardie *et al.*, 2022).

Similarly, positive student-patient relationships are fundamental to the quality of clinical education, delivery of patient care and nursing preceptorships. Patients have valuable perspectives that enrich students' clinical education (Suikkala et al, 2021). However, a recent scoping review (Hardie *et al.*, 2022) highlighted the absence of patients' perspectives on being involved in the preceptorship relationship and the lack of Public and Patient Involvement (PPI) in designing and creating such educational programmes (Hardie *et al.*, 2022). PPI focuses on the active and meaningful engagement of patients and public members in research processes and activities across a projects cycle (Kaisier *et al.*, 2021). In the UK, the National Institute for Health Research (Russell *et al.*, 2019) defines PPI as researching with patients and the public, so they are not just participants in the research. The triadic relations involved in preceptorship include the patient; therefore, this project included patients in the codesign team.

7.2 Methods

This project aims to design a new practical "how to precept" based programme that will allow preceptors to actively engage and reflect on their developing interpersonal and communication skills associated with nursing preceptorship. Studies show that continuous reflection on practice facilitates the development of professional-pedagogical competence and positive interpersonal relations (Carlson, 2015). In addition, the developed educational programme will incorporate crucial skills such as teaching and feedback practices. It will also include the patient's voice and experiences for the first time to provide trainee preceptors with the knowledge and skills to effectively carry out their roles as preceptors and improve interpersonal relations. This study aims to co-design and co-produce an educational intervention for nursing preceptorship programmes that support interpersonal and communication skills development using EBCD processes.

Experience Based Co-design (EBCD) is a form of participatory action research that involves healthcare professionals and patients/members of the public working collaboratively to develop practical service improvements and patient care improvements in healthcare (Fylan *et al.*, 2021). It is a multistage process that involves exploring and sharing subjective experiences (narrative-based approach) to enhance the skills and knowledge of healthcare professionals and organisations (Green *et al.*, 2020). In this research project, the team adapted an EBCD process to provide a systematic way to identify and prioritise real-world problems experienced by SPP in a nursing preceptorship to inform the co design and co-production of a new preceptorship educational programme.

Touchpoints play a central role in EBCD. Touchpoints represent critical points with an emotional tone within an individual experience of contact between a service user and any aspect of the service, including interpersonal interactions (Bate & Robert, 2018). Sharing and collaboratively discussing and reflecting on the participant's touchpoints provides an opportunity to see situations from different perspectives and better understand nursing practices (Fylan *et al.*, 2021) or, in the case of this study, nursing preceptorship experiences.

Therefore, this study aims to identify key "touchpoints" to determine what SPP liked about their experiences of a nursing preceptorship, what worked well for them in generating positive interpersonal relationships or what caused anxiety or adverse reactions in the professional relationship. It also aims to co-design and co-produce an innovative preceptorship education programme with students, preceptors, patients and experts in nursing and nursing education, incorporating experiential knowledge (touchpoints) and scientific knowledge (literature and expert-based knowledge) applying a user-centred design EBCD approach.

The EBCD process facilitated the involvement of all three members of the preceptorship relationship (SPP) in conjunction with Clinical Placement Coordinators (CPCs) (end-users; facilitators of the new educational programme), design experts, nursing experts, educational experts, and researchers at every stage of the design process from problem diagnosis to the design and development of this educational

programme and its future implementation. The experiential knowledge SPP brings is essential to helping educators acknowledge multiple realities and meanings of nursing preceptorship relationships. It may also identify aspects of the professional relationship that are poorly understood. The co-design workshops employed a design thinking approach, *a "human-centric"* approach that involves the collaborative generation of ideas, defining and refining issues identified by the SPP. Resulting in iterated and generated solutions through brainstorming and prototype building (Abookire *et al.*, 2020).

Throughout the EBCD process, the researchers ensured authentic involvement from all members of the codesign team by implementing Knowles *et al.*'s framework (Knowles *et al.*, 2021) for authentic co-production. This involved providing a "space to talk", a "space to change", and a "space to talk" again, creating space for shared dialogue and decision making while offering a supportive and friendly environment throughout the project.

Twenty-six co-designers were recruited. Table 9 outlines the recruitment inclusion criteria ,sample and description of the participant experience. The University Human Research Ethics Committee granted this study's ethics approval.

Table 9. Co-Design Team Demographics

Co-Design Team	**Recruitment Process**	**Inclusion Criteria**	**Sample**	**Short Description of Experience**
Student Nurses	Students undertaking a Bachelor of Science (BSc) General nursing degree were invited to participate via email through a gatekeeper (a senior administrator from the university programme office).	Undergraduate student nurses in stage 3 or stage 4 of their programme to ensure they had adequate experience of nursing preceptorships.	N=5	Experienced preceptorship across several general hospital sites in the East of Ireland as part of their undergraduate nursing programme. (n=2) (Year 3), (n=3)(Year 4)
Qualified Nurses that act as Preceptors	Qualified nurses who held the position of preceptors, were invited to participate via email through a gatekeeper (a senior administrator from	Preceptors with 5yrs experience or more, precepting undergraduate student nurses.	N=5	Experience ranging from 5-15yrs both nationally (n=3) and Internationally (Australia, America/(n=2) as preceptors. Currently working across four different general hospitals throughout Ireland.

	the university programme office).			
Members of the Public	Members of the public were recruited through several methods, including social media advertising posts, community advisement boards and word of mouth through the wider community.	Members of the public, who were in a general hospital setting in the last two years and were involved in a nursing preceptorship, i.e., teaching session.	N=5	Experienced being a patient in 5 different general hospital sites across Ireland.
Experts	Recruitment of representation was sought via direct email from the lead researcher from experts to collaborate with the SPP groups as the project evolved.	Experts were approached to join the co-design team as the project evolved and were chosen based on their extensive knowledge and ability, research, and experience in the required fields.	N=11	Expert knowledge and experience in the fields of nursing education (Lecturer undergraduate and graduate nursing), nursing preceptorship (CPC, Preceptors, Personal Tutor), technology-enhanced education (Educational technologist), pedagogical design (Lecturer/Specialist in the field), universal design (PhD student/Nurse Tutor), storytelling (Expert in the field), simulation, and virtual reality (Expert Clinical Tutor).

The project ran for 16 months, commencing in January 2021. Due to Covid-19 government restrictions, the researchers hosted co-design workshops virtually. Table 10 below summarises the steps and outputs using an adapted EBCD approach this project took to co-create and co-produce a new educational programme.

Table 10. Outline of steps and outputs using EBCD to create a new educational programme

Step	Description of Step	Outputs
Recruitment of Co Designers	As outlined in Table 1.	Recruitment of (n=26) diverse sample incorporating SPP, nursing, educational and technology-enhanced educational experts from across Ireland.
Semi-structured in-depth interviews	Individual 1-1.5 hr interviews with each participant and independently of the group they belonged to (i.e., SP or P) (n=15) Employing a narrative interview methodology, the researcher aimed to capture the experiences and identify major SPP touchpoints to later inform the co-design and co-production of the new educational programme. See Appendix G for a Semi-Structured Interview Guide.	Detailed qualitative data capturing SPP touchpoints and suggested themes and pedagogy approaches for the new educational programme.
Thematic Analysis	Dualistic inductive (bottom-up approach analysing SPP touchpoints) and deductive analysis (top-down approach thematic analysis technique using Braun and Clarke's six-phase framework was applied to identify key touchpoints, concepts and pedagogical approaches the SPP wished to include in the new educational programme) from the qualitative data gathered.	SPP touchpoints, both positive and negative that influence nursing preceptorship relationships. Key topics the SPP wished to include in the new educational programme.
Individual SPP Co-Design Workshops	Student, Preceptor group held a collaborative workshop separately to discuss findings from thematic analysis to reach a consensus on touchpoints and concepts , and teaching methods for inclusion in the programme. The patient group did not wish to have a group workshop; therefore, the lead researcher adapted and encouraged participation by emailing or posting the thematic analysis results. The lead researcher then spoke with each person individually over the phone. The lead researcher then combined all their ideas and populated their chosen outcomes. These were then emailed or posted to all patients for further review and the opportunity to comment.	Agreement on touchpoints to represent each group. Development of audio trigger videos. Agreement on key concepts and pedagogical approaches to include in the educational programme.
SPP Joint Co-Design Workshop	Multi-group design workshop to bring all groups together to work collaboratively. Each SPP's touchpoints were introduced using audio clips. The lead researcher presented a table summarising the educational topics and pedagogical approaches suggested by each group.	Agreement on SPP touchpoints to embed in the new educational programme. Agreement on educational themes and pedagogical approaches (See Supplemental Information).

Specialists Co-Design Workshop	An overview of the project, suggested educational topics and pedagogical approaches, was presented at a virtual workshop, followed by audio presentations of SPP touchpoints. The specialist group discussed and agreed on the proposed outline for the new educational programme, agreeing it would meet its intended outcome to create an authentic learner-centred educational programme for developing interpersonal and communication skills amongst preceptors.	Agreement on outputs from SPP joint co design workshop. Agreement to underpin the new programme in Kolb's experiential learning theory principles, the principles of Universal Design for Learning (UDL), Kurt Lewin's Model of Change Principles and behavioural change theory to ensure effectiveness and uptake of the new programme.
Presentation of an outline of the New Programme	All codesign team members were invited to a presentation of the outline of the new educational programme, offering further opportunities to provide input and feedback. An overview of the suggested timeline for the development of the programme was presented, and a collective agreement was made that the lead researcher would send the codesign team bi-monthly updates on the status of the project.	The programme outline was finalised and agreed upon.
Codesign/ Production of RLOS, Role Play Simulations & Virtual Reality Experience	An iterative design process grounded in educational design including was implemented to codesign and produce the new educational programme.	Prototype of the new educational programme.
Celebratory Event	The final product was available for all to experience. The lead researcher gave a short talk summarising the project, how it is hoped it will impact nursing education and plans for future research projects investigating the impact of the educational programme on nurses' interpersonal and communication skills and thanked everyone involved in the project	Informal celebration event held on a university campus.
Pilot Launch of the New Programme	This blended learning programme will be piloted across several general nursing hospitals in Ireland that run preceptorship programmes in late 2022. Following implementation, the researchers will seek feedback to establish possible areas for improvement and the perceived impact on learners' future practice regarding their interpersonal and communication skills and their role as a preceptor.	The programme was recently accredited by Nursing & Midwifery Board of Ireland as a Category 1 approved CPD (continued professional development) course. Set to be piloted in late 2022.

7.3 Results

This study set out to identify critical touchpoints, i.e., personal or crucial memories that shape experiences of nursing preceptorship relationships, to identify key experiential knowledge that later informed the co-design of the new educational programme. Interestingly several similar touchpoints influence the experience and interpersonal relationships from all SPP perspectives, including first impressions, effective communication, and feedback. Other themes included psychological safety and attitude to teaching and assessing students. For full details on SPP Touchpoints and overarching target behaviours to include in the educational programme to address the SPP touchpoints (Please see Appendix H).

Secondly, this project set out to It co-design and co-produce an innovative preceptorship education programme incorporating experiential knowledge (touchpoints) and scientific knowledge (literature and expert-based knowledge).It was collectively agreed that the new educational programme would adopt an active blended learning approach consisting of a series of online reusable learning objects (RLOs), face-to-face role-plays and a state-of-the-art virtual reality storytelling experience. Two pilot studies previously led by the lead researcher influenced the blended learning programme, having identified that students felt prepared to engage in face-to-face simulation following exposure to RLOs (Hardie *et al.*, 2021). In addition, his experience of VR storytelling offered the unique ability to provide an immersive storytelling learning experience to supplement learning (Hardie *et al.*, 2020). RLOs are "a digital resource that can be reused to facilitate learning" (Wiley, 2000). It was collectively agreed that a series of RLOs would be created to promote flexible and autonomous learning online to support a proposed half-day face-to-face simulation. Six RLOs were developed, each addressing a specified learning objective.

Role Play Simulations will allow learners to practice the theoretical and practical information provided in the RLOs. It facilitates the practice of interpersonal and communication skills in a realistic yet safe learning environment (Sartain *et al.*, 2021). Two role-play scenarios simulating fundamental interpersonal interactions in a nursing preceptorship requiring dynamic and practical interpersonal and communication skills were designed.

In addition to the RLOs and role-play simulations, it was decided to develop a new state-of-the-art immersive storytelling experience. This pedagogy combines the emerging world of VR technology with the art form of classical storytelling. During the VR storytelling experience, the learner embodies the role of the patient, feeling the same sensation toward a virtual body within an immersive virtual environment as the biological body in the real world would experience (Tham *et al.*, 2018). This will permit preceptors to step into a patient's shoes, experiencing the interpersonal dynamics of a preceptorship relationship from the patient perspective, creating a meaningful and memorable learning experience. It is planned that preceptors will engage with this experience as part of their face-to-face learning, followed by a structured debrief session. Table 11 below outlines the design, description and implementation of the new active blended learning preceptorship educational programme. Figures below demonstrate screenshots from the new educational programme.

Table 11. Outline of Active Blended Learning Preceptorship Educational Programme

Programme Component	**Design**	**Description**	**Implementation**
Online Learning Resources	Six-month process involved the codesign team following a participatory approach based on the ASPIRE framework (Aims, Storyboarding, Population, Implementation, Release, and Evaluation) (Hassen et la., 2021). Each RLO unit was peer-reviewed by all codesign team members using the learning object review instrument (Vargo *et al.*, 2003), reviewing the overall design, usability, motivation, learning goal alignment, and quality of the content before production began. The content for the RLOs was created, including videos, images, voiceovers, and infographic slides. An educational technologist (A.B.) populated all media on an online platform, Articulate 360 (https://articulate.com)).	A series of six online reusable learning objectives (RLOs) was created incorporating a mixture of presenting information, touchpoints, video demonstrations, case study scenarios, interactive exercises, reflective exercises and on the spot feedback. Unit 1: Introduction to Interpersonal and Communication skills in Nursing Preceptorship Unit 2: Psychological Safety: Creating a Safe Learning Environment Unit 3: First Impressions & Orientation Unit 4: Teaching in the Clinical Environment Unit 5: Feedback Unit 6: Conflict Resolution	All learning units will be opened up to learners (hosted on Articulate) to complete at their own pace over the three weeks prior to the half-day face to face teaching described below. Each unit takes approximately 40-60 mins to complete. Learners can complete the units repeatedly if they wish to do so. An accompanying workbook will also be provided for learners to use with the RLOs to make notes and complete their reflective exercises.
Role Play Simulations	The lead researcher and an academic with a specialist	Two role-play simulations were designed to provide a	Learners will be provided with a pre-

	background in simulation-based education and patient safety led the design of the role-play simulations, which was iteratively peer-reviewed by the remaining co-designers. Applying the International Nursing Association for Clinical Simulation and Learning (INACSL) framework (2016), the codesign team considered design criteria such as creating a simulation experience that can achieve measurable objectives, is participant-centred and incorporates a level of fidelity that creates a perception of realism to the simulated scenario. The INACSL framework also guided the inclusion of a structured pre-brief session and a structured debrief session following the role plays.	safe learning environment to apply the new knowledge and skills from the RLOs. Role-play scenario 1: focuses on the learners' ability to provide a psychologically safe learning environment for students. Role-play scenario 2 focuses on the learners' ability to provide effective feedback and conflict resolution skills.	brief pack that will outline the role play goals and objectives. Learners will be divided into groups of three and alternate between the student, nurse, or patient positions. Each will run for 20 minutes, followed by 20 minutes debrief session each time. The learner playing the part of the patient will be provided with an observational feedback sheet to provide structured feedback during the debriefing session.
Virtual Reality Simulation	The lead researcher and a member of the codesign team with a specialist background in storytelling and film production led the design of the VR simulation in collaboration with a VR production company (Wombat Media). It was also iteratively peer-reviewed by the remaining co-designers applying the INASCL framework (2016). Using critical touchpoints from the interviews and the three-act structure to storytelling (Introduction; rising action; falling action (conclusion)) to structure the storyline, a short 10 mins VR storytelling was scripted, storyboarded and peer-reviewed. Using a state of the art 360 VR camera, the simulation was filmed in a simulated hospital ward environment using actors.	A state-of-the-art VR simulation was designed to experience nursing preceptorship from a patient's perspective, permitting the learners to "walk in someone else's shoes". The VR simulation depicts a patient's interpersonal interactions with a nurse and student and what it feels like from their perspective, e.g., if a nurse doesn't make eye contact when speaking to the patient or a student who talks over a patient.	Leaners will be provided with a pre-brief pack that will outline the VR simulation goals and objectives. Each learner will be provided with a VR headset to use with their smartphones. The VR simulation will run for 7 mins. A structured 20 mins debrief session will follow the VR experience.

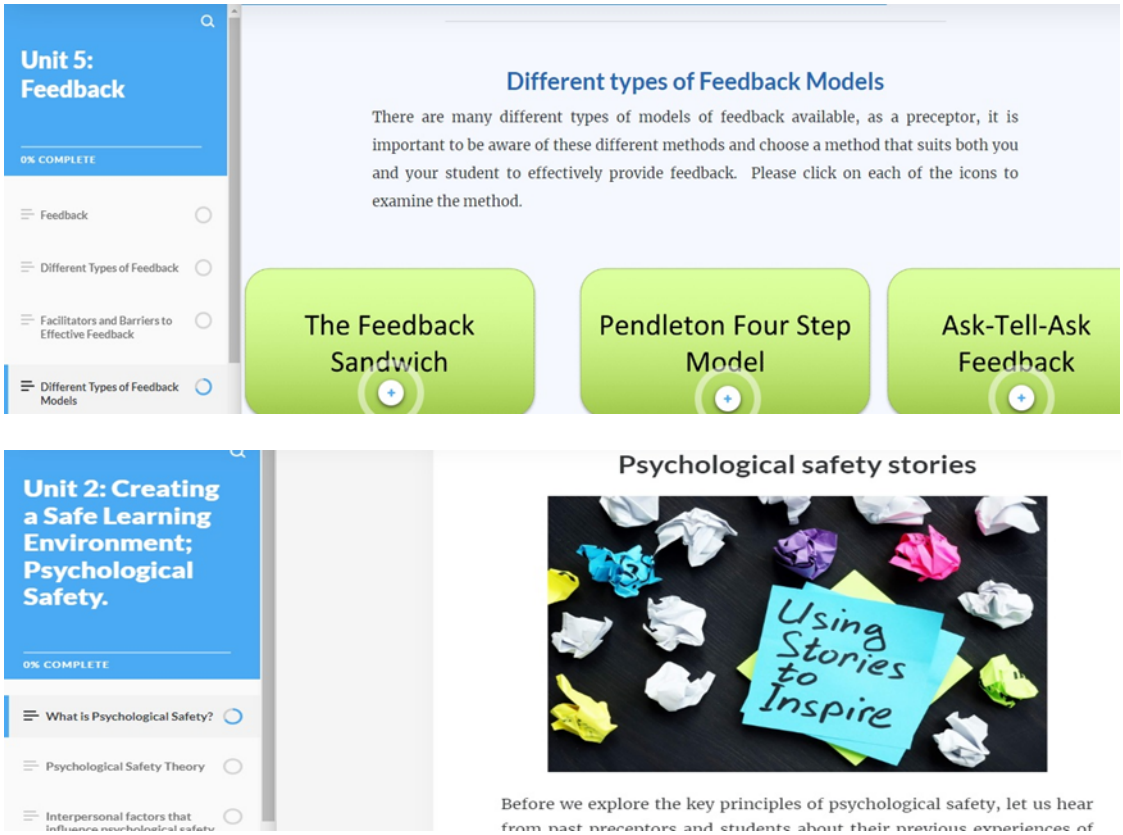
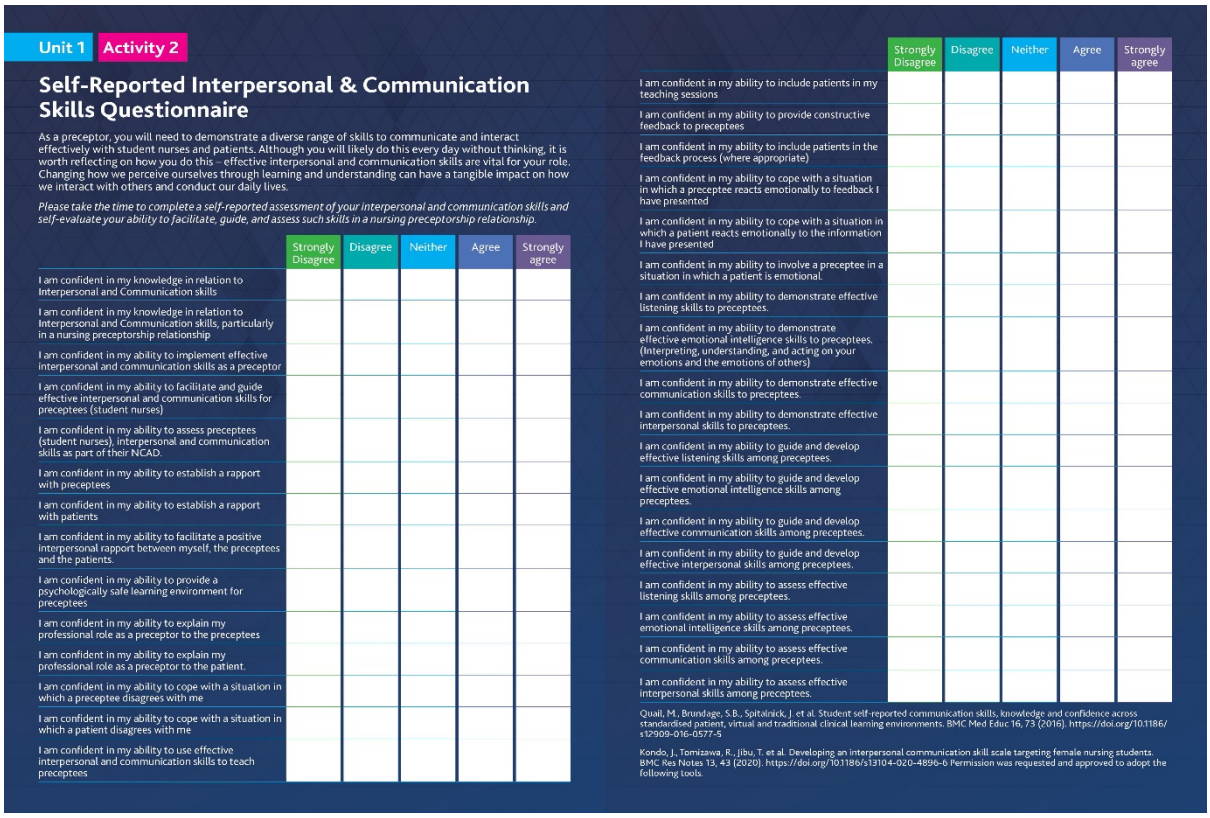


Figure 11. Screenshot of Reusable Learning Objective Online Units

Role Play Simulations Schedule

Time	
10 minutes	Introduction to Simulation Session 1. Outline the learning objectives. 2. Establish a fiction contract with learners. * 3. Outline confidentiality and safe learning environment agreement. * 4. Familiarize the learners with simulation equipment. 5. Outline the learner's role in the simulation. 6. Answer any questions.
5 minutes	Pre-Simulation: Introduce the students to the role play scenario 1.
10 minutes	Simulation: Role play simulation 1
20 minutes	Debrief: see SHARP debrief tool. Debrief questions provided.
5 minutes	Pre-Simulation: Introduce the students to the role play scenario 2.
10 minutes	Simulation: Role play simulation 2
20 minutes	Debrief: see SHARP debrief tool. Debrief questions provided.

Figure 12. Screenshot of Role Play Simulation Outline



Unit 1 Activity 2

Self-Reported Interpersonal & Communication Skills Questionnaire

As a preceptor, you will need to demonstrate a diverse range of skills to communicate and interact effectively with student nurses and patients. Although you will likely do this every day without thinking, it is worth reflecting on how you do this – effective interpersonal and communication skills are vital for your role. Changing how we perceive ourselves through learning and understanding can have a tangible impact on how we interact with others and conduct our daily lives.

Please take the time to complete a self-reported assessment of your interpersonal and communication skills and self-evaluate your ability to facilitate, guide, and assess such skills in a nursing preceptorship relationship.

	Strongly Disagree	Disagree	Neither	Agree	Strongly agree
I am confident in my knowledge in relation to Interpersonal and Communication skills					
I am confident in my knowledge in relation to Interpersonal and Communication skills, particularly in a nursing preceptorship relationship					
I am confident in my ability to implement effective interpersonal and communication skills as a preceptor					
I am confident in my ability to facilitate and guide effective interpersonal and communication skills for preceptees (student nurses)					
I am confident in my ability to assess preceptees (student nurses), interpersonal and communication skills as part of their NCAD.					
I am confident in my ability to establish a rapport with preceptees					
I am confident in my ability to establish a rapport with patients					
I am confident in my ability to facilitate a positive interpersonal rapport between myself, the preceptees and the patients.					
I am confident in my ability to provide a psychologically safe learning environment for preceptees					
I am confident in my ability to explain my professional role as a preceptor to the preceptees					
I am confident in my ability to explain my professional role as a preceptor to the patient.					
I am confident in my ability to cope with a situation in which a preceptee disagrees with me					
I am confident in my ability to cope with a situation in which a patient disagrees with me					
I am confident in my ability to use effective interpersonal and communication skills to teach preceptees					

	Strongly Disagree	Disagree	Neither	Agree	Strongly agree
I am confident in my ability to include patients in my teaching sessions					
I am confident in my ability to provide constructive feedback to preceptees					
I am confident in my ability to include patients in the feedback process (where appropriate)					
I am confident in my ability to cope with a situation in which a preceptee reacts emotionally to feedback I have presented					
I am confident in my ability to cope with a situation in which a patient reacts emotionally to the information I have presented					
I am confident in my ability to involve a preceptee in a situation in which a patient is emotional.					
I am confident in my ability to demonstrate effective listening skills to preceptees.					
I am confident in my ability to demonstrate effective emotional intelligence skills to preceptees. (Interpreting, understanding, and acting on your emotions and the emotions of others)					
I am confident in my ability to demonstrate effective communication skills to preceptees.					
I am confident in my ability to demonstrate effective interpersonal skills to preceptees.					
I am confident in my ability to guide and develop effective listening skills among preceptees.					
I am confident in my ability to guide and develop effective emotional intelligence skills among preceptees.					
I am confident in my ability to guide and develop effective communication skills among preceptees.					
I am confident in my ability to guide and develop effective interpersonal skills among preceptees.					
I am confident in my ability to assess effective listening skills among preceptees.					
I am confident in my ability to assess effective emotional intelligence skills among preceptees.					
I am confident in my ability to assess effective communication skills among preceptees.					
I am confident in my ability to assess effective interpersonal skills among preceptees.					

Quail, M., Brundage, S.B., Spitalnick, J. et al. Student self-reported communication skills, knowledge and confidence across standardised patient, virtual and traditional clinical learning environments. BMC Med Educ 16, 73 (2016). https://doi.org/10.1186/s12909-016-0577-5

Kondo, J., Tomizawa, R., Jibu, T. et al. Developing an interpersonal communication skill scale targeting female nursing students. BMC Res Notes 13, 43 (2020). https://doi.org/10.1186/s13104-020-4896-6 Permission was requested and approved to adopt the following tools.

Figure 13. Screenshot of accompanying workbook for the new educational programme



Figure 14. Screenshot of VR storytelling experience

7.4 Theoretical underpinnings of new educational programme

A constructivist approach was applied to the new educational programme, believing that active learners in their learning journey create new knowledge from experiences. (Gunduz & Hursen, 2015), Kolb's (2015) experiential learning theory principles also guide the programme's design. In addition, the principles of Universal Design for Learning (UDL), an inclusive approach, were embedded in the programme to ensure that the programme offered all learners, including those with disabilities or required accommodations, providing equal opportunities to learn (Ahead, 2017; Davis *et al.*, 2021). Table 12 outlines Kolb's Experiential Learning Theory & UDL principles strategies for the Nursing Preceptorship Programme.

Lastly, to improve the effectiveness and uptake of the new educational programme, the expert group suggested that the programme should also be underpinned by behavioural change theory. Identifying the behavioural barriers and enablers to facilitating positive interpersonal relationships would strengthen the likelihood that the new educational programme would act as a catalyst to change practices among established preceptors. Members of the expert group worked with the lead researcher to achieve this. Table 13 outlines the combined approach of behavioural change theory and EBCD and Kurt Lewin's Model of Change Principles and how they were applied to the new educational programme to promote change in preceptorship practice.

Table 12. Kolb's Experiential Learning Theory & UDL Principles Strategies for Nursing Preceptorship Programme

Kolb's Experiential Learning Theory	**Strategies for blended learning Preceptorship Programme**	**UDL Principle**	**Strategies for blended learning Preceptorship Programme**
Concrete Experience	The learner is provided with an opportunity to gain new learning experiences, i.e., online learning resources, role-play simulations and VR simulation	Multiple means of engagement	Identify clear learning objectives. Provide learners with multiple opportunities to achieve the programme's learning outcomes, e.g., RLOs (Articulate), Reflective exercises, Role-Play Simulations, Virtual Reality Storytelling, and debriefing sessions. Provide learner choice.
Reflective Observation	The learner is provided with an opportunity to reflect through written reflective exercises, self-reported questionnaires, and during simulation debriefing sessions.	Multiple means of representation	Use multiple media including audio, visual and text e.g., short video demonstrations. Ensure learners have access to digital documents, e.g., transcript of all RLOs and videos that the learners can edit (colour, font size). Furthermore, all videos have closed captions.
Abstract Conceptualisation	The learner is provided with an opportunity to learn from the experiences offered in the programme.	Multiple Means of Action & Expression	Facilitate active learning. Encourage learner metacognition. Learners can work at their own pace and demonstrate their knowledge in various ways, i.e., in group discussions and role-play simulations.
Active Experimentation	The learner is provided with an opportunity to plan and try out what they have learned during the half-day simulation training and future preceptorship practice.		

Table 13. Combined use of EBCD, Behavioural Change Theory & Kurt Lewin's Model of Change Principles

Step of Behavioural Change Theory	**How EBCD was utilised.**	**How the new educational programme aims to facilitate change in preceptorship practice**	**Kurt Lewin's Model of Change Principles**	**How the new educational programme aims to facilitate change in preceptorship practice**
Identify the key determinants of behaviour.	A comprehensive review of the literature was completed. Priorities for improvement and enablers were identified from the co-design team's touchpoints considered in terms of attitudes & behaviour. Expert opinions from the field of nursing were also sought.	Key enablers and barriers to facilitating positive interpersonal relations in a nursing preceptorship are embedded throughout the programme, providing the learner with real-life stories, interpersonal skills theory, and practical skills to develop effective IP & C skills for preceptorship practice.	The unfreezing stage refers to persuading others that the status quo is not beneficial and encouraging others to view a problem with a fresh perspective, including the patient experience in nursing preceptorship.	This programme highlights that the current literature regarding nursing preceptorship primarily excludes the patient experience and perspective, which we argue is incorrect and non-inclusive, as the patient is central to the relationship. Secondly, the programme aims to highlight the importance and negative impact ineffective interpersonal and communication skills can have on the patient experience and the student's learning experience to spark motivation for change among the learners of the educational programme.
Identify the techniques that target these determinants.	A comprehensive review of educational theory and pedagogical approaches in preceptorship education so participants could select educational and nursing interventions (From validated methods identified in the literature) that they felt would be most effective in the given	Active learner-centred pedagogy is embedded throughout the programme to facilitate the development of practical IP & C skills associated with a nursing preceptorship.	The moving phase refers to the stage in which the researchers will roll out the new educational programme and work collaboratively with CPCs (typically facilitate preceptorship education in hospital settings) to ensure they feel supported in implementing the programme.	To enhance the capability, opportunity and motivation for the new programme, the researchers will train the trainer days and ensure all materials for the programme are readily available, including access to virtual reality technology required to roll out the programme successfully. Support will be offered

	context and based on their personal experiences.			throughout the first run of the programme.
Model to fit the target population, culture and context.	The design of the programme content closely involved those that will deliver (CPC staff) and receive the educational programme (preceptors) to elicit perspectives on the programme's acceptability, practicality, and cost-effectiveness.	The new programme is designed to run as a blended learning programme with a half-day face-to-face simulation training (tackles the issue of releasing staff to attend and costs associated and increases accessibility to the programme).	The refreeze stage refers to when the programme will have been implemented multiple times over two years.	The programme aims for a new change in perspective to include the patient in a nursing preceptorship relationship and improve the knowledge and practice of practical interpersonal and communication skills required in a nursing preceptorship. It is hoped that nurses who complete the programme will be a driving force for change in practice.

7.5 Discussion

Several papers have discussed nurse preceptors learning needs from a preceptor's point of view (Foy *et al.*, 2013; Haggerty *et al.*, 2014), while Tsai *et al.* (2014) collected data from both preceptors and student nurses on their preceptorship experiences. However, there is no evidence to date investigating patients' experience of a nursing preceptorship to the best of the author's knowledge. Thus, this empirical research implementing an EBCD process to identify preceptor training needs from all three members of the nursing preceptorship relationship is a unique and novel approach to designing and creating a preceptorship education programme.

In keeping with previous research, this study found that first impressions and a welcoming and open disposition during the student's orientation period strongly influence the basis and ongoing premise of the professional relationship (Pasila *et al.*, 2017; Lindfords *et al.*, 2018; Hill & Melender, 2015; Quek y*et al.*, 2019). Similarly, patients in this study described the importance of being made feel welcome by a preceptor/student with an open and welcoming disposition as a critical touchpoint that positively influenced their experience by reducing anxiety and creating a feeling of self-worth. These findings align with Holst *et al.*(2017), who reported that patient satisfaction emerged when preceptors made an excellent first impression, were polite and made eye contact. Furthermore, a nurse's body language and tone of voice are strong indicators of how the relationship will evolve at the initial meeting (Kristoffersen & Friberg, 2017). This study, therefore, further supports the importance of first impressions, including language, tone, and body language, suggesting it plays a vital role in a preceptor creating a positive interpersonal relationship and should be included in preceptorship education programmes.

Including patient in the co-design of the new educational programme identified unique results. The patient co-designers strongly emphasised person-centred communication as an influential touchpoint, citing its importance in facilitating a better patient experience and patient satisfaction. Previous research on patients' healthcare experiences has noted the same (Dempsey *et al.*, 2014; Lang, 2012; Kennedy, 2014; Rapport *et al.*, 2019), reporting effective communication and high-quality patient

information can result in better patient outcomes and patient satisfaction. In comparison, several studies have also found a correlation between poor nurse-patient communication and patient dissatisfaction (Lotfi *et al.*, 2019; Karaca & Durna, 2019; Norouzinia *et al.*, 2016). Thus, the inclusion of practical interpersonal and communication skills to facilitate person-centred communication in a nursing preceptorship should be included as part of preceptors' education.

Furthermore, patient co-designers indicated the importance of seeking permission prior to a student's learning experience and engaging in student feedback. These results mirror those highlighted in Suikkala *et al.* (2018) scoping review examining patients' involvement in nursing students' clinical education, in which some patients perceived themselves as active participants who facilitated students' learning by sharing knowledge and experience about their care and wellbeing as well as assessed students' performance by providing encouraging feedback. Therefore, it seems patients appreciate the opportunity to contribute to a student's learning process and provide feedback. However, permission should be sought prior to the student being present. Including these views and guidelines to including patients in teaching sessions and feedback in preceptorship education is therefore essential.

Creating bidirectional feedback opportunities was a crucial touchpoint for preceptors in this study. Previous studies also demonstrated an association between preceptor feedback and formulating an open and trusting interpersonal relationship with students (Allen & Molloy, 2017; Hill *et al.*, 2014; Myers & Chou, 2016). Preceptors in this study also iterated a link between student assessment/feedback and feelings of guilt and pressure when failing a student. Previous studies have demonstrated similar results, with preceptors reporting a reluctance to fail students and the emotional sense of guilt that goes with failing a student (Nugent *et al.*, 2020; Kennedy & Chesser-Smyth, 2017). Central to the process of failing a student is providing constructive feedback, yet several studies have highlighted that preceptors feel they need further education in the area of providing feedback to nursing students (Anthony & Wickman, 2015; Kennedy & Chesser-Smyth, 2017; Wu *et al.*, 2015). Therefore, including practical

feedback principles in the new educational programme was imperative to enhance the preceptor's understanding and skills in providing effective feedback.

The co-design team from this study established that a blended learning approach best suited the new preceptorship programme. Many preceptorship programmes are implementing a blended learning approach (Carlson & Bengtsson, 2015; Condrey, 2015; Heffernan *et al.*, 2009; Martensson *et al.*, 2016; Potter *et al.*, 2017; Tuomikoski *et al.*, 2020; Wu *et al.*, 2020b) as it reduces the time required away from the ward and increases accessibility and convenience as it permits preceptors to complete a proportion of the programme in their own time (Wu *et al.*, 2018). In line with the literature (Carlson & Bengtsson, 2015; Condrey,2015; Good, 2021; Martensson *et al.*, 2016; Potter *et al.*, 2017; Wink & Ruland, 2016; Wu *et al.* 2020a; Wu *et al.* 2022b) and following a pilot study carried out by the researcher (chapter 5), the co-design team selected the inclusion of online learning units as an active pedagogy to prepare preceptors for the half-day face-to-face simulation day of this educational programme. Cited benefits of online learning units (also referred to as reusable learning objects (RLOs) include their ability to present theoretical content interactively and promote autonomous learning that can provide on-the-spot feedback (Windle & Warrad, 2010; Brown *et al.*, 2019).

Similar to the current preceptorship programmes (Jeggels *et al.*, 2013; Liao *et al.*, 2019; Massango, 2020; Nelson *et al.*, 2012; Potter *et al.*, 2017; Sandau *et al.*, 2011a; Sandau *et al.*, 2011b), this study identified role-play simulations as a practical pedagogy to develop preceptors interpersonal and communication skills. Currently, there is no evidence of the application of VR storytelling in preceptorship education programmes. However, reported benefits of VR storytelling in nursing education include learners finding VR more engaging than traditional teaching methods and allowing a 'safe' environment to practise skills without fear of making mistakes (Plotzky *et al.*, 2021). Learners have also reported its suitability for various learning styles and its more flexible mode of teaching (Mohan, 2022). It is hoped that the inclusion of this new innovative virtual reality storytelling experience will provide preceptors with an engaging and authentic learning experience. It will help foster greater empathy for

patients involved in nursing preceptorships by walking in their shoes during the VR simulation and thus develop practical and effective interpersonal and communication skills associated with a nursing preceptorship.

To the best of researchers' knowledge, there are currently no published research papers examining the application of EBCD to co-design and co-produce an educational intervention within the context of nursing education. Therefore, this study adds unique insight into implementing an EBCD method to develop an educational intervention. In line with previous EBCD facilitators (Tollyfield, 2014), the researcher found that individual interviews at the beginning of the project engaged the SPP co-designers and enhanced their commitment to the EBCD process. This study confirms that touchpoints are key to unlocking everyday experiences (Bate & Robert, 2007) and sparked a highly collaborative process amongst the co-design team when shared (Bate & Robert, 2016). Per the present results, previous studies have demonstrated that collectively reflecting on each group's touchpoints provides a real opportunity to see a situation from different perspectives and better understand practices (Fylan *et al.*, 2021; Beresford *et al.*, 2021; Garcia Martinez *et al.*, 2022). This project's approach to embedding the touchpoint narratives throughout the new educational programme signifies an innovative approach to utilising touchpoint narratives beyond the initial design phase of an EBCD intervention and creating an authentic educational programme.

This study suggests that EBCD can be adapted and implemented in a nursing education context and that EBCD can play a critical role in improving preceptorship education programmes by gathering the perceptions and views of SPP to then collaborate with nursing and educational experts to co-design and co-produce the new educational programme. Including SPP and other key stakeholders (CPC, Nurse educators) as co-designers throughout the EBCD process has proved advantageous; it has meant they were key drivers in the educational content of the new educational programme to ensure it spoke to real-world experiences of nursing preceptorships and practical implications to facilitating a preceptorship education programme.

This new education programme addresses some of the current limitations of preceptorship education programmes observed in the literature. Most notably, the inclusion of the patient voice and perspective throughout the programme. Furthermore, it addresses a key concern for both students and preceptors to incorporate foundational interpersonal skills such as creating positive first impressions or language to use when providing feedback that appears to be lacking in many preceptorship education programmes, including the new national mandatory online preceptorship programme, "Preceptorship in Practice" HSEland (2022). A primary focus of the HSE programme is the preceptor's role in assessing student competency and its associated documentation. Limited focus is placed on the practical skills required to facilitate a positive clinical learning experience, including practical interpersonal and communication skills associated with teaching and feedback, and the patient is not mentioned throughout the programme. Furthermore, this programme is online; therefore, preceptors are not offered the opportunity to apply new knowledge gained from completing the programme in a safe environment, such as role-play simulations included in this new programme. The preceptorship education programme designed in this study was recently approved as a Category 1 (CEU 8 points) by NMBI until Jun 2024 (Appendix I). Therefore, it is hoped this new educational programme can support ongoing professional development and be implemented as a preceptorship update course, which NMBI recommend every 2-3 years for all preceptors (NMBI, 2019). It will benefit practising preceptors to reflect on their practice and develop their interpersonal and communication skills to ensure they facilitate positive interpersonal preceptorship experiences and create a positive clinical learning environment for their students. Furthermore, this programme will be available under creative commons and can be adapted for use by nurse educators internationally to suit local policies and procedures.

A significant strength of this study is the multiple methods design of the research, including qualitative interviews and a collaborative participatory design process. The project retained a user-centred design approach throughout, as their lived experience, expertise and knowledge of nursing preceptorship propelled the entire co-design and co-production of the new preceptorship education programme. Furthermore, the

credibility and authenticity of the identified touchpoints were internally validated by the co design team. Although a diverse sample of SPP and professionals were recruited, most were female and of Irish nationality. An equal gender balance and representation of other diverse nationalities working and utilising general nursing hospitals in Ireland would provide a greater representation of cultural experiences and attitudes to nursing preceptorship relationships. However, hosting the one-to-one interviews and co-design workshops virtually facilitated broader demographic participation and increased transferability over a study carried out at a single hospital location. Overall, the co-design team actively engaged in the virtual co-design workshops. However, some voiced that they were uncomfortable with teleconferencing technology and preferred to engage over the phone. Bimonthly emails were therefore sent to all co-design members to keep the entire co-design team updated with all the latest outcomes of the workshops. Unfortunately, the researchers could not carry out observational studies in the hospital during the initial stages of the project due to Covid-19 restrictions. Direct observations could have provided further insight into behaviours and interactions during preceptorship. However, a comprehensive review of the literature identified and supported several key themes that emerged from the one-to-one interviews with each of the different cohorts suggesting that their experiences are universal and experienced internationally.

This is the first study to explore the EBCD of a new educational intervention. Replicating this study in other divisions of nursing education, such as care of older person education or surgical nursing education, would help to understand if the findings are generalisable and if EBCD is a suitable framework for co-design and co-development of other nursing education programmes and curricula. Furthermore, examining the co-designers' experiences of partaking in this study could provide further insight into effective EBCD practices or limitations to creating a new educational programmes.

7.6 Conclusion

This paper outlines an innovative adaption of the EBCD method to develop a new preceptorship education programme. EBCD is a valuable framework for developing

human-centred educational resources that combine experiential knowledge (touchpoints) and scientific knowledge (literature-based knowledge). It facilitated the opportunity for all participants to have ample opportunities to suggest, create and refine ideas. It brought together individual viewpoints of all involved in nursing preceptorship to create a unique educational programme that captures real-life experiences. Combining interpersonal and communication skills theory with nursing theory, educational theory and behavioural change theory resulted in the development of what is hoped to be an authentic learner-centred educational programme that will equip preceptors with the knowledge and skills to effectively carry out their roles as a preceptor and build positive interpersonal relationships.

In the next chapter, the researcher will discuss a key output from the new educational programme outlined in this chapter. Innovative tips for creating a psychologically safe learning environment were established and will be discussed in the next chapter.

Chapter 8: Key tips to providing a psychologically safe learning environment in the clinical setting

Abstract

Having psychological safety embedded in preceptorship relationships facilitates positive interpersonal and educational experiences for students. Psychological safety refers to a student's belief as to whether or not it is safe for them to take interpersonal risks, such as asking questions, sharing an idea for improvement or speaking up to maintain patient safety. Having psychological safety leads to collaboration, positive student learning experiences and effective patient care. This article presents key guidelines for preceptors to provide a psychologically safe learning environment for their students. Guidelines fall under four categories 1) before meeting students, 2) first meeting students, 3) continued relationship with students, and 4) general rules. These guidelines are informed by current literature on psychological safety and preceptorship and the author's clinical expertise in nursing preceptorship. We conceptualise psychological safety in a nursing preceptorship for preceptors to denote the experience of inclusivity, empowerment, and well-being of students within the social, cultural and physical clinical learning environment. A crucial attribute to cultivating a psychologically safe environment involves being an accessible and approachable preceptor.

Hardie P., O'Donovan R., Jarvis S., Redmond C. (2022). Key tips to providing a psychologically safe learning environment in the clinical setting. Under review BMC Medical Education.

8.1 Background

Learning in the clinical environment is a cornerstone of healthcare education (Sundler *et al.*, 2019). An effective and supportive clinical learning environment (CLE) provides trainee healthcare professionals with an opportunity to develop professional behaviours, link the theoretical aspect of their studies with clinical practice and strongly influence students' achievement of their programme learning outcomes (Sellberg *et al.*, 2021; Nordquist *et al.*, 2019).

Central to the learning in the CLE in nursing education is preceptorship. Preceptorship has been defined as: *'an approach to the teaching and learning process within the context of the practice setting which allows students to develop self-confidence while increasing their competence as they become socialised into the profession of nursing'* (Billay & Myrick, 2008, pg. 259). A fundamental component of preceptorship is the 'preceptorship relationship', a triadic professional relationship between the preceptor (experienced staff nurse) and the preceptee (nursing student), centred on the delivery of patient care within a clinical environment (Hardie *et al.*, 2021). With 50% of the undergraduate nursing curriculum in a higher education institution and the other 50% in the clinical environment, preceptors play a pivotal role in educating student nurses in the clinical environment. It is widely acknowledged that the quality of the preceptorship relationship can significantly influence the student's integration into the nursing profession and the clinical environment and can affect the student's professional development and delivery of patient care (Ward & McComb, 2017).

A productive clinical learning environment for students depends on positive interpersonal relations. When preceptors take an interest in the supervision of students, are easy to approach, and engage and collaborate with students and patients, it positively influences the students learning experience (Ekstedt *et al.*, 2019). Nursing students have also reported that when preceptors create an atmosphere of respect and recognition of the student's work, it positively impacts their learning, creating an inclusive and psychologically safe learning experience (Sundler *et al.*, 2019).

We provide an argument that a preceptor's ability to provide a psychologically safe learning environment for their students can significantly impact the students learning experience. Moreover, the current literature suggests a lack of guidelines for preceptors to address the psychological safety needs of their students. Current guidelines for psychological safety are typically focused at an organisational and team level (O'Donovan *et al.*, 2021). The guidelines presented in this paper target individual preceptors who aim to provide a psychologically safe learning environment for their students.

8.2 What is psychological safety?

Psychological safety was initially defined as a "shared belief that the team is safe for interpersonal risk-taking" (Edmondson, 1999). These interpersonal risks include open communication, voicing concerns, asking questions and seeking feedback without fear of judgment (O'Donovan *et al.*, 2021). In other words, psychologically safe environments allow individuals to be their authentic selves, improve individuals' well-being, and reduce work-related stress, leading to increased engagement and learning. Within hierarchical healthcare teams, individuals in more junior positions often find it difficult to speak up against the status quo, reducing opportunities for collaborative learning (Edmondson *et al.*, 2016). Therefore, psychological safety requires deliberate efforts to reduce the professional hierarchy often observed in healthcare teams (O'Donovan & McAuliffe, 2020).

Seminal work by behavioural psychologist Amy Edmondson (1999,2016) established that when leadership and interpersonal climate support candour, humility, learning from error, and an appreciation of input from everyone on the team, psychological safety can occur. Moreover, essential work carried out by Clark (2020) in the field of psychological safety illustrates four stages of psychological safety; 1) feel included; inclusion safety, (2) feel safe to learn; learner safety, (3) feel safe to contribute; contributor safety and (4) feel safe to challenge the status quo; challenger safety. Clark (2020) argues the four stages of psychological safety are a universal pattern that reflects the natural progression of human needs in social settings. In the context of learning, Clark (2020) highlights the importance of learner safety in asking questions,

giving, and receiving feedback, experimenting, and making mistakes when learning. The innovative and seminal work of Edmondson & Clark has pioneered effective practices to creating psychological safety.

8.3 Methods

We provide an argument that a preceptor's ability to provide a psychologically safe learning environment for their students can significantly impact the students learning experience. Therefore, the authors set out to examine the available literature on psychological safety in a clinical learning environment, particularly in the context of a nursing preceptorship. This review aimed to establish what is known about psychological safety in a clinical learning environment. From this evidence base the authors set out to establish key tips for preceptors to create a psychologically safe learning environment for students in a nursing preceptorship. The review sought to address the following research question:

- What is known about psychological safety in a clinical learning environment?

A comprehensive literature search was employed to inform the development of the innovative tips for providing a psychologically safe learning environment in the clinical setting.

The search was conducted within the following databases:

CINAHL, PsycINFO and PubMed.

The search strategy was deployed in Jun 2022 to identify the most up-to-date literature. Key search terms included Preceptor (or) Mentor (or) Supervisor (or) Clinical learning environment (or)Practice placements (or) clinical education (or) nursing education (or) medicine education

AND

Psychological* safety (or) safe learning environment

Studies eligible for inclusion were peer-reviewed or opinion pieces from any country, published between 2000 and 2022 and explored the development, implementation and/or evaluation of interventions relevant to psychological safety in a clinical learning environment. Given the limited number of interventions targeting psychological safety in nursing education, the search was expanded to include medical education. The grey literature was examined to identify professional guidance on learning in the clinical environment.

Studies were excluded if they were not available in English or if they reported on interventions conducted outside healthcare settings.

The initial electronic database searches retrieved 1127 references. Search results were uploaded to Mendeley reference management system (https://www.mendeley.com) to aid screening. Duplicates were removed (n=371). The lead author carried out title and abstract screening. Common reason for exclusion (n = 700) was the focus was not on psychological safety in a clinical education setting. 56 full screen papers resulted in inclusion of two review papers, two case studies, five empirical papers, three commentary papers and three professional guidance documents (n=13).

This review used a deductive thematic synthesis (Braun & Clarke, 2022) to combine the studies examining psychological safety in a clinical learning environment to a) examine psychological safety in clinical education b) examine psychological safety in the context of a nursing preceptorship. Furthermore, a content analysis was carried out on empirical research and professional guidance documents to identify universal themes for creating psychological safety so that they could then be applied to a nursing preceptorship scenario based on the authors clinical expertise in nursing preceptorship.

8.4 Psychological safety in clinical education

There is growing body of conceptual and empirical work focusing on understanding the nature of psychological safety, identifying factors that contribute to it, and examining its implications for individuals, teams, and organizations within healthcare clinical education. According to Edmondson *et al.* (2016), psychological safety is

critical in enabling individuals to overcome barriers to learning in interpersonally challenging environments. The feeling of safety is essential in learning environments, where students are expected to take risks (Charteris *et al.*, 2021). It is essential in a nursing preceptorship where students' clinical placement outcomes rely heavily on the interpersonal dynamic and assessment associated with the preceptorship relationship. Preceptors are responsible for teaching and assessing students using a national clinical assessment document (NCAD) (NMBI, 2020). Preceptors are also responsible for ensuring they provide a supportive culture for students (NMBI, 2020).

Psychological safety has been seen as an important element underpinning learning behaviours. Current literature reports that when students feel psychologically unsafe, they tend to refrain from doing or saying something that might suggest incompetence (Lyman & Mendon, 2021). An unsafe psychological environment can also raise anxiety and lead to avoidance and disengagement of students' clinical education and patient care (Aloufi *et al.*, 2021; Han & Roh, 2020). Students can find it challenging to think clearly, retain information or perform clinical skills they previously felt competent in (Lyman & Mendon, 2021). Psychological safety also plays a vital role in students speaking up for patient safety or questioning nurses when they observe inconsistencies between what is taught at university and what is performed in practice (Fagan *et al.*, 2021).

Psychologically safe learning environments permit students to seek clarification or help to answer questions or demonstrate skills workout fear of judgement or humiliation (Lyman *et al.*, 2019). It is important to highlight that while preceptors should create an environment where students can make mistakes without being judged or punished, they must ensure patient safety throughout their practice placement (Rodger & Juckes, 2021). A psychologically safe environment does not mean a lack of accountability (Edmondson, 2020). In fact, accountability and psychological safety are required for students to operate within the “learning zone” (Edmondson, 2020). Furthermore, students are expected to engage at a supernumerary level, adhering to established professional guidelines and code of conduct and only performing tasks they have learned and are competent to perform (Chicca & Shellenbarger, 2020).

To contextualise the principles of psychological safety and learning in the clinical environment, it is important to consider Kolb's experiential learning theory. Due to its interpersonal and practical nature, experiential learning is critical for nursing skill development (Hill, 2017). According to Kolb's experiential learning theory, learning is a process through which experience is transformed into new knowledge (Kolb, 1984). Kolb's learning cycle involves four stages: concrete learning, reflective observation, abstract conceptualisation and active experimentation (Kolb, 2014). More recently, Kolb and Kolb (2018) acknowledge the importance of psychological safety in creating an effective learning space. Under this concept, the individuality of learners is faced and embraced by encouraging differences of expression. The learner and instructor can engage in fearless communication, i.e., express how they feel or their level of knowledge without fear of being reprimanded. In the absence of psychological safety, people do not share their unique knowledge, thus posing a threat to learning (Edmondson, 1999). Furthermore, speaking to Kolb's experiential learning cycle principles, a factor in creating psychological safety in the clinical learning environment is identifying the learners' preferred learning style. Kolb postulated that a learning experience is maximised when the learner and facilitator consciously try to engage with the learner's learning style (Aubrey & Riley, 2022).

Psychological safety principles are also related to Maslow's (1943) hierarchy of needs. Maslow highlights that our actions are motivated by particular psychological needs; 1) psychological needs, 2) safety needs, 3) love and belonging needs, 4) esteem needs, and 5) self-actualisation needs. A student can only move to address the higher-level needs when their basic needs are fulfilled. For example, once students feel safe, they seek social interaction and feel a sense of belonging followed by respect and achievement. Therefore, preceptors must allocate an appropriate level of time to establish psychological safety and maintain positive interpersonal relations within the preceptorship relationship to create a safe and inclusive learning environment for students from the outset of the professional relationship and throughout.

The principles of psychological safety also speak to Mezirow's (1991) theory of transformative learning. Mezirow & Cranton [2008,pg74] defined transformative learning as "*the process of using prior interpretation to construe a new or revised interpretation of the meaning of one's experience as a guide to future action*". Constructs of critical reflection, dialogue, and experience are considered central to transformative learning theory (Aubrey & Riley, 2022). Psychological safety creates an environment where the learner is comfortable embracing feelings of uncertainty associated with learning new skills in the clinical environment. Psychological safety permits the learner to feel safe to openly admit if they do not know something or are unsure of how to complete a particular skill, thus facilitating a positive learning experience and, most likely, a productive learning experience for the learner. Like Kolb's experiential learning theory, critical reflection also plays a central role in Mezirow's transformative learning theory. Psychological safety creates a safe environment for learners to critically reflect and discuss experiences within the clinical learning environment to generate a new understanding of the experience.

8.5 Psychological safety in nursing preceptorship.

As discussed in the previous section psychological safety plays a central role in education in the clinical setting. The authors argue that psychological safety also plays a crucial role in a nursing preceptorship, where students' clinical placement outcomes rely heavily on the interpersonal dynamic and assessment associated with the preceptorship relationship. Preceptors are responsible for teaching and assessing students using a competency assessment criteria (NMBI, 2020; NMC, 2018; Department of Health (Australia), 2016). Preceptors are also responsible for ensuring they provide a supportive culture for students (NMBI, 2020). Students' perception of psychological safety is likely to mediate the relationship between preceptor-to-student interactions and students' perceived quality of their learning experience . The current literature suggests a lack of guidelines for preceptors to address the psychological safety needs of their students. Current guidelines for psychological safety are typically focused at an organisational and team level (O'Donovan *et al.*, 2021). The guidelines presented in the next section are targeted at individual preceptors who aim to provide a psychologically safe learning environment for their students.

8.6 Guidelines to providing a psychologically safe environments for students

In the following section, the authors will describe key recommendations to fostering psychological safety for students in clinical learning environments based on Edmondson's (1999, 2016) and Clarke's (2020) seminal work in psychological safety, the available literature on psychological safety in clinical education, international professional guidance documents (NMBI, 2020; NMC, 2018; Department of Health (Australia), 2016) and the author's expertise in the field of preceptorship. Table 1 below presents guidelines for creating a psychologically safe learning environment in the context of a nursing preceptorship under four categories 1) before meeting students, 2)first meeting students, 3) continued relationship with students and 4) general rules. It describes each of the individual steps, providing a rationale and example for each.

Lyman *et al.*'s (2020) recent study examining new graduate nurses' experiences of psychological safety found four main themes: building credibility (building the trust of others in their capabilities), making personal connections, feeling supported and seeking safety. Similarly, a more recent concept analysis of the application of psychological safety to health care found five attributes: perceptions of the consequences of taking interpersonal risks, strong interpersonal relationships, group-level phenomenon, a safe work environment for taking interpersonal risks and non-punitive culture to influence psychological safety (Ito *et al.*, 2021). In addition, a systematic review of factors that enable psychological safety in healthcare teams found five broader themes: priority for patient safety, improvement of learning orientation, support, familiarity with colleagues, status, hierarchy and inclusiveness and individual differences impacted psychological safety (O'Donovan & Mcauliffe, 2020).

Collectively the evidence above suggests the critical role of strong interpersonal connections in initiating a psychologically safe environment for students. Identifying students preferred names creates an atmosphere of respect (Papastavrou *et al.*,

2016). It lets preceptors connect with their students beyond surface-level greetings or small talk. On the other hand, a lack of openness or personal engagement from preceptors has resulted in negative learning experiences for students (Sweet & Broadbent, 2017). Therefore, the authors recommend *"Identifying how the student likes to be addressed and how to pronounce their name"* and *"Build a rapport by sharing appropriate background and experiences about yourself; Ask students questions to discover their interests"* (Table 14).

Moreover, international guidance documents for nurses on learning in the clinical environment NMBI (2020), NMC (2018), Department of Health (Australia), 2016) recommend that all students are made aware of the supports and opportunities available to them within the clinical environment. This includes students clearly understanding the purpose of the professional relationship preceptorship offers, your role as their preceptor, and how it will work. Therefore, the authors recommend *"Define and communicate the purpose of the professional relationship and your role as their preceptor"(Table 14).*

Inclusivity is another fundamental component of creating a psychologically safe learning environment (Chicca & Shellenbarger, 2020). Without addressing social and cultural aspects of the clinical learning environment, there is a risk that students may feel excluded from the ward resulting in students feeling a lack of belonging or value to the team (Chicca & Shellenbarger, 2020). Social acceptance and feeling part of the team have led to motivation to provide care and clinical learning amongst students (Parchebafieh *et al.*, 2020). Therefore, the authors recommend "*Express gratitude and appreciation towards students for their input to the team*" and "*Avoid exclusive patterns of social interaction*" (Table 14).

Trust is a crucial aspect of psychological safety. Trust forms the foundation of psychological safety, acknowledging vulnerabilities and allowing reciprocal expectations and beliefs to rely on each other during the teaching and learning process (vanDyk *et al.*, 2022). Preceptors must create a trusting atmosphere for their students.

Therefore, the authors recommend*" Identity with your students each other's strengths and weaknesses in areas of nursing" and "Demonstrate learning empathy"* (Table 14).

Unintentional bias is another factor that can result in a psychologically unsafe environment for students (Luther & Flattes, 2022). Preceptors must examine any bias or stereotypes they may have towards students to remove barriers to effectively communicating and engaging with students to promote belongingness in the preceptorship relationship. Therefore, the authors recommend "*Identifying and reflecting on any unconscious negative bias (towards students), so you can act to remove them*" (Table 14).

Setting clear expectations and learning objectives is also a valued action to create a psychologically safe learning environment for students (Lyman & Mendon, 2021). When clear learning objectives are set collaboratively, it positively influences the students learning experience (Saukkorippi *et al.*, 2020). Therefore, the authors recommend "*Communicating a vision of the student's potential*" and "*Collaborate with their student to set concrete and time-bound learning goals*" (Table 14).

As previously outlined Edmondson (2016) established creating an interpersonal climate that supports openness and honesty is central to psychological safety and learning. Therefore, in the context of providing a psychologically safe environments for students, the authors recommend preceptors take the following steps*: "Identify with your students each other's strengths and weaknesses in areas of nursing", "Admit when you do not know something", "Share past mistakes" (Table 14).*

Equally, Clarke (2020) established the importance of learner safety and psychological safety in one's ability to ask questions. This speaks both to the preceptor and student in a nursing preceptorship. Therefore, the authors recommend that preceptors ask structured questions to spark students learning; *"Formulate a set of questions specific to your area of nursing". The authors also recommend "conducting frequent touchpoints" to create an atmosphere where students feel safe to ask questions.(Table 14).*

Another critical factor in creating a psychically safe learning environment is engaging students in collaborative and bidirectional feedback (Myers & Chou, 2016; Lyman & Mendon, 2021). Bidirectional feedback creates a collaborative environment and demonstrates mutual respect (Myers & Chou, 2016). Therefore, the authors recommend "*ask the student for feedback and embrace it*" and "If a student makes a mistake, do not judge or reprimand them. Reinforce their effort into achieving the skill, highlight how it can be improved, and ask how you can help them achieve this" (Table 14). Furthermore Clarke (2020) established the importance of making mistakes when learning and the importance of creating an environment in which there is fear or reprimand. Therefore, the authors recommend to *"If a student makes a mistake, do not judge or reprimand them. Reinforce their effort into achieving the skill, highlight how it can be improved, and ask how you can help them achieve this" (Table 14).*

Table 14. Guidelines to providing a psychologically safe learning environment for students

These guidelines are designed to help you as a preceptor apply a standardised approach to providing a psychologically safe learning environment for your students.

Prior to Meeting Student

Steps	Rationale	Examples
Formulate a set of questions specific to your area of nursing	This will help activate the learning process for students	Choose questions suitable to your clinical area.

Identify and reflect on any unconscious negative bias (towards students), so you can act to remove them.	Unconscious bias happens when we allow our attitudes, feelings, stereotypes, or beliefs to impact our judgement or understanding of students. Unconscious bias also affects how you communicate. It can affect the morale and the overall experience of the students. They may feel alienated and be less likely to make their ideas heard. Your nonverbal communication can give away your underlying bias, resulting in students feeling unwanted and a loss of confidence.	Stereotyping students, e.g., all students are not interested in learning, ageism, gender bias, bias relating to students' stage of their programme (1st years have little knowledge or skills, fourth-years should be able to do everything).

Initial Meeting Student

Steps	Rationale	Examples
Introduce yourself at the first opportunity	Being proactive in introducing yourself and establishing *yourself* as an open, friendly, and professional individual will "break the ice" and display warmth, acceptance, and a sense of inclusion, encouraging the student to engage with you.	"Hello, my name is ..... I will be your preceptor. You are very welcome".
Identify how the student likes to be addressed and how to pronounce their name	Calling a person by their preferred name shows respect. It helps provide an empowering, safe, and non-discriminatory educational and work environment. A name is an extremely important part of a person's identity; mispronunciation of their name can cause insult, signalling to the student that they are less important and less valued.	"It is so lovely to talk with you, (insert name)- Do you prefer (insert name) or do you go by another name? "What do you like to be called"? "I want to make sure that I say your name correctly. Could you pronounce your name for me, please"?

Define and communicate the purpose of the professional relationship and your role as their preceptor	To feel a part of the preceptorship relationship, the student must understand the purpose of the relationship, your role as their preceptor, and how it will work. It creates an open and transparent relationship with a clear understanding of the purpose and role in the relationship.	"I will be working with you over the next few weeks; I am here to work alongside you in providing patient care, teach you, provide you feedback and assess your level of competency throughout your placement. I am here to answer any questions you may have and help you achieve your learning goals for the placement ".
Build a rapport by sharing appropriate background and experiences about yourself; Ask students questions to discover their interests.	Providing students with a summary of your experience to date and appropriate personal information helps build a friendly and inviting rapport. Asking students about their experiences and personal interests helps create a common ground.	"I have worked on a surgical ward for 10 yrs. Prior to working here..... *I was drawn to nursing because .....etc* Tell me a little about yourself? What experience have you had to date? Do you have any hobbies"
Collaborate with the student to set concrete and time-bound learning goals	Students do better when they feel in control of their learning. Working with your students to set reasonable but achievable goals in the placement timeframe drives their learning and makes them feel they are leading their learning. Reassuring students that learning takes place over a period of time aids their ability in setting realistic expectations.	"What would you like to learn on this placement?" "I would like you to achieve the following.....how does that sound to you?" "I feel you can achieve the following learning objectives during your placement ..... how does that sound to you? Is there anything else you would like to learn? "
Communicate a vision of the student's potential	Helping the student see what they can do can stimulate the student's motivation to learn.	"I think that you will get on great during your placement, you have a great knowledge base starting, and you are extremely capable of passing this placement." Alternatively, more specific, "I think you will be able to complete a full pre-op assessment by the end of the week. You are already doing most of it on your own. Keep up the good work!".

Identify with your students each other's strengths and weaknesses in areas of nursing	Identifying and utilising your strengths has been linked to an elevated sense of vitality and motivation, increased probability of achieving goals, and a stronger sense of life direction. It is also linked to higher self-confidence, engagement, and productivity. Actively and creatively reflecting and problem-solving around your strengths and weaknesses can motivate you to improve. It also builds team cohesion as you help each other improve areas of weakness.	Identifying each other's strengths and weaknesses; for example, being good at medications and communicating with patients, requires improvement in managing patient workload and dressings. " What do you feel are your strongest and weakest areas of clinical practice?" "What aspects of nursing do you feel you are good at?" "What areas do you feel you could improve on?"
Identity students' triggers for stress	It is crucial to identify the triggers that might affect a student's academic, social, emotional, and behavioural status during their practice placements. Academic stressors, interpersonal stressors, and environmental stressors influence students' health and feeling of psychological safety during their practice placements.	For example, a student could state, if I do not hand over completely before we finish, I lay in bed at night wondering did I do this, did I sign that form etc. To avoid this, ensure to include students in the handover process, thank them for their days' work, and enjoy their evening. Alternatively, another student may find speaking to a packed room in handover extremely stressful. Work with the student to overcome this, maybe start with one patient and then build it up to complete handover.

Continued Student Relationship

Steps	**Rationale**	**Examples**

Conduct frequent touchpoints	Frequent interactions are more effective than long, infrequent ones. Frequency builds and strengthens connections.	Have short daily one to one meetings to provide oral feedback to students instead of 2-to 3 long formal NCAD meetings. Touch base with your student throughout the day, agree on 3-4 check-ins per shift, keep communication open and create a safe environment to ask questions.
Model a positive mindset to learning.	This makes learning a collaboration (you will learn from the student also).	Share something new that you learned to demonstrate that learning is ongoing and that you do not know everything, thus putting the student at ease and creating a psychologically safe environment.
Get to know their preferred working style.	Encourages effective teamwork and reduces the risk of conflict.	What way shall we plan our day? Do you prefer to take four patients each, or shall we team nurse and break up the workload for all eight patients?
Share past mistakes.	Creates a culture to discuss mistakes without blame or repercussions. Reduces students' stress if an error does occur, thus improving their learning experience. Sharing mistakes also creates vulnerability, thus further connecting student and nurse relationships.	Stating that every nurse is likely to make a mistake at some point in their career, providing an example.
If a student makes a mistake, do not judge or reprimand them. Reinforce their effort into achieving the skill, highlight how it can be improved, and ask how you can help them achieve this.	Making mistakes during placements should be a learning opportunity to improve your students' practice. Reinforcing their effort and highlighting areas for improvement will help create a non-judgemental, fear of failure teaching environment for your students.	“Well done on administering your first sub-cut injection. You did a great job following the ten rights and putting the patient at ease; make sure next time you bring the sharps bin right over to the patient; you increase the risk of a needle stick injury if you leave it on the bedside table. Overall, well done. You did a great job”.

Express gratitude and appreciation towards students for their input to the team	This further helps establish an inclusive and appreciative environment where the student feels valued and part of the team, resulting in a positive clinical learning environment.	Sometimes, something as simple as a 'thank you goes a long way! “Thank you for all your work today. I would not have managed without you. We work well together as a team. I appreciated all the work you did”. “Your compassion, optimism and kindness to your patients do not go unnoticed....”
Demonstrate learning empathy	Understanding and stating that you know what one student might find easy another may struggle with. You also appreciate that students have a lot to remember and that you remember being a student and being worried and stressed will help create a psychologically safe learning environment for the student as your level of understanding and empathy will put the student at ease.	“I want you to know that I remember what it is like to be a student, so please do not be afraid to ask me questions or show you something again if you do not get it the first time. I know how students feel overwhelmed and stressed at times. Let me know if you feel like that in any way, and we will work together to sort it out”.
Admit when you do not know something	Being open and admitting you do not know something creates trust between you and your student, creating a stronger open and transparent relationship and, therefore, a positive learning environment.	“I should know what this medication is for, but to be honest, I cannot remember. Let us look it up together so we can learn together”.
Ask the student for feedback and embrace it	Asking students for feedback creates a bidirectional feedback opportunity that helps reduce hierarchical relationships creating an equal relationship where both parties’ views are appreciated and an opportunity to reflect and improve for future practice.	“Did you learn everything you feel you set out to learn on this placement? Is there anything I could have done differently as your preceptor to better your clinical placement? Did you feel the frequency and level of feedback you received were suitable to help you achieve your learning goals? “

Offer support to a student you can see is struggling	Offering support creates psychological safety as it shows the student that you care about the student and their education.	Talk to your students. What are they struggling with outside of the classroom? Are they overwhelmed by work or family commitments? Perhaps they could use some coaching around time management. Or, a more difficult question involves asking for an honest answer about how much effort they are putting into studying

General Rules

Steps	**Rationale**	**Examples**
Physically face students when talking to them, make eye contact	Making eye contact helps both preceptor and student or patient focus on the conversation, and reading facial expressions can improve understanding, thus significantly improving communication and personal connections.	Please do not write your notes as you speak to your student. Please stop what you are doing, face them and make eye contact.
Use appropriate humour	Humour is a subjective emotional response, which has multi-dimensional value in preceptorship relationships, including bonding on a personal level, developing team cohesion, the release of dopamine that can promote positive thinking, creativity and reduce stress hormones increasing a person's ability to cope, enhance memory, increase self-esteem, optimism, and vigour. Humour can be a helpful coping strategy and help reframe and defuse a problem by putting it into perspective. However, humour is inappropriate in psychological crises and emergencies.	Appropriate humour can be a positive distraction, for example, when undertaking a clinical procedure such as a wound dressing or personal care, putting the student and the patient at ease.
Be aware of your nonverbal cues	Be careful that you do not send nonverbal cues that communicate exclusion.	Eye rolling, fidgeting, drumming your fingers, looking bored or away or allowing yourself to be distracted in the middle of a conversation.

Never compare your student to another student	When preceptors compare one student to other students, they typically compare what they lack to another student. This is not productive as it can be a biased comparison and will not help the current student achieve their goals.	"My last 4th-year student had no problem inserting an NG tube. Why is it that you cannot? I had expected you could complete this simple skill".
Avoid exclusive patterns of social interaction (i.e., just with qualified nurses) as this will exclude students.	This creates invisible sociable barriers and a sense of exclusion. Be inclusive of the entire team.	Do you tend to interact with the same people outside what is required of your role? For example, do you always go to breakfast with the same nurses? Would you invite your student on the break with you? Avoiding this pattern of social exclusion leaves the invite open to all.

8.7 Discussion

This paper outlines guidelines for preceptors to provide a psychologically safe learning environment for their students (Table 14). These guidelines were recently incorporated into an innovative preceptorship education programme accredited by the Nursing and Midwifery Board of Ireland (NMBI), focusing on developing preceptors' interpersonal and communication skills relevant to student teaching and learning (Hardie *et al.*, 2022). Implementing these guidelines could help preceptors establish a standardised approach to providing a psychologically safe learning environment for their students. More research is required to determine the impact of implementing these guidelines from the perspective of preceptors and the perspective of students on creating a psychologically safe learning environment following completion of the new educational programme.

8.8 Conclusion

Psychological safety is an essential component of an effective nursing preceptorship. It is evident from the available literature that psychological safety plays an essential role in ensuring a positive and productive learning experience for students in the clinical learning environment. It is vital that students feel safe to ask questions and

verbalise areas of clinical practice that require improvement without fear of judgment or repercussions for their clinical assessment documents. Key attributes preceptors must display are openness, inclusivity, effective interpersonal and communication skills, and a collaborative approach to creating a psychologically safe learning environment for students. Learning in a clinical context is foundational in training all health professionals. While the focus of this paper was applied to creating a psychologically safe learning environment within a nursing preceptorship. Preceptorship and mentorship are implemented in medical and physiotherapy education also. Therefore, the authors argue that these principles and guidelines could be adapted and applied to suit different health professional training programmes.

Chapter 9: Discussion

9.1 Introduction

The previous chapters presented the methods and findings from this multiple-method EBCD study. In this chapter, the study findings will be discussed in relation to the research aims and the current evidence-base regarding nursing preceptorships. This chapter will present the current study's original contribution to existing knowledge of EBCD and this project's unique adaptation to create an educational intervention in nursing education. Furthermore, the process of conducting an EBCD project online will be discussed. The findings are also interpreted in the context of relevant theoretical and empirical literature to provide an explanatory framework for the key findings. The chapter concludes with the strengths and weaknesses of the study and its implications for future practice research and policy implications.

9.2 Addressing the research aims

A primary aim of this research was to understand the individual experiences of SPP in nursing preceptorships by identifying key "touchpoints" to determine what SPP liked about their experiences, what worked well for them in generating positive interpersonal relationships or what caused anxiety or adverse reactions in the professional relationship. Secondly, the aim was for the SPP to collaborate with nursing, educational and design experts to co-design and co-produce a new educational programme based on experiential and scientific knowledge utilising an EBCD process.

In addressing these aims, a literature review examining the interpersonal relationships of a nursing preceptorship identified several key themes that influence preceptorship relationships, including orientation, personal qualities, feedback, and workplace incivility. Furthermore, a systematic scoping review was conducted to examine current practices in nursing preceptorship educational programmes. A content analysis of educational topics within preceptorship programmes identified a limited focus on developing interpersonal and communication skills. Furthermore, the review highlighted the lack of patient representatives in developing educational programmes and a lack of focus on the patient within the programmes. The results from these

reviews provided key insights that informed the co-design of the new educational programme.

Moreover, two pilot studies conducted by the lead researcher examining the application of an active blended learning programme and immersive virtual reality storytelling in nursing education informed the innovative design and structure of the new educational programme. The first pilot study identified that the application of RLO's prepared them to actively engage in a simulation laboratory following their completion. The second identified that VR storytelling is a memorable and engaging learning experience that enables students to visualise and better understand abstract concepts. Both studies indicated that a similar approach could be adopted in preceptorship education programmes and informed the co-design of the new educational programme.

Adapting the EBCD methodology facilitated the development of a human-centred educational programme that combines experiential knowledge (touchpoints) and scientific knowledge (expert/literature knowledge). The results of this study have produced an innovative blended learning preceptorship education programme. The study further added to the literature and identified key IP & C skills required for nursing preceptorship relationships. Most notably, it addressed a major gap identified in the scoping review; this project included patients' voices and stories, as well as students and preceptors, in order to provide preceptors with the knowledge and skills necessary to effectively carry out their roles as preceptors and improve interpersonal relations in nursing preceptorships. Furthermore, as part of the new educational programme, innovative tips for providing a psychologically safe learning environment in a nursing preceptorship were established that could influence preceptors' abilities to create inclusive and empowering learning environments for their students. Table 15 below summarises the research aims, details the methods utilised by each study, the results and outlines the contribution of each to the field of preceptorship education.

Table 15. Research outline, a summary of findings and contribution

Overarching Aim	Understanding Preceptorship Relationships and Examining Current Preceptorship Education Programmes to Co-Design and Co-Produce a new educational programme				
Thesis section					
Chapter 2: Unpublished Literature Review	Chapter 3: Scoping Review Submitted to Nurse Education in Practise	Chapter 5: Pilot Study Published in Teaching and Learning in Nursing	Chapter 6:Pilot Study Published in BMC Nursing	Chapter 7:Methods & Results Published in BMC Research Involvement & Engagement	Chapter 8: Results Submitted to BMC Medical Education
Aims					
Develop an understanding of the lived experiences of preceptorship relationships	Examine and synthesise the literature on developing interpersonal and communication skills in general nursing preceptorship education programmes.	To examine the application of reusable learning objects (RLO) in preparation for a face-to-face simulation laboratory.	To investigate the subjective experience of using an immersive virtual reality storytelling experience as an active pedagogy.	To implement an EBCD process to co-design and co-produce an innovative educational programme for developing interpersonal and communication skills among nurses who act as preceptors.	To highlight key tips to providing a psychologically safe learning environment in the clinical setting
Methods					
Literature review using a narrative synthesis	Systematic scoping review using a narrative synthesis and conceptual context analysis	An evaluative case study applying both quantitative (questionnaire) and qualitative (open-ended questions) using a descriptive data analysis and deductive thematic analysis.	Triangulation of statistical and thematic analysis from survey and observation studies.	A multi-method project includes one-to-one interviews and collaborative co-design workshops to facilitate the iterative design and development of the new educational programme.	Detailed examination of the literature and current practices of psychological safety to inform the design of new innovative tips in collaboration within the field of psychological safety.
Contribution					
It identified key influencing factors that impact the interpersonal dynamics of a nursing preceptorship.	It identified a limited focus on developing interpersonal and communication skills associated with nursing preceptorships and the	Identified that students stated the RLO prepared them to actively engage in the simulation laboratory following their completion and rated it as a	Identified that VR storytelling is a memorable and engaging learning experience that enables students to visualise and	A blended learning programme consisting of three core elements 1) 6 online reusable learning objects, 2) 2 role-play simulations, and 3) a virtual	Recommends innovative tips for creating a psychologically safe learning environment as a preceptor that can be included in

Including these factors in preceptorship education programmes can help highlight positive and negative factors that influence preceptorship relationships, including essential interpersonal and communication skills.	lack of patient representative in preceptorship education programmes. It identified influencing factors that may explain this result, including the design and development of programmes, key learning outcomes and pedagogical approaches.	productive learning experience, indicating that a similar approach could be adopted in preceptorship education programmes.	better understand abstract concepts. Thus, VR storytelling could be adopted in preceptorship education programmes to create unique and engaging content.	realty storytelling simulated experience. Designed to develop preceptor's interpersonal and communication skills required with nursing preceptorship relationships.	preceptorship education programmes.

9.3 Identifying key touchpoints in nursing preceptorship

The first question in this study sought to gain insight into SPP touchpoints, i.e., personal or crucial memories that shape experiences of nursing preceptorship relationships, to identify key experiential knowledge that later informed the co-design of the new educational programme. As discussed in Chapter 7, similar touchpoints influence the experience and interpersonal relationships from all SPP perspectives, including first impressions, effective communication and feedback. In the next section, the touchpoints of SPP will be examined further.

9.3.1 Student touchpoints

This study also found that preceptors' attitudes to teaching strongly influence students' preceptorships. These results reflect those of Nyhagen & Strom (2016); Roberio *et al.* (2021); Omer & Moola (2019); Wang *et al.* (2018), who found that high levels of commitment and passion for teaching are fundamental to generating effective interpersonal preceptorship relationships and positive clinical learning experiences for students. A possible explanation a preceptor's passion and engagement in teaching has on the relationship could be the motivation and engagement it typically sparks in students, thus generating a mutual commitment to the relationship and students' clinical learning experience.

This study also supports evidence from previous studies Allen & Molloy (2017); Bates *et al.*, (2013); Gardiner & Sheen, (2017); Plathe *et al.*, (2021); Myers & Chou (2016) that feedback from preceptors plays an essential role in students preceptorship experiences. The language associated with feedback presented a highly influential touchpoint in this study, with students describing how constructive language decreases students' anxiety and improves interpersonal relationships and student learning. Thus, this study further supports the idea that constructive feedback using appropriate language is instrumental in creating a supportive and caring relationship that creates a sense of safety for students in their learning.

Lastly, students described the importance of feeling safe to learn as a crucial touchpoint in this study. The presence of psychological safety positively influenced the

relationship, but when absent led to feelings of fear and intimidation, resulting in a confrontational relationship and a negative learning experience. Workplace incivility and interpersonal conflict are significantly associated with a lack of psychological safety. These results corroborate the findings of previous studies that found workplace incivilities, such as bullying (Minton *et al.*, 2018) or passive-aggressive behaviours (Patel & Chrisman, 2020), results in students feeling intimidated, on edge, sometimes invisible and high levels of anxiety (McCloughen & Foster, 2017; Mammen *et al.*, 2018; Minton *et al.*, 2018, Omer & Moola, 2019).

9.3.2 Preceptor Touchpoints

The ability to create a safe learning environment for students was also a critical touchpoint for preceptors in this study. Preceptors indicated the importance of an open and collaborative relationship so that students feel safe to ask questions, make mistakes or seek clarification without fear of reprimand or humiliation. A possible explanation for the importance of psychological safety was from the preceptor's own experiences as students who experienced the negative impact the lack of psychological safety can have on students learning and mental health. To the researcher's knowledge, there are currently no studies directly examining the provision or impact of psychological safety in nursing preceptorships.

On the same note, preceptors in this study acknowledged socio-cultural factors such as workplace incivility as a critical negative touchpoint in nursing preceptorships and highlighted its impact on psychological safety. Similar to this study, socio-cultural factors such as different cultural backgrounds resulting in language and cultural barriers (Omer & Moola, 2019) or a hierarchical culture resulting in the inability to ask questions (Hanson *et al.*, 2018), and fear of their preceptor (Lee *et al.*, 2018), resulting in hostile or resentful behaviour towards students have been identified.

Another critical negative touchpoint preceptors reported are time constraints due to the heavy workloads and the impact precepting can have on their core function of patient care. Nurses pointed out that providing preceptorship meant extra work on top of their everyday tasks. Because of this, preceptors voiced that they often could not devote sufficient time to students, hindering relationship-building. These results agree

with those obtained by Burt *et al.* (2022); Mhango *et al.* (2021); Jönsson *et al.* (2021), who also found that time constraints prevented many preceptors from having adequate interactions with the student nurses.

9.3.3 Patients Touchpoints

As discussed in Chapter 7, patient co-designers described the importance of being made feel welcome by a preceptor/student with an open and welcoming disposition as a critical touchpoint that positively influenced their experience. The patient co-designers strongly emphasised person-centred communication as an influential touchpoint, citing its importance in facilitating a better patient experience and patient satisfaction. Previous research on patients' healthcare experiences has noted the same (Dempsey *et al.*, 2014; Lang, 2012; Kennedy, 2014; Rapport *et al.*, 2019), reporting effective communication and high-quality patient information can result in better patient outcomes and patient satisfaction. Notably, patients in this study emphasised the importance of continued communication and personal interactions beyond their care. It made them feel like they were being treated like humans, not patients and were part of the team. These findings support the idea that patients want to know what will happen next with their care and to be reassured that they are looked after like a person and not another patient in the bed (Anna *et al.*, (2022); Larson *et al.*, (2019); Rapport *et al.*, (2019)). Patient-centred communication can reduce patients' uncertainty, enhance patient engagement in their care and improve patient satisfaction (Kwame *et al.*, 2021). Therefore, this study further supports the strong correlation between nurse/student engagement and communication with the patient and the patient experience. However, it also suggests further educating nurses on motivating factors and identifying dissatisfaction factors for improved patient satisfaction and outcomes, particularly in a nursing preceptorship scenario.

9.4 Key educational topics for inclusion in preceptorship education programmes

The SPP's touchpoints' strong influence on the educational topics SPP and experts selected for the new educational programme was observed in Chapter 7. SPP

touchpoints specified key concepts and overarching target behaviours to include in the educational programme (Appendix H).

Perhaps the most striking finding is the focus both students and preceptors placed on the importance of including psychological safety in the new educational programme. A possible explanation for this might be that having psychological safety leads to collaboration, positive student learning experiences and effective patient care. Only seven of the twenty-three programmes outlined in Chapter 3 referred to fostering a positive learning environment (Good, 2021; Jeggels *et al.*, 2013; Parker *et al.*, 2012; Potter *et al.*, 2017; Tuomikoski *et al.*, 2020; Condrey, 2015; Wu *et al.*, 2020), suggesting that the majority of programmes do not emphasise psychological safety skills development. Moreover, Chapter 8 identifies a gap in the literature regarding guidelines for providing a psychologically safe learning environment in the clinical setting. To address this gap, the co-design team established innovative tips that will be implemented as part of the new educational programme and available to a broader audience from their publication (chapter 8). It is hoped they can influence preceptor's abilities to create inclusive and empowering learning environments for their students.

The co-design team established that providing the foundational principles and theoretical underpinnings of IP & C skills was important to contextualise the concepts prior to their application to nursing preceptorship. As previously outlined in Chapter 3, it is difficult to determine the focus on IP & C skills development in current preceptorship education programmes. No programmes explicitly state foundational principles and theoretical underpinnings of IP & C skills are included as part of the programme. Preceptors require this foundational knowledge, those without may have difficulty before they can begin to apply and evaluate the concepts in their role as a preceptor. This study, therefore, addresses this gap.

The co-design team also established the concepts of first impressions and orientation as essential principles in the new educational programme. Contrary to the literature and participants of this study, the concepts of first impressions and orientation do not appear to hold a strong focus in current preceptorship education programmes. Several programmes imply the development of such skills under the programme learning outcomes such as facilitating education in the clinical environment (Condrey, 2015;

Good, 2021; Kang *et al.*, 2016; Potter *et al.*, 2017) or effectively managing a preceptor-student encounter (Jeggels *et al.* 2013) and setting learning goals as part of the orientation process (Tuomikoski *et al.*,2020). The literature suggests that many programmes overlook the importance of these foundational skills. To address this gap, this study has incorporated these essential skills as part of the new educational programme to help lay the foundations for positive interpersonal relationships in the preceptorship.

Another important finding from this study was the focus SPP and experts placed on including practical IP & C skills required for teaching in the clinical environment. This resulted in the inclusion of effective teaching strategies such as the one-minute preceptor model (Gatewood *et al.*, 2020), five-minute preceptor model (Bagioni *et al.*, 2020) and teaching procedural skills (Burgess *et al.*, 2020), as well as practical communication skills for effective teaching in the new educational programme. This study is consistent with the broader literature (chapter 3) that established that many preceptorship programmes place emphasis on teaching strategies. However, it is difficult to determine if any emphasis is placed on the patient's involvement or perspectives. To address this limitation, specific guidance based on the broader literature and expert advice and opinions from the co-design team from this study are provided in the new programme. For example, the patients in this study emphasised the importance of a preceptor asking permission for the student to observe or partake in a teaching session before the student is in the room. Such viewpoints are now included in the new educational programme.

In comparison to several available preceptorship education programmes (Heffernan *et al.*, 2009; Myrick *et al.*, 2011; Tuomikoski *et al.*, 2020; Wu *et al.*, 2022a), feedback was also identified by the co-design team in this study as an essential concept. This might be explained as it has been established that incorporating feedback is necessary to facilitate psychologically safe student learning experiences and develop positive interpersonal preceptorship relationships (Johnson *et al.*, 2020). Students and preceptors in this study expressed the importance of practical IP & C skills required for providing feedback. Most notably, the importance of bi-directional feedback opportunities to ensure students feel they can also provide preceptors feedback and

share their ideas. As a result, the inclusion of feedback models such as the Ask-Respond-Tell feedback model (French et a., 2015) & Bidirectional Feedback model (Myers & Chou, 2016) in the new educational programme. Furthermore, students in this study expressed the detrimental effect receiving negative feedback in a rude manner or inappropriate locations (i.e., in front of the patient) has on the students learning experience but also their confidence in their abilities as a nurse. Similar findings were reported in the literature, with students describing distressing and sometimes humiliating feedback experiences, including being yelled at in front of a large group (Gardiner & Sheen, 2017) and belittled due to a lack of skill set (Omer & Moola, 2019) or receiving negative feedback in front of a patient (Foley *et al.*, 2012). The scope of available information on the patient's experiences and views of involvement in the feedback process is limited. Patients from this study expressed their wish to be involved in asking the students questions and providing feedback following their consent. Patients articulated a similar view to the students, that negative feedback should not be provided in front of the patient. Patients expressed that it was uncomfortable and felt sympathy for the students. Highlighting these elements as part of the new educational programme is critical to assisting preceptors in understanding the negative impact it can have on students and patients.

Lastly, conflict resolution was identified as an essential educational topic for the new educational programme. Several factors led to its inclusion, including observations or experiences of interpersonal conflict or workplace incivility witnessed or experienced by all SPP in this study. The patients' experiences or perspectives of conflict in a nursing preceptorship are currently lacking in the literature. This study explored the patient's perspective to address this gap. Key findings included patients feeling uncomfortable, vulnerable, sympathy for students, uncertainty in the nurse's character and anger following such events. The literature suggests that several preceptorship education programmes currently incorporate the concept of conflict resolution (Good, 2021, Liao *et al.*, 2019; Nelson *et al.*, 2012; Tucker *et al.*, 2019, Blum, 2009). However, there appears to be a lack of available guidance on conflict resolution skills within a nursing preceptorship. To address this gap, the co-design team established innovative guidelines for preceptors to manage and resolve conflicts with student nurses. These newly established guidelines will be implemented as part of the new educational

programme, and the researcher aims to publish these guidelines post-doctoral (Appendix J). The inclusion of the patients' perspectives in the new educational programme will further address the gap in current programmes.

9.5 Pedagogical approaches to preceptorship education programmes

As discussed in Chapter 7, the co-design team from this study established that a blended learning approach best suited the new preceptorship programme. In nursing education, blended learning programmes have been shown to effectively teach theoretical and practical skills (Chung *et al.*, 2022; Jang *et al.*, 2016; Hardie *et al.*, 2021). Cited benefits of RLOs include their ability to present theoretical content interactively and promote autonomous learning that can provide on-the-spot feedback (Redmond *et al.*, 2018; Windle & Warrad, 2010). Cited benefits of role-play simulations in nursing include increases in empathy (Brunero *et al.*, 2022; Walsh, 2020), an opportunity to practice IP & C skills in a safe and supportive environment (Kerr *et al.*, 2022) and value in peer feedback that occurs (Powers *et al.*, 2019). VR storytelling offers new learning methodologies by exposure to experiences that confront learners with real-world situations or convey previously intangible concepts (Schuelke *et al.*, 2022). It offers learners a memorable and engaging learning experience (Hardie *et al.*, 2020). Therefore, this project designed a programme that consists of RLOs, role-play simulations, and a state-of-the-art VR storytelling experience to create an active blended learning programme.

Constructivist learning theories guided this project. Constructivism is a theoretical foundation that supports learning and knowledge construction through collaboration and reflection (Kritt & Budwig, 2022). It is influenced by the work of Piaget and Vygotsky, which encourages learners to build their own body of knowledge based on individual experience and apply it directly to their environment (Veraksa *et al.*, 2022). Technology is crucial in facilitating constructivist approaches and creating engaging and collaborative learning environments that are learner-centred and authentic (Kala *et al.*, 2010). Constructivism advocates for students to be active in the learning environment, develop social and interpersonal skills, enjoy learning, understand the content being taught, and learn to think efficiently through on-the-spot feedback and reflection (Hussin *et al.*, 2019; Wang, 2022). Therefore, this study developed a series

of RLOs and simulations based on a constructivist approach. The information provided in the RLOs enables learners to embark on a journey of discovery and acquisition of new knowledge regarding IP & C skills in a nursing preceptorship. The RLO self-reflective activities teach learners to connect prior knowledge with new information and develop a new understanding of the information presented. The face-to-face simulations are designed to help students build their knowledge through hands-on interaction, in which the learner is permitted to apply the theoretical knowledge covered in the RLOs to role-play simulation followed by a structured debriefing session.

It is evident from Chapters 3 scoping review, emphasis is placed on pedagogies that involve active participation where students are offered an experiential learning opportunity as they 'learn by doing' in preceptorship education programmes. Equally, the principles of experiential learning theory guided the design of the new educational programme. Experiential learning is based on Dewey's philosophy of learning by doing, which emphasises learning through participation in reflection and practice sharing (Kolb,2014). Kolb's experiential learning theory has been extensively proven effective in nursing education (Hill, 2017). Therefore, this project included self-reflective exercises throughout the programme to enhance preceptors' self-understanding of practical IP & C skills and foster their ability to facilitate positive interpersonal preceptorship relationships and create a psychologically safe learning environment for students. Equally structured debriefing sessions in the new programme facilitate guided reflective sessions and practice sharing.

As discussed in Chapter 7, the co-design team also utilised Universal Design for Learning (UDL) principles when designing the new blended learning programme. In line with previous studies examining the effect of UDL on blended learning programmes (Celestini, 2022; Davis *et al.*, 2022), this study found that applying UDL principles helped ensure that the new educational programme provided opportunities for diverse and inclusive learning. It ensured that the new programme included educational strategies that the learners had multiple means of engagement, representation, action, and expression (Ahead, 2017). (See chapter 7 for more detail). As the literature indicates, adopting UDL principles in nursing courses is imperative to

support a diverse educational community and an inclusive approach to academic excellence (Burgstahler, 2021; Coffman & Draper, 2022). By applying the UDL framework, it is hoped this new educational programme will provide a flexible programme with various educational practices that will help meet the individual educational needs of the diversifying preceptor workforce.

Finally, in line with previous nursing educational programmes (Dennis, 2021; Manchester *et al.*, 2014), this programme adopted Lewin's change management theory to design a programme that supports preceptors through discovering and developing their preceptorship practices. The programme facilitates preceptors to identify areas of strength in their IP & C skills and resistances they may encounter in the clinical environment to change in their practice. Furthermore, the new programme's implementation design is guided by Lewin's change model, which identifies implementation barriers. For example, the difficulty in releasing preceptors from the wards in order for them to complete a full day's training. As a result, a blended learning programme was created to provide a flexible educational program that allows preceptors to complete the theoretical components of the program on their own time and then apply this new knowledge in a half-day face-to-face training session. Similarly, the new program's implementation is guided by Lewin's moving phase, in which the lead researcher will facilitate train the trainers' educational days and ensure that all program materials are readily available.

9.6 Applying EBCD to create an educational intervention in nursing education

To the best of researchers' knowledge, there are currently no published papers examining the application of EBCD to co-design and co-produce an educational intervention within the context of nursing education. Therefore, this study adds unique insight into implementing an EBCD method to develop an educational intervention. Moreover, this study adds insight into facilitating an EBCD project online.

As discussed in Chapter 7, this project's adaptation of the EBCD approach yielded unexpected benefits and created a clear process for co-learning to create an educational intervention utilising an EBCD methodology. This study confirms that

touchpoints are crucial to unlocking everyday experiences (Bate & Robert, 2007) and sparked a highly collaborative process amongst the co-design team when shared (Bate & Robert, 2016). This project's approach to embedding the touchpoint narratives throughout the new educational programme signifies an innovative approach to utilising touchpoint narratives beyond the initial design phase of an EBCD intervention and creating an authentic educational programme.

Moving the project online overcame frequent criticism of EBCD in that its implementation is typically applied to a single site location (Donetto *et al.*, 2015). It also assists in reducing costs, which can be an inhibiting factor in implementing EBCD (Green *et al.*, 2020). In line with recent studies (Beresford *et al.*, 2021; Garcia Martinez *et al.*, 2022), this study found that adapting this method online reduced the barriers and costs to participation from multiple site locations. Thus, providing a broader population view and increasing the transferability of knowledge gained throughout the project beyond a local setting (Fylan *et al.*, 2021). Saved costs by applying an online method were realigned to developing the new educational programme.

Furthermore, continued engagement from the co-design team is reported as difficult throughout EBCD studies (Donetto *et al.*, 2015). However, hosting co-design workshops online encouraged engagement from the co-design team at every stage of the project, as they could participate at home. Equally, the digital co-design workshops helped overcome power imbalances that may be experienced when co-design workshops are hosted in a clinical setting (Kennedy *et al.*, 2021).

It is known that people have shorter attention spans when communicating and collaborating in a digital environment (Campo, 2022). This is an important consideration when designing co-design workshops. This study followed the principles outlined by Zhu *et al.* (2021) through three phases to ensure active participation in the co-design workshops:

1. Exploring, i.e., looking for group touchpoints.
2. Brainstorming entails identifying critical moments within the touchpoints and determining how to address them.

3. Designing, that is, creating an educational intervention to address the identified critical moments.

In keeping with previous recommendations (Bielinska *et al.*, 2022), this project aimed to reduce the risk of digital exclusion. It is crucial to provide information to all participants on software that will be utilised throughout the project; for example, information was provided on the online interactive software Padlet (https://padlet.com/) utilised during the co-design workshops. Providing clear instructions ensured co-designers could communicate and express their views at ease. Co-designers were also offered the opportunity to practice using the software with the researcher prior to the co-design workshop.

In summary, the results from this study suggest that it is possible to create an authentic educational programme utilising an EBCD methodology. It also suggests that facilitating an EBCD project online is possible using technology, given adequate preparation and participant education.

9.7 Implications of the research

9.7.1 Implications for preceptorship education

Chapter 1 outlined a new mandatory online preceptorship programme, "Preceptorship in Practice" that was recently launched in Ireland (HSEland, 2022). A primary focus of the HSE programme is the preceptor's role in assessing student competency and its associated documentation. Limited focus is placed on the practical skills required to facilitate a positive clinical learning experience, including practical interpersonal and communication skills associated with teaching and feedback, and the patient is not mentioned throughout the programme.

This new preceptorship education programme addresses some of the current limitations. Including the patient voice and perspective throughout the program is particularly noteworthy. It also addresses key concerns for students and preceptors: creating a psychologically safe learning environment, practical interpersonal skills and

language to use when providing feedback, which appears to be lacking in many preceptorship education programmes.

NMBI policy recommends that preceptors undertake a preceptorship education programme every 2-3 years (NMBI, 2020). The preceptorship education programme designed in this study was recently approved as a Category 1 approval (CEU 8 points) by NMBI until Jun 2024. Therefore, it is hoped this new educational programme can support ongoing professional development and be implemented as a preceptorship update course in conjunction with the new national programme. It is hoped that this new educational programme will influence NMBI policy to ensure preceptorship programmes facilitate preceptors to reflect on their practice and develop their interpersonal and communication skills. As a result, it is hoped that preceptors will facilitate positive interpersonal preceptorship experiences and create a positive clinical learning environment for their students.

9.7.2 Implications for preceptorship practice

The level of preceptor's education can play an essential role in developing awareness and integrating professional values into their preceptorship practice. Understanding and addressing students', preceptors' and patients' unique challenges in preceptorship relationship-building is vital for students' clinical learning experience and patient care. Students with positive interpersonal relationships with their preceptor report positive clinical learning experiences resulting in competence development and better patient outcomes (Rosli *et al.*, 2022; Alonso *et al.*, 2022). Moreover, successful preceptorship programmes have proved beneficial in retaining staff nurses and students (Jönsson *et al.*, 2021; Taylor *et al.*, 2019).

Encompassing Lewin's change management theory, this programme aims to act as a driving force to create a new perspective on nursing preceptorships. For instance, it aims to include the patient when discussing or describing nursing preceptorship relationships. Moreover, it aims to improve the knowledge and practice of interpersonal and communication skills required in a nursing preceptorship. As previously highlighted, the patient is currently excluded from much of the literature and preceptorship education programmes. Therefore, it is hoped that by incorporating the

SPP touchpoints throughout the new educational programme, different aspects of SPP experiences that may be invisible to other members of the SPP group are portrayed, i.e., the patient perspective. It is hoped that nurses who complete the programme will be a driving force for change in practice. Furthermore, this study indicates that when challenges hindering preceptorship relationships are identified, preceptors should implement evidence-based strategies to build or improve their relationships with their students and patients. Education may enhance the capacity of preceptors to build positive interpersonal relationships, particularly in the context of a nursing preceptorship, by including these evidenced practices in the new educational programme.

Subsequently, improving preceptorship relationships will have a beneficial effect on preceptors as well as students. Preceptors have reported that when they have a positive preceptorship experience, they feel it is rewarding and motivated to continue providing further positive preceptorship experiences and exemplary patient care as they act as role models for their students (Bryan & Vitello-Cicciu, 2022; Stănesu-Yadav & Lillekroken, 2022). As a result, there is an increase in patient satisfaction and the development of competent student nurses and preceptor job satisfaction. Moreover, increased preceptor and student satisfaction will result in staff retention.

9.8 Strengths and Limitations

As described in Chapter 7, a significant strength of this study is the multiple methods design of the research. Applying multiple qualitative and quantitative methods increases the robustness of the results as cross-validation was achieved when different data sources (literature/narrative descriptions) converged and were congruent. Moreover, participants of this study were afforded the opportunity to reflect on their views and experiences of nursing preceptorship throughout the highly collaborative co-design process. Hosting one-on-one interviews and co-design workshops virtually enabled broader demographic participation and increased transferability compared to a study conducted at a single hospital location. However, some limitations must also be noted.

Unfortunately, due to Covid-19 constraints, observational studies of the interpersonal dynamics of a nursing preceptorship could not be conducted in any hospital during the project's early stages. Direct observations could have provided more information about behaviours and interactions. This limitation was addressed by conducting a thorough literature review, which identified and supported several key themes conducive to developing positive and negative interpersonal relationships in a nursing preceptorship.

Despite the fact that a diverse sample of SPP and professionals was recruited, the majority were female and of Irish nationality. An equal gender balance and representation of other diverse nationalities working in and using general nursing hospitals in Ireland would provide a more accurate representation of cultural experiences and attitudes toward nursing preceptorship relationships.

This study focused on nursing preceptorship in general hospital settings. Preceptorship is also used in Midwifery, Children's Nursing, Community Nursing and Mental Health Nursing. As a result, one current limitation of the new educational program is that it is not currently suitable for all disciplines. This study, however, suggests that the EBCD method could be used and adapted to create a similar program for other disciplines.

9.9 Suggestions for future research

This is the first study to explore the triadic members of a nursing preceptorship (SPP) led EBCD of a new educational intervention. Replicating this study in other divisions of preceptorship and nursing education, such as care of older person education or surgical nursing education, would help to understand if the findings are generalisable and if EBCD is a suitable framework for co-design and co-development of other nursing education programmes and curricula. Furthermore, examining the co-designers' experiences of partaking in this study could provide further insight into effective EBCD practices or limitations to creating a new educational programme.

This work informs future research developments in preceptorship education and practice. Examining the experiences of those who have completed the new

educational programme could provide constructive feedback to develop the programme further. Furthermore, investigating the impact of the new educational programme on preceptors' self-reported IP & C skill development could demonstrate the new programme's efficacy and preceptors' perceived benefits to their preceptorship practices. Furthermore, this study identified a lack of evidence regarding the provision of psychological safety with a nursing preceptorship; therefore, examining practices after exposure to the innovative tips in Chapter 8 could add unique insight to the literature.

This is the first study to explore the EBCD of a new educational intervention. Replicating this study in other divisions of nursing education, such as care of older person education or surgical nursing education, would help to understand if the findings are generalisable and if EBCD is a suitable framework for co-design and co-development of other nursing education programmes and curricula. Furthermore, examining the co-designers' experiences of partaking in this study could provide further insight into effective EBCD practices or limitations to creating new educational programmes.

9.10 Key recommendations

- Given adequate preparation and participant education, EBCD projects can be facilitated online to capture a broader population view and increase the transferability of knowledge gained throughout the project beyond a local (single) setting.
- Embedding touchpoint narratives throughout an educational intervention helps create an authentic person-centred curriculum that highlights real-world experiences. Reflecting on the touchpoints allows learners to see situations from different perspectives and better understand preceptorship practices.
- Including patient experiences and perspectives in preceptorship education programmes is essential to ensure their perspectives are better understood and address the current gap in many preceptorship education programmes.
- Implementing VR Storytelling as an active pedagogy enables students to visualise and better understand abstract concepts or experiences previously

not possible through traditional simulation methods, e.g., stepping into someone else's shoes from a first-hand perspective.

- Applying a Universal Design for Learning (UDL) approach to designing a blended learning programme better supports a diverse educational group, creating an inclusive approach and, therefore, a rich learning experience for all.
- Implementing a blended learning preceptorship educational programme facilitates autonomous learning at home and also provides a safe learning environment to practice new knowledge before precepting in the clinical environment.
- Implementing a blended learning preceptorship educational programme helps nurse educators tackle the time constraints of releasing preceptors from the clinical environment by reducing the required face-to-face teaching time.
- Implementing a preceptorship educational programme focusing on IP & C skills development is central to creating a psychologically safe learning environment. Thus, improving skills and satisfaction among students and nurses, which in turn should help retention of staff and students.

9.11 Conclusion

It is evident that preceptorship plays a central role in nursing education and that the interpersonal relationships of a nursing preceptorship play particular importance in ensuring preceptors can facilitate effective clinical learning experiences for students and provide effective patient care.

This thesis contributes to the evidence base by 1) Providing a further understanding of the factors that positively or negatively impact nursing preceptorship relationships through a comprehensive review of the literature and one-to-one interviews with students, preceptors and patients. 2) Providing insight into current preceptorship education programmes and the lack of apparent focus on developing interpersonal and communication skills associated with effective nursing preceptorships through a systematic scoping review of the literature. Furthermore, it highlighted that patient experiences and perspectives are uncaptured in the literature and unrepresented in current preceptorship education programmes. Additionally, a lack of patient

involvement in the design of preceptorship education programmes was noted. 3) A pilot study demonstrated the positive impact online RLOs have on preparing students for face-to-face simulations. 4) A pilot study demonstrated the positive learning experience VR storytelling provides nursing students. 5) Applying an EBCD methodology with students, preceptors, patients and a team of experts to co-design and co-produce a new preceptorship programme resulted in the development of an active blended learning programme that incorporated experiential knowledge (touchpoints) and scientific knowledge (literature and expert-based knowledge), resulting in an authentic educational programme. 6) This study identified a lack of guidance regarding providing psychological safety within a nursing preceptorship; therefore, innovative tips for creating a psychologically safe environment with a nursing preceptorship were established.

9.12 Future dissemination plan

Following the implementation of a pilot study in early 2023, the researcher aims to roll the new educational programme (accredited by NMBI as a CPD programme) out nationally. The researcher also aims to explore and disseminate the findings of the subsequent studies.

- Title: Nursing preceptors' experience of an interpersonal and communication skills blended learning programme: An evaluative study.
  Journal: Nurse Education Today
- Title: Key tips to resolving conflict in a nursing preceptorship relationship.
  Journal: BMC Medical Education
- Title: Co-designing a nursing education programme: reflections of participants and a doctoral researcher on roles and contributions
  Journal: Nurse Education Today
- Title: Preceptors self-reported interpersonal and communication skills development: preceptorship education programme: An evaluative study
  Journal: Nursing Open

9.13 Reflection on the research process

I engaged in reflexivity throughout my PhD journey by keeping a reflexive research journal. I tracked my thoughts, reasoning, judgment, and emotional reactions. The insights I gained through this process of reflexivity are discussed in this section.

Working as a clinical nurse tutor and my previous experience as a nurse preceptor meant that I had extensive experience with the concept of nursing preceptorships. Each year a significant number of nursing students report difficulties to me as a clinical nurse tutor regarding their lived experiences of interpersonal preceptorship relationships that occur during their practice placements in the clinical environment. These difficulties particularly relate to difficult interactions and communication with their preceptors during practice placements. This is an ongoing problem reported by both preceptors and nursing students in my institution. I had mainly positive experiences as a student years ago. Yet, one preceptor still stands out to me to this day due to their negative attitude to students and the hardship I witnessed inflicted on students. This experience meant that I had an existing understanding of nursing preceptorships. However, my involvement in this study further strengthened my knowledge of nursing preceptorships as I could hear from and engage with all three members of students, preceptors and patients. I was committed to developing an effective preceptorship education programme that would help improve interpersonal relationships during nursing preceptorship.

What struck me from the early sections of my reflective journal was the ever-evolving nature of the project. I entered this project with a somewhat predetermined idea of what the project would entail. i.e., the creation of a VR simulation. However, looking over the early pages of the journal reveals how the project grew as I engaged in the literature and explored different research methods. I note the importance of conversations with friends, supervisors, colleagues (from university) and nurses I was working in the hospital with at the time. Often these conversations sparked new ideas and or reaffirmed ideas to date. Similarly, I note the development of ideas and methods for this study as I engaged in the various modules I completed during my PhD.

The most challenging element of conducting this study occurred early in the project and resulted from Covid-19. Initially, I had planned to run this project face to face and

carry out observational studies, interviews and co-design workshops in the hospital. However, while I was finalising ethical approval via three hospital ethics boards in March 2020, Covid-19 restrictions were enforced, and I could no longer gain access to the hospitals to recruit participants. This sparked high levels of anxiety, fearing the project was over before it had even begun. I was forced to completely reconsider my project. After several stressful days of restructuring the project by thinking outside the box, the project was redesigned. This very stressful time taught me the power of stepping back from a problem, letting go of what work you have done to date and readapting using innovative technological methods.

On reflection, I thoroughly enjoyed the role of project manager and feel this study strengthened my project management skills. I was required to have strong interpersonal skills, leadership skills, organisational ability, and a deadline-driven focus throughout the project. Members of the co-design team and my supervisors commented positively on my project management skills throughout the project. Without being cliché, organisation was an essential skill that I needed as the project lead. I was responsible for the big picture elements like planning out the project in detail to the everyday things like personal time management that facilitated the running of the project. As the project lead, I was responsible for organising myself and creating deadlines to keep the project on track. I am a visual person, so I found creating Gantt charts and sharing them with the co-design team created a clear and transparent timeline for the project. The co-design team commented on my use of colour coding in highlighting the study's progress, stating they found it easy to follow and gave a clear visual representation of the project. Equally, I learned that something may still go wrong with every well-thought-out project. As the poet Robert Burns says, "*The best-laid plans of mice and men can still go wrong*". Therefore, this project taught me that flexibility is vital. I had to learn to flexibly respond to minor difficulties I encountered throughout the project, e.g., rescheduling a co-design workshop due to the lack of availability of the co-design team. While there were points throughout the project when I felt the pressure of getting it over the line, I knew it was imperative that this did not come across to the co-design team. Instead, I learned the strength of checking in with the co-design team and sending encouraging emails on our progression to date. This further sparked enthusiasm and encouraged further engagement from the co-design

team. Empathy played another role in my position as project lead. Understanding the co-design team's feelings and different perspectives on things allowed me to better understand the group and thus create a more motivational environment. I feel I was, therefore, better positioned to understand what drives each group member. From there, I could motivate them to actively engage in the project.

My involvement in this project strengthened my ability to chair co-design workshops. One of the most critical practices I implemented as chair was to motivate everyone to actively engage in the co-design workshops. By nature, I am typically a positive and enthusiastic person. This proved beneficial in the workshops as I welcomed and encouraged fellow co-designers. As a result, they appeared eager and engaged throughout the project. As chair, I understood the importance of creating a psychologically safe environment for everyone to propose new ideas, ask questions, and debate design elements. This allowed the co-design workshops to function as a friendly, supportive, and creative environment. I achieved this by creating an open and friendly environment. Equally, my ability to take on board criticism or constructive feedback grew as the co-design workshops evolved. Any preconceived ideas for the new educational programme were now subject to the co-design group discussion and agreement. I felt I managed this well as I presented transparent results of each stage of the co-design workshops to all project members on how the decisions were determined. The co-design team was comprised of diverse personality types. I had to learn to communicate in ways that were effective yet respectful to advance our project while maintaining group rapport. When differences of opinion arose within the group, I had to ensure that both perspectives were heard and valued. Yet ultimately, a collective decision had to be made. This proved to be an uncomfortable, yet essential lesson learned during one of the early co-design workshops. I had to learn to trust my judgment and the judgment of other group members. Sometimes, co-designers, including myself, would have creative ideas but would not help meet the desired learning outcomes. I would always direct the co-design team back to the agreed learning outcomes of the new educational programme. In doing this, I felt I kept the project focused, leading to the creation of a quality educational programme.

My previous education and experience in audio, visual media technology, nursing, online teaching and the development of educational tools proved beneficial throughout this project. It was absolutely critical that I could create, develop, adjust, and share learning content using various technology throughout the project. I spend many evenings watching YouTube videos and learning how to create interactive online workshops using software such as Zoom & Padlet. Experimenting with the technology before the workshops was vital to ensure I was familiar with and at ease with using the technology during the workshops. I also found it beneficial to teach the other co-designers how to use the technology. As Einstein says, "*If you can't explain it simply, you don't understand it well enough*".

Equally, I feel this project developed my visual and artistic skills. I experimented with visual design tools such as Articulate, Canva, and Photoshop to create the online learning units. Collaborating with an educational technologist and the co-design team throughout this process further developed my skill set from storyboarding original ideas. We aimed to create interactive learning activities that provide on-the-spot feedback and present facts engagingly and interestingly that are visually aesthetic and conducive to active learning.

My previous experience in creating educational videos proved advantageous as I could implement a clear and structured process to the design and develop educational videos embedded throughout the programme and the VR storytelling experience. My experience in script writing, storyboarding, filming, and postproduction streamlined the process for this project. I feel it strengthened the quality of the final products. I believe my experience showed the co-design team confidence in my abilities and the products we were creating for this project. Similarly, my previous experience creating role-play simulations proved advantageous in this project. I understood the steps required to design and develop the role-play simulations taking into account simulation theory etc. I was able to share this knowledge with the co-design group, resulting in what I feel are two practical role-play simulations that will allow preceptors to put into practice the knowledge they have gained through completing the online learning units.

Having previous experience in creating online learning units and simulations meant I clearly understood the pedagogical approaches', theoretical underpinnings and the

practical process of designing and producing these educational tools. This proved beneficial as an instructional designer as I understood and explained to the co-design team the principles of adult learning, i.e., Experiential learning theory, Bloom's learning taxonomy, simulation theory, and how best to integrate these principles throughout the new educational programme. As an educator I advocate a constructivist approach to teaching, believing student-centered learning which encompasses students taking an active role in the construction of meaning and knowledge to gain a deeper understanding of the presented material. Incorporating these perspectives into the new programme was essential to ensure to provide active learning opportunities and social interaction to facilitate students' building their knowledge in the new educational programme.

A steep learning curve for me in this study was examining and experimenting with VR technology. When I began this project, VR was becoming more available, with companies like Facebook (now Meta) bringing VR headsets on the market. I spent many hours exploring different VR products to understand its scope and abilities. I travelled to international conferences to network with industry experts to share my ideas and learn from their experiences. I completed a post-grad in cyberpsychology in which we explored the psychology behind VR so I could understand how it works and how it could be used as an educational tool. I feel that bringing this knowledge to the project strengthened the final educational programme as it led to the innovative development of a state of art VR storytelling experience.

I found completing a PhD by publication particularly helpful. Knowing that I needed to present my findings as a paper suitable for publication helped me to prioritise my findings and to situate my analysis and discussion within the context of previous research. It also ensured that the work from this study was disseminated and added to the available literature. Allotting time to writing as early as possible is paramount to writing a PhD by publication. The skills I had learned from being a project lead were transferable to the writing process. As the lead author, my project management skills were utilised to run the pilot studies and systemic scoping review, set deadlines, identify a suitable journal and adapt the paper following feedback. While completing a PhD by publication was helpful, it would be difficult to ignore the trials, tribulations and

triumphs of publishing. At times I found it challenging to remain upbeat and optimistic about the process. Some papers were rejected before being reviewed, and others are under review for over a year. However, the elated feeling of being published and getting recognition for your work far out ways the tribulations of competing for a PhD by publication.

All in all, I feel carrying out this project has brought me full circle in my career. It has taken me years to develop the skills to effectively design and implement this project.

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Appendices

Appendix A. Data Extraction Table

Data chart heading	Description
Author	Name of author/s
Title of article	Title of the article or study
Publication year	The year that the article was published
Study details	Type of study, empirical or review, etc.
Study Aim	The aims of the study
Methodological Approaches	Approach taken to examine the topic
Data Analysis	Analysis of data
Study setting	Country/hospital/ programme
Study population	The population studied with regard to demographics
Reported challenges or limitations	What challenges were encountered
Findings	Noteworthy results of the study
Conclusion	Important aspects of the conclusion

Appendix B. Interpersonal and Communication Skills Development in Nursing Preceptorship Education and Training Programmes: A Scoping Review Protocol

Abstract

The preceptorship model is an education-focused model for teaching and learning within a clinical environment in Nursing. It formulates a professional educational relationship between a staff nurse (preceptor) and student nurse and is based on the provision of providing patient care. Preceptorship is widely acknowledged in the literature as a positive pedagogical approach in clinical nursing education in terms of knowledge and skill acquisition, confidence, and professional socialisation of undergraduate nursing students. However, the literature also widely reports negative interpersonal experiences within this professional educational relationship resulting in negative educational experiences and in some cases, negative patient experiences. Therefore, the authors set out to examine what teaching strategies are being implemented by nurse educators to encourage the development of interpersonal and communication skills in facilitating positive interpersonal relationships between the preceptor, nursing student and patient. This paper outlines the protocol for an exploratory scoping review that aims to systematically and comprehensively map out the available published and unpublished literature on the teaching strategies to develop interpersonal and communication skills in preceptorship education and training programmes. To conduct a systematic and comprehensive scoping review, the review will be guided by the Joanna Briggs Institute and Arksey & O' Malley (2005) six-stage iterative framework, as well as PRISMA-ScR framework guidelines, to ensure the quality of the methodological and reporting approaches to the review. It is anticipated that the results of the scoping review will inform nurse educators on the current educational practices for developing interpersonal and communication skills in preceptorship education and training programmes and identify any educational practices that are worthy of further consideration for future research.

Hardie, P., Darley, A., Redmond, C., Lafferty, A., & Jarvis, S. (2021). Interpersonal and communication skills development in nursing preceptorship education and training programmes: a scoping review protocol. HRB Open Research, 4.

Introduction

The preceptorship model is a teaching and learning strategy frequently employed internationally to educate undergraduate and graduate nursing students in the clinical environment. Some debate exists regarding the definition and function of preceptorship, for example Billay & Myrick's (2008, pg. 259) defines preceptorship as:

> " an approach to the teaching and learning process within the context of the practice setting which allows students to develop self-confidence while increasing their competence as they become socialised into the profession of nursing".

Carlson (2013, pg.457) further defines preceptorship "as a trusting relationship between preceptor and student.... where the preceptor strives to create a safe and meaningful interactive relationship with the student..... thus supporting the student's ability to implement generalized theoretical knowledge into patient-centered problems". Another key function of a preceptorship not captured in the previous definitions is the preceptor's role in the assessment of students' competencies. Johanne *et al.*, (2018, pg.13) states "the students' learning process is dependent on high-quality assessment processes and feedback from preceptors permitting students to critically reflect on their practice and learn for that experience". Acknowledging that up to 50% of undergraduate nursing curriculums take place in the clinical environment, the preceptorship model plays a pivotal role in the education of student nurses (McSharry & Lathlean, 2017; NMBI, 2016a; NMC, 2018). The preceptorship relationship is a purposeful short-term professional partnership in the practice setting between the preceptor (staff nurse) and a nursing student (preceptee) and is based on the provision of providing patient care. Hence, within the preceptorship model, there are three members: the preceptor, the student nurse, and the patient, forming a triadic

professional relationship. This relationship provides opportunities for nursing students' socialisation into nursing practice and helps to integrate theory into practice, under the guidance of the preceptor (McSharry & Lathlean, 2017; Muir *et al.*, 2013; Ward & McComb, 2017). The Nursing and Midwifery Board of Ireland (NMBI, 2016b) states that effective interpersonal relationships are not only essential for the foundation of effective patient care but also a successful teaching and learning environment. Therefore, the quality and support within this relationship contribute significantly to nursing student's socialisation into the nursing profession and their learning (Ward & McComb, 2017) whilst also ensuring quality patient care and their satisfaction in their nursing care (Suikkala *et al.*, 2020a). Thus, the formation of a therapeutic interpersonal relationship between the preceptor/nursing student and patient is essential.

Kornhaber *et al.* (2016, pg. 537) define a therapeutic interpersonal relationship between the nurse and patient as:

> " a relationship which is perceived by patients to encompass caring, and supportive non-judgmental behaviour, embedded in a safe environment during an often-stressful period".

Typically, a positive therapeutic relationship portrays characteristics of good interpersonal competence with meaningful dialogue that displays warmth, friendliness, genuine interest, respect, and empathy, while at the same time responding to patients' emotions and having a desire to provide support and care (Dinç & Gastmans, 2013; Kornhaber *et al.*, 2016; Prip *et al.*, 2018). It is therefore essential that preceptors are proficient in these skills, which will enable them to provide patient-centered care, while also utilising teaching techniques such as role modelling, coaching and contextual questioning to facilitate the student's learning (McSharry, 2013). For this reason, there needs to be a strong educational and trustful professional relationship between the preceptor and student nurse, so that positive therapeutic interpersonal relationships can then be developed with patients. In light of the increasing complexity of healthcare delivery, the importance of effective interpersonal relationships between the preceptor, nursing students and patients has grown exponentially. The literature emphasises the benefits of effective interpersonal and communication skills but also highlights the

consequences of negative interpersonal interactions. Effective interpersonal relations have been shown to play a pivotal role in building trusting relationships and creating a caring and welcoming environment in nursing (Arnold & Boggs, 2020). This thereby improves communication between the preceptor, nursing student and patient, leading to person-centred care, patient satisfaction, patient empowerment and decreases adverse events among patients (Suikkala *et al.*, 2020a; Suikkala *et al.*, 2020b). Effective interpersonal relations also facilitate the development of knowledge, skills acquisition, and theory-practice integrations for nursing students (Irwin *et al.*, 2018; Ke *et al.*, 2017; Omer & Moola, 2019; Ward & McComb, 2017; Washington, 2013).

However, the literature to date also widely documents negative interpersonal relationships within this professional educational relationship and the clinical environment. Reports from both preceptors and nursing students exist regarding workplace incivilities such as rudeness, humiliation, anger, generational clashes, and inappropriate criticism from experienced preceptors (Dyess & Sherman, 2009; Gardiner & Sheen 2016; Omer & Moola, 2019). These challenging experiences consequently result in a negative learning experience for the student and, in some cases, interpersonal conflict occurs due to a breakdown in the preceptorship relationship Hugo & Botma, 2019; McCloughen & Foster, 2018). Furthermore, it has been reported that displaying poor interpersonal skills, where there is a lack of emotional intelligence demonstrated by preceptors and student nurses, can result in negative feelings amongst patients, leading to a lack of trust and a possible breakdown in the relationship (Holst *et al.*, 2017; Mukumbang & Adejumo, 2014). As educators, this is concerning to the authors, as fragmented relationships can have not only a negative impact on the student nurses' learning experience but also on patient care (Cho *et al.*, 2017; Suikkala *et al.*, 2018; Suikkala & Leino-Kilip, 2005).

As with any human skill, interpersonal and communication skills, also referred to as "soft skills" can be improved through conscious effort (Moss, 2020). McConnell (2004, pg. 178) describes soft skills as " those essential skills involved in dealing with and relating to other people, largely on a one-to-one basis". These include the ability to engage with others at a personal and professional level, and display levels of empathy towards the situation that others may be experiencing (Grant & Goodman, 2019). This

process stimulates feelings of support, comfort, and recognition in individuals (Wright, 2007). Enhancement of interpersonal skills concerns several key components, including the individuals' emotional intelligence, learning to recognise the uniqueness of everyone, empathising with the individual, learning to listen, effective communication, empowering others and building trust (Grant & Goodman, 2019).

Teaching effective interpersonal and communication skills requires providing the relevant knowledge, as well as guiding and coaching learning to develop and enhance these skills. It takes time and experience to build effective interpersonal and communication skills, beginning with foundational skills, for example, knowing when to use open-ended and closed-ended questions. More advanced listening skills paired with sensitivity and empathy generate highly effective interpersonal relationships (Pavord & Donnelly, 2015). Investing in developing preceptors' interpersonal and communication skills is essential in maintaining good interpersonal relationships, an effective teaching environment and exemplary patient care. Preceptors not only have the responsibility of role modelling effective soft skills but also evaluating student nurses' competencies in these skills as part of their clinical assessment document (NMBI, 2016a). Therefore, the inclusion of such skills is paramount in preceptorship education and training programmes. Preceptors bring their own distinctive set of communication skills, cultural influences, learning styles and life experiences that directly affect their ability to engage in effective interpersonal relationships (Gardiner & Sheen, 2016). Nurse educators must build on preceptors' strengths and experiences to enhance their interpersonal skills. A preceptor short of adequate interpersonal and communication skills may be able to facilitate positive interpersonal relationships with the nursing students and patients (Martinez-Linares *et al.*, 2019). Interpersonal and communication skills are practical skills. Therefore, nursing educators need to adapt teaching strategies that involve activities which allow opportunities for active participation to develop such skills, e.g., experiential learning opportunities (Reid-Searl *et al.*, 2017). Pedagogical approaches observed in the literature include simulation practices such as the use of puppets (Reid-Searl *et al.*, 2017), standardised patients (Lin *et al.*, 2013; Maclean *et al.*, 2017), real patients (Perry *et al.*, 2013) and roleplay

(Jackson & Back, 2011; Pearson & McLafferty, 2011). Other methods observed included clinical placement (Purdie *et al.*, 2008), group discussions (Waugh *et al.*, 2014), online discussion (Deering & Eichelberger, 2002), and audiotapes (Sloan, 2003).

The existing evidence outlined provides an overview of the importance of interpersonal and communication skills, particularly in the context of a nursing preceptorship relationship. This literature highlights the need for active development of these skills in preceptorship education and training programmes. However, an initial inspection of the literature demonstrates that the focus of interpersonal and communication skills development centres around nurse-patient relationships and is predominantly completed as part of an undergraduate nursing programme. Given the importance of effective interpersonal and communication skills for preceptors in not only facilitating and guiding such skills among nursing students and the patients, but the authors also feel it is therefore worthwhile to systematically examine the literature to identify what teaching strategies are being implemented to develop interpersonal and communications skills among trainee preceptors (qualified nurses). It is also important to determine if trainee preceptors are being afforded the opportunity to specifically develop interpersonal and communication skills required to facilitate and guide the triadic preceptorship relationship between the nurse, student nurse and patient.

A scoping review protocol will outline the approach that will be adopted to determine the available literature on the pedagogical approaches to developing interpersonal and communication skills among nursing preceptors as part of their preceptorship education and training programme.

Protocol

An exploratory scoping review approach will be employed to establish the nature and extent of knowledge relating to pedagogical approaches in preceptorship education and training programmes for the development of interpersonal and communications skills among trainee preceptors. Scoping reviews are used to map the concepts underpinning a research area and the primary sources and types of evidence available (Arskey & O'Malley, 2005). Scoping reviews present a broad overview of the evidence concerning a topic and are beneficial when investigating areas that are emerging to

clarify key concepts, definitions and identify gaps (Page & Moher, 2017; Lockwood *et al.*, 2019). Scoping reviews are also implemented to examine the breadth of the literature, as well as the conduct of research on a specific topic to inform the design of future research studies (Lockwood *et al.*, 2019).

To the best of the authors' knowledge, there are currently no scoping reviews examining the educational practices of nurse educators in developing interpersonal and communication skills among trainee preceptors. Therefore, the findings of this exploratory review will contribute to existing literature regarding current pedagogy for interpersonal and communications skills development in preceptorship education and training programmes. The findings of this review may benefit the wider society, considering that interpersonal relationships of a preceptorship not only play an essential role in providing effective patient care, but also in facilitating nursing education in the clinical environment. It will also contribute a theoretical and empirical basis for the future development of pedagogical approaches that aim to enhance interpersonal and communication skills in preceptorship education and training programmes. The scoping review protocol introduced by Arksey & O' Malley (2005) that encompasses a six-stage iterative framework, as well as Peters *et al.* (2020) updated approach to conducting scoping reviews, will guide this review protocol and subsequent scoping review.

Aim and Objectives

The overall aim of the scoping review is to identify, explore and map the literature regarding the development of interpersonal and communication skills for preceptors as part of their preceptorship education and training programme.

This will be achieved by addressing the following objectives:

1. Determine the extent and nature of existing literature on the development of interpersonal and communication skills in preceptorship education and training programmes, so that the literature can be examined and mapped out, to identify any gaps.
2. Examine current educational practices for the development of interpersonal and communication skills in preceptorship education and training programmes, to

identify any educational practices that are worthy of further consideration for future research.

Stage 1: Identification of the Scoping Review Research Question

Peters *et al.* (2020) state that a clear scoping review question should incorporate elements of the PCC mnemonic (population, concept, and context). In this instance, qualified nursing staff (trainee preceptors/preceptors) are the relevant population, the concept is educational practices for interpersonal and communication skills development, and the context is preceptorship education and training programmes in acute/residential clinical settings. The research question that will therefore guide this scoping review is:

" What is known about the development of interpersonal and communication skills amongst trainee nursing preceptors in preceptorship education and training programmes?"

Stage 2: Identifying Relevant Studies

The Preferred Reporting Items for Systematic reviews and Meta-Analysis extension for Scoping Reviews (PRISMA-ScR) Checklist framework guidelines introduced by Tricco *et al.* (2018) will also guide the systematic scoping review. These guidelines are recommended to enhance transparency and quality of the completed scoping review (McGowan *et al.*, 2020), and will help the researchers and the readers develop a greater understanding of the evidence. The research team will undertake a comprehensive search of the literature within the following databases:

- CINAHL Nursing and Allied Health (CINAHL Plus)
- SCOPUS (Elsevier Publications)
- Academic Search Complete (EBSCOhost)
- APA PsycINFO (American Psychological Association)
- Education (ERIC)

Joanna Briggs Institute (JBI) three-step process for applying a search strategy will be implemented (Peters *et al.*, 2020). Firstly, an initial search was deployed on CINAHL

Plus, the identification of search terms was conceptually based on an oriented search to identify key text words used to address the major concepts which include population (preceptors), concept (interpersonal and communication skills development), and context (nursing preceptorship education and training programme). Synonyms for each of the concepts will also be included. Each search strategy will be adapted to the functionality of each database using specific Boolean operators, truncation markers, and MeSH headings where necessary to broaden the search and capture all literature that may use such terms. McGowan *et al.* (2020) state the input of a research librarian is invaluable when carrying out a scoping review; the authors worked with an expert university librarian (D.S.) in designing and refining the search strategy. Table 1 outlines the keywords for each search string.

Table 1: Keywords for each search string

1. **Population (P):** Nurse (or) Preceptor (or) Mentor (or) Supervisor (or) Practice Supervisor (or) Clinical supervisor (or) Practice assessor (or) Nursing tutor (or) Nursing instructor (or) Nursing educator
2. **Concept (C)**: Interpersonal skills (or) Soft skills (or) People skills (or) Social skills (or) Communication skills (or) Interpersonal communication (or) Verbal communication (or) Non-verbal communication (or) Active listening (or) Emotional intelligence (or) Patience (or) Negotiation (or) Conflict resolution (or) Problem-solving (or) Decision-making (or) Assertiveness (or) Teamwork (or) Humour (or) Empathy (or) Feedback
3. **Context (Co)**: Education (or) Training (or) Workshops (or)Training program (or) Educational activity (or) Training technique (or) Teaching method (or) Teaching activity (or) Pedagogy (or) Nursing education
Results from strings 1, 2, 3 will be combined to reveal a full list of articles to be initially screened by title and abstract

As per the second stage of the JBI search strategy protocol, the same keywords from Table 1 will be searched in the remaining aforementioned databases. During this

stage, the research team will review and 'hand search' the reference list to identify any additional relevant studies. Given that this is an exploratory scoping review, the authors are interested in identifying all literature including RCTs, exploratory studies and discussion papers. Therefore a "web search" of the grey literature will also be conducted using "OpenGrey" and "Google Scholar". Specific educational policy publications by regulatory and professional bodies for preceptorship education and training programmes will also be searched to examine the focus of interpersonal and communication skills required for a preceptorship role. Table 2 outlines the search terms for grey literature and regulatory and professional bodies for preceptorship education and training programmes.

Table 2 Grey Literature Search Strategy

Source and Link	Search terms
Open Grey http://www.opengrey.eu/ In subject: Humanities, psychology, and social sciences	Preceptorship interpersonal and communication skills Education and Training (First 10 pages)
Google Scholar https://scholar.google.com/	Preceptorship interpersonal and communication skills Education and Training (First 10 pages)
Nursing and Midwifery Board of Ireland (NMBI) https://www.nmbi.ie/Standards-Guidance	Preceptorship Interpersonal relationships Interpersonal and communication skills
Nursing and Midwifery Council (England) https://www.nmc.org.uk/	Preceptorship/ Mentorship/ Practise Supervisors Interpersonal relationships Interpersonal and communication skills
Health Education England https://www.hee.nhs.uk/our-work/preceptorships	Preceptorship/ Mentorship/ Practise Supervisors Interpersonal relationships Interpersonal and communication skills

Nursing and Midwifery Board of Australia https://www.nursingmidwiferyboard.gov.au/	Preceptorship Interpersonal relationships Interpersonal and communication skills
Canadian Nurses Association https://www.cna-aiic.ca/en	Preceptorship Interpersonal relationships Interpersonal and communication skills

Stage 3: Study Selection

Each search will be systematically documented (date, search terms, results per string) and saved by two independent authors (PH, AD), with the resulting findings of the searches compared and then imported into Mendeley (1.19.6 / 2020), a bibliographic reference manager, where any duplicates of literature will be removed before the initial screening of title and extract is divided out and screened by all of the authors. Covidence screening and data extraction software tool (www.covidence.org) will be utilised by the authors for screening. Each article will be required to be approved by two independent screeners before either being included or excluded in the review. A pilot testing of articles (n=50) using Covidence software package and inclusion, and exclusion criteria will be undertaken by the authors to ensure consistency of the methodology adopted in the selection process (Peters *et al.*, 2020). Full text screening will then be carried out on all articles that meet the inclusion criteria during the initial screening round by two independent authors (PH, CR). For any articles in which a disagreement may arise a third independent author (AL) known as the "tie-breaker" will further review the article against the inclusion criteria to settle the difference of opinion. The number of articles identified, screened, assessed for eligibility, and included in the review will be captured using the Covidence software package. A PRISMA flow diagram will be created to ensure transparency of reporting, decisions for the exclusion of studies permitting replication and comparison of any further studies.

The Inclusion and exclusion criteria, highlighted in Table 3, will be developed through an iterative process based on the PCC elements of the review question, plus a specification of the types of studies that have addressed the scoping review question and discussions amongst the authors (McKenzie *et al.*, 2020). The primary author will record any changes. All authors will utilise and adhere to its criteria during the screening process to ensure consistency.

Table 3 Inclusion and Exclusion Criteria for Scoping Review

Inclusion	Rationale
Articles written in the English Language	Searches will be limited to English language due to increased resource challenges concerning costs, time, and expertise in non-English languages.
Publications between 2000 and 2020	The search will be conducted for literature published within the last twenty years.
Peer-reviewed empirical studies with either qualitative or quantitative data, mixed methods, reviews, book chapters and grey literature with a principal focus on the development of interpersonal and communication skills in preceptorship education and training programmes.	The focus of the review is to examine the development of interpersonal and communication skills in preceptorship education and training programmes; Peer-reviewed empirical studies will provide reliable and a high standard of evidence. Grey literature will capture unpublished works and local evaluation of preceptorship education and training practices.
Exclusion	**Rationale**
Non-English Language Studies	The English language is the primary language of the research team. Therefore, all non-English studies will be excluded due to the constraints of time, cost, and translator availability.
Studies relating to the development of interpersonal and communication skills in non-preceptorship nursing education	The focus of this review is to establish current educational practices for the development of interpersonal and communication skills in preceptorship education and training programmes. Therefore, studies that are not specifically part of a preceptorship education and training programme will not be included.

Stage 4: Data Charting

In this stage, a data extraction form will be created by the lead author (PH) (Table 4: Sample Data Charting Form) based on Joanna Briggs institute (2020) data charting form, mapping it with the objectives and research question of the scoping review (Peters *et al.*, 2020) and piloted on two articles by all authors. Any changes to the chart will be documented and reported in the final scoping review for transparency in the reporting.

Table 4: Sample Data Charting Form

Data chart heading	Description
Author	Name of author/s
Date	Date article sourced
Title of article	Title of the article or study
Publication year	The year that the article was published
Publication type	Journal, website, conference, etc.
Study details	Type of study, empirical or review, etc.
Study Aim	The aims of the study
Research Design	The framework of research methods and techniques chosen by the researcher/s.
Methodological Approaches	Approach taken to examine the topic
Data Analysis	Analysis of data
Keywords	What keywords were present
Study setting	Country/hospital/ programme
Study population	The population studied with regard to demographics
Theoretical framework	What educational frameworks were implemented to offer a distinctive way to frame teaching practices of IP & C skills
Pedagogical methods	Pedagogical methods applied to teaching IP & C skills
Reported challenges or limitations	What challenges were encountered

Findings	Noteworthy results of the study
Conclusion	Important aspects of the conclusion

Stage 5: Collating, Summarising and Reporting the Results

Each data charting form will be logged electronically using Microsoft Excel to capture relevant information for each study and will be available for all members of the research team via a shared drive. All authors will discuss the data before a descriptive analysis commences. As recommended by Peters *et al.* (2020), the analysis of data extracted should not involve any more than descriptive analysis to achieve the desired outcomes of a scoping review. Therefore, a narrative report will be produced, using a deductive thematic analysis approach summarising the extracted data concerning the objectives and scoping review question, for example, the pedagogy adopted for interpersonal and communication skills development and the impact of such training on trainee preceptors. Identification of areas in which a gap in the literature exists will also be reported. Quality appraisal of studies will not be conducted, as this review aims to explore the general scope of research conducted in the field of interpersonal and communication skills development in preceptorship education and training programmes and identify current pedagogical practices implemented to contribute a theoretical and empirical basis for the future development of preceptorship education and training programmes.

Stage 6: Consultation and Dissemination

Initial findings from the scoping review will be presented to several stakeholders. The primary author (PH) will disseminate the results of the review with local academic networks within the authors' place of work (third level institution) and associated clinical settings. The author will specifically report the findings to Clinical Placement Coordinators (CPC), who typically develop and facilitate preceptorship education and training days in the clinical settings in Ireland. The primary author will also share the results at the Clinical Skills Network of Ireland in which he is a stakeholder to reach a national targeted audience. The authors will engage with these groups to share and discuss our findings and interpretations to capture their perspective on the evidence identified. The Lead author also aims to deliver an oral or poster presentation at

National and International conferences such as the International Nursing & Midwifery Research and Education Conference, scheduled for March 2022. Finally, the authors aim to publish the scoping review findings in a peer-reviewed journal for a wider communication of the results. All data generated and analysed during the scoping review will be included in the published scoping review article; including search results, list of included studies, data extraction spreadsheets and final results, to ensure transparency and reproducibility of the review.

Study status

This study is at Stage 2- A preliminary search of the literature has been conducted and the software packages Mendeley and Covidence have been trialled.

Discussion

This scoping review protocol has been designed in line with the latest literature and evidence (Arksey & O'Malley's, 2005; Tricco *et al.*, 2018; Peters *et al.*, 2020) to create and perform a systematic scoping review. The distinguishing features of a scoping review will permit the authors to answer the specified research question, applying a systematic and evidence-based approach to identify the current knowledge on educational practices for the development of interpersonal and communication skills as part of preceptorship education and training programmes. It will also permit the authors to identify gaps in our knowledge base in this field which could justify new research and also inform the design, conduct and reporting of future research.

While this scoping review will not formally evaluate the quality of evidence available, it will provide an overview of the available literature that will inform the researcher on current educational practices for the development of interpersonal and communication skills as part of preceptorship education and training programmes. This knowledge may identify the gaps in training that are contributing to interpersonal conflicts in preceptorship relationships that are widely reported throughout the literature. Only articles in English will be used; however, there will be no restrictions on the country of origin where the publications were produced, which should therefore provide a diverse

range of opinions and experiences. Following the open peer-review process and achieved approval, the authors will commence the systematic scoping review.

Appendix C. Ethics Approval UCD Human Research Ethics Committee

Dear Philip,
Thank you for notifying the Human Research Ethics Committee – Sciences (HREC-LS) of *your declaration* that you are exempt from a full ethical review. Should the nature of your research change and thereby alter your exempt status you will need to submit an application form for full ethical review. Please note for future correspondence regarding this study and its exemption that your Research Ethics Exemption Reference Number (REERN) is: **LS-E-21-18-Hardie-Jarvis. This exemption from full ethical review is being accepted by the Office of Research Ethics on the condition that you observe the following:**

- **External REC Approval and/or Permission to Access/Recruit Human Participants/or their Data:** *(if applicable)* Please be aware that recruitment of participants or data collection should not begin until written permissions are secured from external organisations/individuals. I note from your application the provision of permission to access students from your Head of School.

- **COVID-19:** Please note that for any future changes to face-to-face data collection will require a complete a self-assessment using the Human Research Risk Assessment form from SIRC**.** This may be required as part of any future request to amend.

- **UCD Insurance Requirement:** I confirm that the public liability insurance cover is in place for this project.

- **Researcher Duty of Care to Participants:** please ensure that ethical best practice is considered and applied to your research projects. You should ensure that participants are aware of what is happening to them and to their data whether a study is de-identified or not. All researchers have a duty of care to their participants who have the right to be informed, the right to consent to participate and the right to withdraw from the study.

Any additional documentation should be emailed to exemptions.ethics@ucd.ie quoting your assigned reference number (provided above) in the subject line of your email.
Please note that your research does not require a committee review and also note that this is an acknowledgment of your declared exemption status. All Exemptions from Full Review are subject to Research Ethics Compliance Review.
Regards,
Tom
Tom Seaver
Office of Research Ethics
Roebuck Castle
Belfield
Dublin 4
w: www.ucd.ie/researchethics

Appendix D: Information Leaflet and Consent Form: Students/Preceptors

Please note that this form was converted to a digital form using google forms.

Title of Study: Co Designing and Co Creating a new nurses' education programme that focus on developing interpersonal and communication skills.

You are invited to participate in a research study. Thank you for taking the time to read this information leaflet.

RESEARCH TEAM

Philip Hardie is leading this research project, a PhD Student in the School of Nursing Midwifery and Health Systems, under the direct supervision of Prof. Suzi Jarvis (Director of UCD Innovation Academy and Dr Catherine Redmond (Assistant Professor/Lecturer in Nursing). Relevant contact details can be found at the end of this document.

WHAT ARE THE OBJECTIVES OF THIS STUDY?

Nursing preceptorship plays a central role in nursing education. Preceptorship is defined as a professional educational relationship situated within the clinical hospital environment, between a staff nurse (the preceptor) and a graduate or student nurse, involving the delivery of patient care. Therefore, this professional relationship comprises a triadic relationship between the student nurse, preceptor, and the patient. The purpose of this PhD research project is to explore students, preceptors, patient's experiences, and perspectives of nursing preceptorship relationships to co-design and co-create a new practical "how to precept" based educational programme that will allow preceptors to actively engage and reflect on their developing interpersonal and communication skills associated with nursing preceptorships.

This study will be conducted to address the following questions:

- What are students', preceptors' and patients' experiences and perceptions of nursing preceptorship relationships in a general hospital setting?

- What key educational topics and pedagogical approaches are identified by students, preceptors, and patients, in collaboration with nursing and education experts to develop an effective preceptorship education programme for developing interpersonal and communication skills?

WHY HAVE I BEEN INVITED TO TAKE PART?

You are invited to participate in this research because we feel that your experience as a student/ preceptor or both in a university teaching hospital can contribute to our understanding and knowledge of your perceptions and experiences of interpersonal interactions in nursing preceptorship relationships.

WHAT WILL HAPPEN IF I VOLUNTEER?

Your participation is entirely voluntary. If you agree to participate, you will be invited to participate in the study, where you will be asked to participate in a one-to-one interview in which your experiences and perceptions of being involved in a nursing preceptorship will be explored. You will also be asked to identify key educational topics and teaching practices for the new educational programme that you feel will develop practical interpersonal and communication skills amongst preceptors. You will also be asked to engage in a series of online co-design workshops and provide feedback on iterations of the programme as it is designed and created.

CONFIDENTIALITY

The researcher will be responsible for overseeing the confidentiality of all participants is maintained. All information collected during the study will be stored securely on password-protected computers. All participants will agree to maintain the confidentiality of the information discussed by all participants and researchers during the co-design workshops.

WHAT ARE THE BENEFITS OR RISKS ASSOCIATED WITH THE STUDY?

The findings of this study will contribute to existing literature and redound to the benefit of society, considering that interpersonal relationships of a preceptorship play an essential role in providing effective patient care and facilitating nursing education in Irish hospitals. The findings will inform the design of an innovative new preceptorship education programme.

To acknowledge your contribution as a co-designer in this study, you will be listed as a co-designer in the new educational programme or any publications or conference proceedings that emerge from the study if you consent. No individual participant will be identified in any publication or presentation, and only anonymized data will be used in these reports and publications. Please also note that the latest public health guidance on COVID-19 will always be maintained throughout the study.

RIGHT TO WITHDRAW

You can decide to withdraw from the study at any point without penalty. You can contact the researchers to request this.

HOW WILL MY INFORMATION BE USED?

The findings from this study will be presented at a university level and at national and international conferences. The findings will also be submitted for publication in peer-reviewed journals.

NEXT STEPS

If you are willing to participate in the study, we ask you to please return the attached consent form to Philip Hardie (a scanned copy can also be sent to the email address below).

FURTHER INFORMATION & CONTACT DETAILS: If you have any further questions about the research or would like information on the findings, you can contact:

Philip Hardie

E: philip.hardie@ucd.ie Ph: 01 7166472

Prof Suzi Jarvis Dr Catherine Redmond

E: suzi.jarvis@ucd.ie E:-catherine.redmond@ucd.ie

Consent to participate

	Yes	No
I have read and understood the Participant Information leaflet		
I have had the opportunity to ask questions and discuss the study		
I have received satisfactory answers to all my questions		
I have received enough information about this study		
I understand that I am free to withdraw from the study at any time without giving a reason		
I agree to participate in a one-to-one interview		
I agree to participate in the co-design workshops		
I agree to the recording of the one-to-one interview		
I agree to maintain the confidentiality of the information discussed by all participants and researchers during the co-design workshops		

I agree to the process of my data		
I agree to take part in the study		
I permit material/data to be stored for possible future research related to the current study without requiring further consent, but only if a Research Ethics Committee approves the research.		
I agree to have my name listed as a co-designer in the new educational programme or any future publications		

Appendix E: Information Leaflet and Consent Form: Members of the Public/Patient

Please note that this form was converted to a digital form using google forms.

Title of Study: Co Designing and Co Creating a new nurses' education programme that focus on developing interpersonal and communication skills.

Name of Principal Investigator:
Philip Hardie PhD Student

Thank you for taking the time to read this information leaflet. You are invited to participate in a research study. Before you decide to do so, we need to be sure that you understand, firstly, why we are doing it, and secondly, what it would involve if you agreed. We are therefore providing you with the following information. Please take time to read this information carefully and be sure to ask any questions you might have and, if you want, discuss it with others. The research team will do their best to explain the project to you and provide you with any further information you may ask for now or later.

WHAT IS THE PURPOSE OF THIS STUDY?

The project's overall objective is to create an innovative teaching tool for developing interpersonal and communication skills in nurses. The researcher aims to design and create a new practical "how to" based educational programme that will allow nurses to actively engage and reflect on their developing interpersonal and communication skills, particularly those involved when interacting with student nurses and patients.

This research involves a co-design approach, i.e., we want to work with people who have recently been in a teaching hospital and experienced interpersonal interactions with staff nurses and student nurses during their time at the hospital. We feel this project is an exciting opportunity to understand the patient's experiences central to the interpersonal experiences between the patient, staff nurse and student nurse to provide an authentic learning tool that may help develop nurses' interpersonal and communication skills.

WHY HAVE I BEEN CHOSEN?

You are invited to participate in this research because we feel that your recent experience of being a patient in a university teaching hospital can contribute to our understanding and knowledge of your perceptions and experiences of interpersonal interactions with staff nurses and student nurses. Particularly if you were involved in a teaching session by a staff nurse for the student nurse.

WHAT WILL HAPPEN IF I VOLUNTEER?

Your participation is entirely voluntary. If you would like to participate in the study, you will be asked to participate in a one-to-one interview with the lead researcher Philip Hardie. During this interview, you will be asked by the researcher to tell your story about your experiences as a patient and the interpersonal interactions with staff nurses and student nurses while in the hospital. You will also be asked to identify key educational topics and teaching practices you feel will help develop positive interpersonal relations between a student, nurse and patient. The interview may last up to 1 hour, depending on the discussion. Given the current circumstances related to Covid-19, the interview will be conducted online using a computer/tablet/smartphone, and it will take place at a convenient time to you. You do not have to share any information that you are not comfortable sharing. With your permission, the interview will be recorded and transcribed with no identifiable information. Following this interview will be invited to participate in a series of co-design workshops in which you will collaborate with nursing, educational and design experts to co-design and create a new educational programme. At the co-design workshops, you will have an opportunity to share your opinions and ideas to co-design the new educational programme.

DO I HAVE TO TAKE PART?

No. It is up to you to decide whether or not to take part. If you decide to participate, you will be given this information sheet to keep and asked to sign a consent form. However, you are still free to withdraw at any time and without giving a reason. A decision to withdraw at any time, or a decision not to take part, will not affect your medical care or your rights.

ARE THERE ANY BENEFITS FROM MY PARTICIPATION?

You may or may not benefit from your participation in this study, but the information we obtain may help better educate and train interpersonal and communication skills for staff nurses in the future.

ARE THERE ANY RISKS INVOLVED IN PARTICIPATING?
As this is a non-invasive study, no significant risks are associated with your participation. However, if you experience any difficulty, please contact the lead researcher, whose contact details are listed below.

IS THERE ANY COST OR FINANCIAL REIMBURSEMENT INVOLVED IN PARTICIPATING IN THE STUDY?
There are no costs or other financial consequences related to participating in this study. Participants will not receive any financial compensation for participating in the study.

WILL MY INFORMATION BE KEPT CONFIDENTIAL IN THIS STUDY?
All data will be protected against unauthorised access. University College Dublin will safely store the data collected about you. Your name provided in the Consent Form will not be linked to the information you provide. This means that your name will not be used in connection with any of the data collected, and there will be no link between your answers and your personal information. In this way, it will not be possible for anyone to identify your responses. All participants will agree to maintain the confidentiality of the information discussed by all participants and researchers during the co-design workshops. The lead researcher involved in this study will ensure that the resulting material will be stored in a safe, anonymised location for no longer than two years after the completion of the study. Only completely anonymised data will be shared with lead researchers' supervisors and the team on instructional designers involved in designing and creating the immersive virtual reality storytelling experience. Similarly, any publications that may result from this study will not include any personal data. If you consent, you will only be acknowledged as a co-designer on the new educational programme and any future publications. You can oppose your consent to processing your data at any time. After this decision, no further data from you will be collected. Moreover, all members implicated in this study are bound and guided by the European data protection standards (GDPR).

RIGHT TO WITHDRAW

You can decide to withdraw from the study at any point without penalty. You can contact the researchers to request this.

HOW WILL MY INFORMATION BE USED?

The findings from this study will be presented at a university level and at national and international conferences. The findings will also be submitted for publication in peer-reviewed journals.

NEXT STEPS

If you are willing to take part in the study, we would ask you to please contact the lead researcher Philip Hardie (details provided below).

FURTHER INFORMATION & CONTACT DETAILS:

Philip Hardie is leading this research project, a PhD Student in the School of Nursing Midwifery and Health Systems, under the direct supervision of Prof. Suzi Jarvis (Director of UCD Innovation Academy and Dr Catherine Redmond (Assistant Professor/Lecturer in Nursing).

If you have any further questions about the research or would like information on the findings, you can contact:

Philip Hardie

E: philip.hardie@ucd.ie Ph: 01 7166472

Prof Suzi Jarvis Dr Catherine Redmond

E: suzi.jarvis@ucd.ie E:-catherine.redmond@ucd.ie

Consent to participate

	Yes	No
I have read and understood the Participant Information leaflet		
I have had the opportunity to ask questions and discuss the study		
I have received satisfactory answers to all my questions		
I have received enough information about this study		
I understand that I am free to withdraw from the study		

at any time without giving a reason		
I agree to participate in a one-to-one interview		
I agree to participate in co-design workshops		
I agree to the recording of the one-to-one interview		
I agree to maintain the confidentiality of the information discussed by all participants and researchers during the co-design workshops		
I agree to the process of my data		
I agree to take part in the study		
I permit material/data to be stored for possible future research related to the current study without requiring further consent, but only if a Research Ethics Committee approves the research.		
I agree to have my name listed as a co-designer in the new educational programme or any future publications		

Participant's Signature: _____ Date:

Appendix F: Information Leaflet and Consent Form: Design Experts

Please note that this form was converted to a digital form using google forms.

Title of Study: Co Designing and Co Creating a new nurses' education programme that focus on developing interpersonal and communication skills.

You are invited to participate in a research study. Thank you for taking the time to read this information leaflet.

RESEARCH TEAM

Philip Hardie is leading this research project, a PhD Student in the School of Nursing Midwifery and Health Systems, under the direct supervision of Prof. Suzi Jarvis (Director of UCD Innovation Academy and Dr Catherine Redmond (Assistant Professor/Lecturer in Nursing). Relevant contact details can be found at the end of this document.

WHAT ARE THE OBJECTIVES OF THIS STUDY?

Nursing preceptorship plays a central role in nursing education. Preceptorship is defined as a professional educational relationship situated within the clinical hospital environment, between a staff nurse (the preceptor) and a graduate or student nurse, involving the delivery of patient care. Therefore, this professional relationship comprises a triadic relationship between the student nurse, preceptor, and the patient. The purpose of this PhD research project is to explore students, preceptors, patient's experiences, and perspectives of nursing preceptorship relationships to co-design and co-create a new practical "how to precept" based educational programme that will allow preceptors to actively engage and reflect on their developing interpersonal and communication skills associated with nursing preceptorships. This study will be conducted to address the following questions:

- What are students', preceptors' and patients' experiences and perceptions of nursing preceptorship relationships in a general hospital setting?
- What key educational topics and pedagogical approaches are identified by students, preceptors, and patients, in collaboration with nursing and education experts to develop an effective preceptorship education programme for developing interpersonal and communication skills?

WHY HAVE I BEEN INVITED TO TAKE PART?

You have been approached to participate in this research project as you are an expert in the field of _____. The researcher believes your expert knowledge,

skill, and experience can positively contribute to the design and development of the new preceptorship education programme.

WHAT WILL HAPPEN IF I VOLUNTEER?

Your participation is entirely voluntary. If you agree to participate, you will be invited to participate in the study, where you will be offered the opportunity to take on the position of instructional co-designer. You will be part of a wider team to systematically design and develop a new preceptorship education programme in collaboration with students, nurses, patients and other leading experts in the field. You will be asked to join a series of design workshops over 18 months, commencing in January 2021. You will be asked to engage in a series of co-design workshops and provide feedback on iterations of the programme as it is designed and created.

WHAT ARE THE BENEFITS OR RISKS ASSOCIATED WITH THE STUDY?

The findings of this study will contribute to existing literature and redound to the benefit of society, considering that interpersonal relationships of a preceptorship play an essential role in providing effective patient care and facilitating nursing education in Irish hospitals. The findings will inform the design of an innovative new preceptorship education programme. To acknowledge your contribution as a co-designer in this study, you will be listed as a co-designer in the new educational programme or any publications or conference proceedings that emerge from the study if you consent. No individual participant will be identified in any publication or presentation, and only anonymized data will be used in these reports and publications. Please also note that the latest public health guidance on COVID-19 will always be maintained throughout the study.

CONFIDENTIALITY

The researcher will be responsible for overseeing the confidentiality of all participants is maintained. All information collected during the study will be stored securely on password-protected computers. All participants will agree to maintain the confidentiality of the information discussed by all participants and researchers during the co-design workshops.

RIGHT TO WITHDRAW

You can decide to withdraw from the study at any point without penalty. You can contact the researchers to request this.

NEXT STEPS

If you are willing to take part in the study, I would ask you to please return the attached consent form to Philip Hardie (a scanned copy can also be sent to the email address below).

FURTHER INFORMATION & CONTACT DETAILS: If you have any further questions about the research or would like information on the findings, you can contact:

Philip Hardie
E: philip.hardie@ucd.ie Ph: 01 7166472
Prof Suzi Jarvis Dr Catherine Redmond
E: suzi.jarvis@ucd.ie E:-catherine.redmond@ucd.ie

Consent to participate

	Yes	No
I have read and understood the Participant Information leaflet		
I have had the opportunity to ask questions and discuss the study		
I have received satisfactory answers to all my questions		
I have received enough information about this study		
I understand that I am free to withdraw from the study at any time without giving a reason		
I agree to participate in a one-to-one interview		
I agree to participate in co-design workshops		
I agree to the recording of the one-to-one interview		
I agree to maintain the confidentiality of the information discussed by all participants and researchers during the co-design workshops		
I agree to the process of my data		
I agree to take part in the study		
I permit material/data to be stored for possible future research related to the current study without requiring further consent, but only if a Research Ethics Committee approves the research.		
I agree to have my name listed as a co-designer in the new educational programme or any future publications		

Participant's Signature: _____ Date:

Appendix G: Semi structured Interview Guide

Theme	Student	Preceptor	Patient
General Experiences	Can you tell me about your experiences of working with your preceptors on clinical placement ? What stage of your nursing programme?	Can you tell me about your experiences of being a nurse preceptor? How long have you been a preceptor ?	Can you tell me in your own words how you came to be admitted to hospital and your subsequent experience of receiving care from nursing staff and student nurses? Were you ever involved in a teaching session by a staff nurse for a student nurse? Can you tell me what that experience was like for you ?
Touch Points	Have there been any key moments that you feel have shaped your experiences of being involved in a nursing preceptorship either positively or negatively?	Have there been any key moments that you feel have shaped your experiences of being involved in a nursing preceptorship either positively or negatively?	Were there any key moments in this experience that stood out for you? Why? What was that like for you ?
Suggestions for themes for the educational tool	The aim of this new educational package is to help educate trainee preceptors to create and facilitate positive interpersonal relationships. What key topics do you feel should be included in the new educational package to help achieve this? What would you want users of the package to learn?	The aim of this new educational package is to help educate trainee preceptors to create and facilitate positive interpersonal relationships what key topics do you feel should be included in the new educational package to help achieve this? What would you want users of the package to learn?	The aim of this new educational package is to help educate trainee preceptors to create and facilitate positive interpersonal relationships between the nurse, student, and patient. what key topics do you feel should be included in the new educational package to help achieve this? What would you want users of the package to learn?
Orientation	What have your experiences been to date with orientation to your placements by your preceptors? What was good , what was bad? Do the preceptors include the patients in your orientation , do they explain the purpose of the professional relationship and your role to the patient ? Do you think it is important ?	As a preceptor when orientating a student to their placement , what do you feel are the key processes to facilitating a positive structured orientation experience? Do you include the patients in the student's orientation? Do you think it is important to include the patient at this stage? What methods do you think are the most effective in orientating a student?	When you were in hospital did the staff nurse ever introduce themselves as the staff nurse and student and explain to you the relationship between them , and your involved in this relationship ? How did you feel about being in this situation? Was the purpose explained to you? Do you think it is important the patient is involved in the student's orientation to their placement?
Individual Qualities of Preceptorship Members	What individual qualities do you think preceptors should exhibit to create positive relationships with students and patients? What individual qualities do you think could negatively impact the relationships with students and patients?	What individual qualities do you think preceptors should exhibit to create positive relationships with students and patients? What individual qualities do you think could negatively impact the relationships with students and patients?	What individual qualities do you think nurses/student nurses should exhibit to create positive relationships with students and patients? What individual qualities do you think could negatively impact the relationships with students and patients?
Open Dialogue	Open dialogue has been established as a positive influencing factor in creating positive interpersonal	Open dialogue has been established as a positive influencing factor in creating positive interpersonal	What do you think are the best ways a nurse/student nurse can keep the channel of

	relationships by creating an inviting and conducive learning environment; in other words, "keeping the channels of communication open" helps the relationships : from a student perspective how do you think a preceptor should achieve this with both the students and patients?	relationships by creating an inviting and conducive learning environment; in other words, "keeping the channels of communication open" helps the relationships . As a preceptor how do you think you can achieve this with both the students and patients?	communication open with their patients ?
Feedback	Feedback is an important part of a nursing preceptorship; what has been your experience of preceptors' feedback to date? In your opinion how do you think a preceptor can create a collaborative and bidirectional feedback process with students? Do you think the patient should be involved in the feedback process?	Feedback is an important part of a nursing preceptorship, as a preceptor how do you think preceptors can provide students with opportunities to actively partake in the process? Do you include patients in the feedback process? If you were giving a student feedback in front of the patient, how do you think you can involve the patient in the process? How do you think that would made the patient feel?" "Would you ever give negative feedback in front of a patient to improve student performance?	A major role for the staff nurse is to provide the student feedback. Have you ever observed a nurse giving student feedback , how did you feel at the time, did the nurse involve you in the feedback process, would you like to be involved when the nurse is giving the student feedback?
Sense of Commitment	Did you feel your preceptor was committed to their role and educating you? What made you feel this? What characteristics and qualities do you think a preceptor must demonstrate to students to show they are committed to their role of being your preceptor?	As a preceptor how do you show your students you are committed to your role of being their preceptor? What characteristics and qualities do you think are fundamental to achieve this?	How do you feel a nurse/student nurse can demonstrate they are committed to your care and including you in this relationship?
Workplace Incivility	Unfortunately, workplace incivility such as rudeness, anger and humiliation has been reported by students while working with staff nurses ; did you ever observe or experience any incidences of this? If so, how did you feel at the time? If answer is no: How do you think you would feel if you were the student or patient observing such behaviour?	Unfortunately, workplace incivility such as rudeness, anger and humiliation has been reported by students while in front of patients from preceptors; did you ever observe or experience any incidences of this? If so, how did you feel at the time? If answer is no: How do you think you would feel if you were a student/patient?	Unfortunately, workplace incivility such as rudeness, anger and humiliation has been reported by students while working with staff nurses ; did you ever observe or experience any incidences of this? If so, how did you feel at the time? If answer is no: How do you think you would feel if you were a patient observing such behaviour?
Any final thoughts or suggestions	Before we finish up is there anything else you would like to add, any final thoughts or suggestions you may have ?	Before we finish up is there anything else you would like to add, any final thoughts or suggestions you may have ?	Before we finish up is there anything else you would like to add, any final thoughts or suggestions you may have ?

Appendix H: Student, Preceptor & Patient Touchpoints and overarching target behaviours to include in educational programme

Student Touchpoints	Examples	Overarching target behaviours to include in educational programme
First Impressions	Positive Experience: “It was noticeable when I got an excellent Preceptor because the first thing, I noticed was a warm welcome to the ward. That was unbelievable and simple things, a smile or “oh welcome” or “this is a student nurse who’s joining us”. Once you got that kind of initial feeling, you knew you had a good Preceptor. It was an excellent first impression.” Negative Experience: "Unfortunately, I've had many a Preceptor who just ignored the fact that I was even standing there. They didn't introduce you to anyone or didn't even say hello, which I found quite rude. There's just no need to be so unpleasant. You'd know straight away. Who would be the nurse that would help you because they'd offer you a seat for handover, a simple thing like that, rather than leaving you standing outside the group? The most negative experience for me was meeting with my preceptor. She was not prepared to meet me. She made me feel rejected and seemed to have so little interest in me when I spoke to her. That made me feel afraid, and I began to wonder how I would go back in there again tomorrow”.	Creating positive first impressions Creating positive personal introductions Creating welcoming environment
Teaching moments	Positive Experience: "A nurse came to me and said, so, you're a second-year student. And she started asking me questions about the patients' conditions. It was a bit terrifying in the beginning. But after she finished, I was so thankful that she did that because she put me under that pressure, and I learned... If she asked me something and I said, "I don't know", she said, "That's fine, don’t worry about it. that's why I'm here to help you". Then she started explaining to me, and I was so grateful for that".	Highlighting positive characteristics and barriers to effective teaching in the clinical environment and their impact on students learning. Highlight impact levels of commitment on teaching have on student experience

	Negative Experience: "Some preceptors, I've asked a question, and they get almost defensive of you asking the questions. It is like they are not sure of the answer. But then other preceptors will task you and admit they don't know the answer, and they'll ask you to research it, and you can come in the next day and teach them. They should not get offended or shut down the student for asking a question. It affects our learning".	Effective communication practises for teaching in the clinical environment.
Language for feedback	Positive Experience: “When we left the room, my Preceptor gave me great affirmations about the whole thing, about how I spoke to the patient, that I had explained why and how I was doing the procedure. My Preceptor said, "OK, you did this brilliantly. You could have done this better for the next time. And she gave me clear things that she wanted to work on, and that was just so helpful and helped me learn even more". Negative Experience: “Any feedback I did receive without asking for it was usually: "you did this wrong without a full explanation on where I had gone wrong". So, it typically ends up with me apologising and saying I'll do it better next time. And that was the end of the feedback. It would be nice to receive positive verbal feedback "Well done, you've done very well". You want to hear that from time to time, not every day, but when you're doing something, you want to hear. Yes, you've done well. It gives you confidence, not just focusing on the negative”.	Effective and constructive language to use during feedback Importance of regular verbal feedback Appropriate locations to provide feedback
Feeling safe to learn	Positive Experience: " I'll always remember when my preceptor said to me that "errors are normal, that making mistakes is human, and that perfection isn't expected of me. So don't be afraid to ask questions if you're not sure of anything. I would prefer you to ask them than pretend to know something". It made me feel comfortable, and I knew what was expected of me. I learned so much on that placement". Negative Experience:	How to create a safe learning environment for students (psychological safety)

	"I had already completed eight out of ten of my supervised medication rounds. And so, I was surprised when a preceptor I had never worked with before stood over me as I was getting the medication ready. Out of nowhere, she quite aggressively snapped the medication cup from my hand, saying, "you're taking too long; we will be here all day". I knew I was shaking, I was nervous, and it wasn't because I was scared to do this skill, but it was the intimidation that my preceptor put on me".	

Preceptor Touchpoints	Examples	Overarching target behaviours to include in educational programme
Feedback	Positive Experience: “Getting good feedback from the students expressing their gratitude, saying, "thank you, thanks for all your help today I really learned a lot". Or "you helped me to understand that medical condition", or "you showed me how to do that procedure, thank you". Those are positive experiences. I do enjoy teaching. I like imparting my knowledge to the student nurses. They are the next generation of nurses". Providing feedback: “If there are issues or areas that the student needs to improve on, you must say it to the student but do it privately. I would never really give negative feedback in front of anybody, even if it's something minimal. We've all been the student going into meetings, they are so nervous. I would never want somebody to feel down over getting negative feedback in front of anybody. You don't want to make them to feel like they're no good. For your colleagues or patients to see and hear you giving negative feedback would make it so much worse for the student".	Creating bidirectional feedback opportunities for students and preceptors Time and locations to provide feedback
Pressure and guilt in failing a student	“I have had instances where I have had to fail students, which has been upsetting for both the student and me. You can sort of feel; I suppose maybe are you failing them as opposed to them failing you! The spotlight is on you a lot of the time. It can be time-consuming; you put a learning plan in place, put a lot of work into it, and do your best to	Strategies to deal with pressure or feelings of guilt if failing a student i.e. How to provide effective constructive feedback.

	ensure that somebody is competent. But at the end of the day, you still have to say it's a health care profession and specific standards you need to achieve. It's a massive pressure on me to say, no, you're not competent. There's a bit of guilt that you're failing them; they're under your wing. I'd feel anxious if I had passed the person, you know, am I sending them out to be somebody's nurse".	
Creating a safe learning space for students	"When talking to students, you should make them comfortable and at ease. They normally do good then, and you give them good feedback. You see them walking out with a smile. They're always very thankful. And you get the sense that they're excited to come back. You might get some good feedback from students that they have felt you have helped them learn or helped them enjoy the day or whatever it may be. It's making them comfortable chatting to you and their patients. It's rewarding". "As a staff nurse, there is a lot you don't know, but the students expect you to know. You don't want them to think you are thick. That's why you tell them to look it up. If I had the time, id would say come on, and we can look it up. And then we'll both know, instead I send them off by themselves" "There can be a culture in my ward. The (students) are scared to ask questions, they don't want to annoy the nurse, so they keep away from them. Then at the student's meeting, the preceptors give the students negative feedback. The preceptors feel like the students aren't interested and don't want to be there. That's what kind of adds fuel to the fire then for them. Then the students are like; I can't be right either way. Do you want me to ask questions? Do you not want me to ask questions? It's challenging for students to learn new nursing skills and figure out what each nurse is like? Personalities are very different for different people, and different nurses will expect you to do different things. So, it's tough for the students ".	Fostering safe learning environments for students Open communication concerning lack of knowledge; create a psychological safe learning environment How to create an open and collaborative relationship where student/preceptor set expected behaviours in the relationship where students can feel safe to ask questions

Socio cultural factors	"I've seen a staff member speak inappropriately to a student in front of other staff. The nurse said to the student, "why are you giving your opinion on the situation" referring to a patients nursing care management, "no one asked you, go back to the nurses' station and finish the notes. The student was blatantly excluded from the conversation. It's hard to watch because it is a cultural thing on the ward, and you don't want to say anything in case they start speaking to you like that then too".	Highlighting the impact workplace incivility has on students and colleagues in psychological safety
Environmental Factors: Time	"The ward might be too busy and short staffed, and you can't give your time to them (student). Fourth years, you know, they're well able to do their own thing and come to you if they need to, but especially for first years, you feel like you can't give them the time they deserve or need to learn. It makes you feel a bit crap that you can't give them the time. They might go home at the end of the day and say either I did nothing for the day because I was standing around or my Preceptor had no interest in me. I don't like the feeling that they think you don't want to look after them. It can be frustrating".	Open communication techniques to inform students of time constraints and difficulties to create a greater understanding of preceptor's perspective and position

Patient Touchpoints	Examples	Overarching target behaviours to include in educational programme
Positive interaction with students	"My interaction with the student nurses and what I've seen around me are very good at interacting with the patient. And I mean, we used to have some fun up there, and they were so good, nothing was too much trouble for them if you know what I mean..... And months afterwards, when I went back up for a Check-Up, some nurses said, "l saw you there, so I thought I'd come over to see how you're getting on". I thought, god, so many people coming in, they're not going to recognise anybody. But they came. They saw you going in. How are you? Which I thought was nice. If I had to go back into the hospital, I thought, thank god, that nice girl would be here".	Making the patient feel welcome

Patients involved in a teaching session	"I think it's really bad when the nurse asks you whether the student can observe when they are already in the room. You don't have a choice then as you don't want to come across as being difficult or making them (student) feeling unwanted, or you feel the nurse may not spend as much time with you then" "I want to be involved in giving feedback. For example, when I got my dressing changed, the pain I experienced was very subjective. The nurse who has been putting on the bandage was clearly used to doing it a particular way for years. She never asked me how I liked it to be changed or how my pain was. So, I think it necessary to get patient feedback. It's good for students to hear the patients' experiences and learn from them. But I would like to give feedback to the student directly after the nurse has gone so that the student knows next time. I would not want to make it a negative experience by putting the student on the spot and saying it in front of the nurse. I'd give it in a roundabout way rather than directly pointing it out as I know they're learning".	Guidelines on how to approach patients to seek permission for students to observe or be involved in the patient's care as a teaching session and involve patient in the feedback process.
Being treated like a human and not a patient	"She (the student) walks into the room and says, good morning, everybody. How are you this morning? Everybody said, (student name), how are you? And she's like, oh, God, I'm so tired. I stayed up half the night watching a film instead of doing my homework. You know that carry-on, and everyone is just starting to smile and laugh and, you know, I must admit, genuinely, they were the nicest bunch of nurses I've ever come across in my life. Just normal people who treated us like humans and not a patient".	Importance of person-centred communication i.e., communication beyond patients' care.
Continued communication of patients' care.	" So, I've had really good experiences in hospital. All the nurses and doctors seem to coordinate and communicate with the patients. You get a sense of being looked after. I felt like my issue was being dealt with, and I had confidence in the care I was receiving. The culture is	Importance of open and continued communication with patients on their care and daily routine with their nurse/student to make them feel part of the team.

	there. They look after the patient and work together as a team, communicate with you and are endearing towards you. Asking if you are, okay? Or if they were going home for the day, telling you, so you know what's going on".	

Appendix I. NMBI Letter of Programme Accreditation

Bord Altranais agus
Cnáimhseachais na hÉireann
Nursing and Midwifery
Board of Ireland

Philip Hardie
Special Lecturer/ Clinical Nurse Tutor
School of Nursing, Midwifery & Health
Systems University College Dublin
Belfield, Dublin 4

15 July 2022

Re: Category 1 Approval

Dear Mr Hardie,

Thank you for your correspondence requesting Category 1 approval. I confirm NMBI post registration Category 1 approval as outlined below:

Name of Programme	**Approval Date From -To**	**NMBI CEU's**
Interpersonal and Communication Skills Preceptorship Education Programme	14 June 2022 – 14 June 2024	8

The NMBI has granted Continuing Education Units (CEUs) as specified above. Only registered nurses and registered midwives shall receive CEUs.

Programme facilitators must utilise and reference relevant NMBI publications, which direct and guide nurses' and midwives' professional practice. *The Scope of Nursing and Midwifery Practice Framework* (NMBI 2015) provides nurses and midwives with professional guidance and support on matters relating to the scope of their clinical practice, which is paramount for programmes of education that incorporate clinical skills and competency assessment.

I wish to advise that NMBI does not support or endorse any pharmaceutical products/companies in providing nurse/midwife education.

Wishing you every success with the programme.

Yours sincerely,

Carolyn Donohoe
Director of Education, Policy and Standards Department

18/20 Ascaill Dhún Charúin, An Charraig Dhubh,
Contae Bhaile Átha Cliath, A94 R299, Éire.

18/20 Carysfort Avenue, Blackrock,
Co. Dublin, A94 R299, Ireland.

T: +353 (0)1 639 8500
www.nmbi.ie

Appendix J. Conflict Resolution: Preceptorship Guidelines for conflict with student nurses.

The first defence: Prevention is better than cure.

Steps	Rationale	Examples
Get to know your students as individuals and build sustainable relationships with each student. * Remember, always refer to them by name and avoid referring to them as 'the student.'	This helps you foster good working relationships with your students, reducing the risk of conflict.	"Hi, my name is ..... I am your preceptor. You are very welcome. What is your name?" Please refer to Unit 2 Psychological Safety & Unit 3 First impressions and orientation.
Reassure your students that they are welcome and part of the team.	This helps students feel part of the team and help foster good working relationships with your students, reducing conflict risk.	"I am delighted to be working alongside you for the next few weeks; if you have any questions, please do not hesitate to ask me or anyone else, we all work as a team here, and you are welcome to the team".
Be clear of your expectations of students' conduct, clearly identifying what behaviour is not tolerated. Similarly, discuss the student's expectations of your conduct.	This helps eliminate or reduce confusion regarding students' and preceptors' expected conduct (NMBI: Code of Conduct) and promotes professionalism, thus clarifying and focusing on students'/preceptors expected behaviours, increasing the students' chances of success in achieving their learning outcomes and competency for the placement thus reducing the risk of possible conflict.	You expect students to turn up on time, in full uniform, 5 mins before the start of handover. You will not tolerate students turning up late for the report or sitting at the computer when all the morning rounds have not been completed. You will treat students with respect and help them achieve their learning outcomes by guiding and teaching them throughout their practice placement.
Thank your students for their contribution to the team.	This helps establish an inclusive and appreciative environment where the student feels valued and part of the team, promoting empowerment, self-efficacy, and self-confidence, resulting in a positive clinical learning environment reducing the risk of conflict.	Sometimes, something as simple as a 'thank you goes a long way! "Thank you for all your help today; we could not have managed without you. You are an asset to the team". "I appreciate all your help today; it has not gone unnoticed".

Treat all students with the same level of importance and avoid favouritism.	Students who perceive their preceptors to give preferential treatment to a particular student can damage other students' confidence and create a negative interpersonal barrier and resentment towards the preceptor resulting in conflict.	Picking the same student to do medication rounds with you each day. Explain a procedure in detail to one student and only provide another student with a brief description. Praising one student for their work and not another student.
Respect students' points of view, background and working styles.	Respecting students' points of view, background, and working styles build feelings of trust, safety, and wellbeing, reducing conflict risk.	To establish students' point of view, ask: How do you feel about …? In your opinion…? What is your opinion on …? To establish the student's background, "tell me a little about yourself... "Where are you from? "Where have you worked before?" To establish working style: "Do you prefer to work independently? Do you prefer to team nursing? How would you like to manage our patient workload?
Anticipate any potential conflict within this new professional relationship.	Heavy patient workload, staff shortages etc., are environmental factors that could lead to conflict. Personal factors include poor communication, lack of role clarification etc. Identifying these factors and being transparent with your students will help reduce the risk of conflict.	"As you can see today, we are very short-staffed, and we have a full ward. I may not be able to show you as much as I would like today, but if you have any questions, please do ask, and if we get a quiet moment in the afternoon, I will go through some skills with you."
Understand any academic or personal pressures that might affect your students at work.	Academic and personal pressures can come from various potential sources and have many emotional and academic impacts on students. Understanding and empathising with students will help reduce the risk of conflict. Sharing your own challenges, you experienced as a student and resources	"Please let me know if you are finding anything difficult at the moment with work or college, if you have any assignments due, or if you have anything going on outside work that may be causing you stress. I may not have all the answers, but I will help in any way I can or point you in the direction of practical resources I know".

	you found useful can help build a positive relationship.	
Talk frankly about any difficulties students may have had in achieving their learning outcomes in previous placements in a non-judgmental two-way discussion.	This creates an open, non-judgmental environment where students can discuss areas of difficulty, how they overcame those difficulties, and areas they wish to continue building their competence, reducing the risk of defensive behaviours from students, therefore, reducing the risk of possible conflict.	"Have you had any difficulties on your previous placements? Are there any areas that you feel you need to work on? I only ask so that we can work together to reinforce your previous learning and help you further develop these skills".
Establish clear and achievable learning goals at the initial NCAD meeting.	Establishing clear and achievable learning objectives will optimise students learning and decrease the risk of conflict as clear expectations are set from the initial NCAD meeting.	Go through the NCAD, and discuss specific, measurable, attainable, relevant, timely learning objectives per your clinical area and student's stage of the programme. Ensure they are reviewed throughout the placement.
Do not rely on formal preceptorship meetings to assess students' performance; give regular and constructive feedback as a two-way conversation.	Providing regular feedback creates an open channel of communication regarding a students' performance, helps students learn from their mistakes and builds confidence, therefore, reducing the risk of conflict if areas of improvement are required and highlighted during the student's NCAD meeting as the student will have had an opportunity to improve before being assessed for NCAD.	Please see unit 5: Feedback for examples.
Address poor performance at an early stage.	By addressing apparent issues that need addressing at an early stage, students can discuss and learn from the feedback and discuss any additional support or resources available for learning. It provides time to achieve their learning outcomes and decreases the likelihood of conflict as it is not being raised in a formal NCAD meeting.	Identify and discuss with your student-specific actionable areas that need improvement. Ask simple open-ended questions about how the student is doing and whether anything is affecting their performance (personal or health issues). Offer support and identify any additional available resources, e.g., student

		services and educational resources.
Separate the person from the problem.	This allows you to view the problem (e.g., poor practice from a student) as a specific behaviour or set of circumstances rather than attributing negative feelings to the whole person (student), reducing the risk of the student feeling a personal attack, therefore reducing the risk of conflict when discussing the problem.	Do not generate negative feelings towards students' overall competency and abilities over one particular issue, as this will lead to conflict. Communicate and listen to your student, do not allow emotions to play a role in the process.

Facilitating a constructive conversation when conflict occurs.

Intervene quickly in cases of conflict in a sensitive, fair, and constructive way. Be proactive and initiate informal discussions if you think a problem's brewing.	This shows you are treating the conflict seriously but wish to resolve it at a local level fairly and constructively by also hearing the student's point of view. Conflict avoidance is counterproductive. When we refuse to communicate, simple misunderstandings and one-off events become more significant and systemic challenges.	"Can we have a quick chat about what happened this morning? I do not want this to fester or create a negative atmosphere. I think it is important we discuss the situation and how you feel so that we can resolve any issues and continue working together as a team".
Choose an appropriate private and quiet location (not in front of patients or colleagues).	By choosing an area that is quiet and neutral, away from colleagues and patients, both you and your students can discuss your conflict perspectives and prevent other colleagues from getting needlessly involved.	"Would it be okay if we went somewhere quiet to have a chat, I think it is important we discuss what happened and how you are feeling about the situation"?
Describe the concern/issue in a neutral, specific, and descriptive manner, allowing the student to visualise the situation. Do not judge, do not generalise, do not diagnose –describe the event that caused you concern. Explain its impact. Explain what you would have preferred to have seen or experienced instead.	This permits the student to visualise the situation in a non-judgmental tone, its impact and what you wish would have occurred.	(Describe conflict events in a neutral, specific, and descriptive manner). Be empathic "I need to talk to you about something difficult for me to discuss and might be difficult to hear regarding (identify a specific concern)."

Encourage your student to talk. Listen carefully to their concerns. Ensure active listening & avoid interrupting when a student is trying to explain their point of view. Establish the root of the disagreement.	Careful listening is one of the best ways to handle conflict as it allows you to validate others' ideas and let them know that they are being heard, regardless of whether you agree.	"How do you feel this morning went? What did you think about (describe conflict event)? It is important to hear your perspective, how do you feel about the situation". "Tell me more about what happened this morning, and I want to understand."
Remain calm and objective, avoid taking sides (if a conflict occurs between student and staff nurse) and do not make assumptions or make hasty judgments. Do not place blame on one individual for the conflict. Ensure you have the complete picture.	Conflicts worsen when the arguing parties become emotional, and the argument becomes personal. The best way to handle conflict is to remain calm and objective: Calmer minds produce clearer ideas. Keep an open mind to others' opinions and ideas. Avoid being defensive or pointing fingers.	"I think it is important we establish the full picture about what occurred to understand the situation better. What do you think? How do you feel about the situation?" "Can we discuss what happened this morning so we can resolve any miscommunications or misunderstandings? I do not want it to affect our professional relationship?".
Model neutral language	Inflammatory language such as profanity, name-calling, and exaggerations escalate the conflict.	Statements that begin with "I", "From my perspective", or "The way I see it…" make it clear that you are speaking for yourself. "I" statements focus on your experience, thoughts, feelings, reactions, and decisions and not on any beliefs or judgments you may have made about the student.
Try not to react emotionally to another's emotional outbursts (yelling or anger).	Reacting emotionally can further escalate the conflict. If your voice remains calm, you will keep the attention and respect of the other person. When you control your emotions, you can communicate your needs without threatening, intimidating, or punishing others. Sometimes the student may not realise they	"I understand that you are upset……. I hear what you are saying regarding…… however, I feel like you are shouting at me…. or can I ask why you are shouting at me". The preceptor must demonstrate situational awareness of both their own emotions and those of the

	are reacting emotionally (yelling). Explain that you feel they are yelling at you, or ask them why they are yelling. This often deescalates tension and helps resolve the conflict.	student in any escalating conflict to diffuse the situation promptly to avoid public displays of conflict with patients/staff. Both preceptor/student should be able to terminate a meeting and come back to it later when emotions calm down.
Take a problem solving, constructive approach. Try to establish what your students need to happen to resolve matters and move forward. Select a mutually agreeable solution and develop a plan. Discuss any changes or compromises either party are prepared to make in their behaviour or attitudes.	Talking openly and respectfully about any disagreements in a mutual bidirectional approach helps understand each other's perspectives and create the best possible solution.	"How do you feel we can move forward from this disagreement …. I am willing to move forward ……."
Sometimes you must agree to disagree; each person has a unique point of view. Being right is not what is important; instead, an understanding of each other's points of view.	A readiness to understand another person's point of view, agree to disagree, forgive and forget, and move past the conflict without holding resentments or anger will help resolve the conflict and ensure the conflict does not negatively impact the interpersonal relationship.	"Let us agree to disagree and move forward……I am happy to move forward from this if you are?..... Let us forget what has happened and start again".
Always act with integrity and maintain confidentiality.	Maintaining confidentiality regarding any issues discussed with your student during the conflict creates trust and helps build interpersonal relationships and reduces the risk of future conflicts.	Do not discuss the event with other staff members unnecessarily or in inappropriate settings such as the staff room, where other colleagues or students could overhear the conversation.
Help prevent future conflict by having regular formal and informal meetings with you.	Regular informal meetings will reduce the risk of conflict often associated with high stakes NCAD meetings if a student is underperforming.	Facilitate informal daily bidirectional feedback with your students (See Unit 5: Feedback).
Never presume the issue is resolved.	Presuming an issue is resolved can lead to renewed	Always check back in with your student the next day (or

	tensions or feelings of unhappiness if not fully resolved, causing further conflict.	as soon as possible) to see if they have any follow up questions or comments or are happy with how the conflict was resolved previously.
Look for lessons you can learn from the conflict and how you handled it.	This will help you know what you can do when the issue resurfaces and enable you to develop and nurture your conflict management skills by training. Conflict can be a healthy and vital part of growth and change, and we need to learn and practice the best ways to deal with it in our everyday lives.	Ask yourself, "What can I learn from this situation…. What could I have done differently"?

The Last resort: using formal procedures to resolve conflict

If you cannot resolve the conflict personally, you must escalate using formal procedures for your local hospital and third-level institution.

Report the conflict to your CNM and CPC.	This is the first escalating step	Explain the conflict to the CNM and CPC and all factors you have taken to resolve the conflict to date. Students should be advised to contact their Personal Tutor if they have any concerns or may seek advice.
Initiate a supportive action plan for CNM or CPC to mediate the conflict.	Working with the CNM and CPC to draw up a supportive action plan for the student to mediate the conflict.	The action plan should be fair, achievable, agreed upon and signed by all parties, including the student. Always follow documentation guidelines.
CPC to liaise with the student's tutor to notify them of the situation.	Liaising with the students' personal tutor is essential as it provides the student with further support to resolve the conflict and achieve their learning outcomes.	A personal tutor can be contacted by phone or email typically.