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Challenges in conducting clinical nursing skills education for the pre-qualified nursing students at the clinical environment of Hong Kong: a case study

by

Yuen Fung Wong

A dissertation submitted to the University of Bristol in accordance with the requirements of the Degree of Doctor of Education in the Faculty of Social Sciences and Law

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Abstract

Clinical practice is an integral component in nursing education. Pre-qualified nurse learners are required to work in different clinical settings to develop their skills competency. Conducting clinical skills education has always been a challenge to nursing teachers in Hong Kong and worldwide. This study adopts a case study methodology using three data collection methods including individual interviews, a focus group interview and the researcher's participant observation experience in a clinical visit and her skills laboratory teaching during a 3-month class in the teaching programme. Alongside inviting nursing student participants, this study also utilised the insights of nursing teachers, clinical nurses, and advanced practice nurses. Drawing upon the ideas from Vygotsky's Sociocultural Theory, this study engages with several Vygotskian concepts such as: "learning from the more knowledgeable others", "social interaction", "scaffolding" and "zone of proximal development". Through the collection of multiple sources of data, this case study favours a critical inquiry of the sociocultural factors and their relation to clinical education. It uses thematic analysis, synthesizing the findings, identifying four overarching themes namely the environment-related sources, human-related sources, culture-related sources, skills-teaching-related sources along with eight sub-overarching themes have been generated. The findings reflect the dilemmas existing in clinical nursing education and uncovers the nursing students as well as the practitioners managing intense pressures which significantly affect the delivery of clinical skills education. The research study fronts the complex sociocultural context which influences the students' learning and teachers' mentoring, and it offers an important insight into the challenges of conducting clinical nursing skills education.

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Last but not the least, on a personal note, I want to thank all my family members for the support for the previous few years in the dissertation journey. Without your encouragement and backup, my research would not have been accomplished.

Declaration

I declare that the work in this dissertation was carried out in accordance with the requirements of the University's Regulations and Code of Practice for Research Degree. Except where indicated by specific reference in the text, the work is the candidate's own work. Work done in collaboration with, or with the assistance of others, is indicated as such. Any views expressed in the dissertation are those of the author.

Signed: [redacted] Date: 19/07/2022

Table of Contents

List of Figures

List of Tables

List of abbreviations

Abbreviations	Full forms
APN	Advanced Practice Nurse
CLEI	Clinical Learning Environment Inventory
CN	Clinical Nurse
COVID-19	Coronavirus Disease 2019
EN	Enrolled Nurse
HAHK	Hospital Authority Hong Kong
HCA	Health Care Assistant
HKU	The University of Hong Kong
ICN	International Council of Nurses
MKO	More Knowledgeable Others
NCHK	The Nursing Council of Hong Kong
NS	Nursing Student
NT	Nurse Teacher
RN	Registered Nurse
SCT	Sociocultural Theory
UGC	University Grants Committee
UKCC	United Kingdom Central Council for Nursing Midwifery and Health Visiting
WHO	World Health Organisation
ZPD	Zone of Proximal Development

Chapter 1: Introduction

1.1 Introduction

Conducting clinical nursing skills teaching has been an ongoing challenge in Hong Kong as well as more worldwide (Nursing Council of Hong Kong, 2015a; World Health Organisation, 2016; Nicholls et al., 2016; Mwale & Kalawa, 2016; Hung & Lam, 2020). According to World Health Organisation (2016, p.6), a competent health workforce (i.e., nurse) should be "equipped with the knowledge, attitudes and skills necessary to deliver quality care" and the core competency of a nurse educator includes "production of effective, efficient and skilled nurses who are able to respond to the health needs of the population they serve". Nursing, being different from other profession, involves placing emphasis on clinical skills in an authentic setting (White & Ewan, 1991; Bjork, 1997; Mwale & Kalawa, 2016) and this characteristic outlines the importance of the contextual influence of the learning environment (Ip & Chan, 2005; Chan & Ip, 2007; Lee et al., 2018). Considering the use of workplace settings as a learning platform for nursing students carrying out learning activities (NCHK, 2012), intense social interaction with different members in clinical skills development allows "the premise that learning gained through experience is more meaningful and relevant than that acquired in the classroom" (Hughes & Quinn, 2013, p.356). The scope of this study focuses on examining how nursing students can be affected by this social interaction under the influences of local sociocultural environment, whereas the concepts of Vygotsky's (1978) Sociocultural Theory[1] propose the social process and that the origination of human intelligence is from society and culture, are deemed applicable to serve as the theoretical framework for the current research.

Compared to international literatures (Deary et al., 2003; Jessee, 2016; Dadgaran et al., 2013), very few local studies investigate the influence of sociocultural factors in the clinical environment in relation to nursing education. Given this context, this education doctoral study adopting a case study methodology, provides an exploration into the challenges of conducting clinical nursing skills education for pre-qualified students.

[1] Refer to Section 2.5 (p.35). In brief, sociocultural factors draw upon Vygotsky's constructivist learning theories that emphasise the interaction between social context and individual processes in a human's cognitive development in learning. The sociocultural environment of the hospital in Hong Kong is important and it is the social context, individual processes, traditions, values, and attitudes that are significant to the working staff and the nurse learners in this context.

1.2 Background

In Hong Kong, nursing education has moved from a historical apprenticeship training to studentship in the tertiary institutions in the past decades (Chair et al., 2018). With respect to the curriculum, clinical skills training remains crucial in the clinical settings in which students undergo substantial experiential learning (Dewey, 1938; Murry, 2018). Currently, the nurse training in Hong Kong is divided into two streams namely, registered nurse (RN) training and enrolled nurse (EN) training. The curriculum of the five-year undergraduate bachelor nursing programme (pre-RN programme) and the two-year higher diploma nursing programme (pre-EN programme) are designed to ensure that the theoretical and clinical practice fulfilled the different training requirements of the Nursing Council of Hong Kong. According to the licensure body - the Nursing Council of Hong Kong (NCHK), all undergraduate nursing students are required to complete at least 1,250 theoretical hours and 1,400 clinical hours (NCHK, 2021a) of training to become a registered nurse, while the higher diploma nursing students are required to undertake 780 theoretical hours and 1,600 clinical hours (NCHK, 2015b) for the enrolled nurse training. Nursing students must pass all the assessments and complete the required practicum training in the designated specialties and hours such as medical, surgical, paediatric, operating units, accident emergency units and so forth to ensure that students' clinical knowledge, skills, problem solving ability and professional attitudes are within the standard to be awarded with the qualification (NCHK, 2015b; 2021a). Currently, Hong Kong has 8 tertiary institutions providing local RN training (i.e., undergraduate nursing programme) (NCHK, 2021b) and some also include the EN education (i.e., higher diploma nursing programme) (NCHK, 2021c). In addition, there are hospital-based nursing schools from public and private sectors which also provide different higher and professional diploma programmes to cater the social demand. As of 2020, the NCHK recorded 61,295 qualified nurses, including 46,168 registered nurses and 15,127 enrolled nurses, supporting the nursing care for the total population of 7.5 million in Hong Kong (NCHK, 2020).

Improving the standard of clinical skills is highlighted in the nursing education locally and globally (NCHK, 2015a; World Health Organisation, 2016). The nursing psychomotor skills "also termed as procedural, clinical or technical skills" (Nicholls, et al., 2018, p.121) is suggested to be best learnt in a realistic clinical environment in some studies (Chan & Ip, 2007; Bjork, 1997) thereby nursing students can actualize and enhance their practical dexterity (Dag et al., 2019; McNett, 2012). Based on this understanding, clinical practice is

perceived as “the cornerstone of nursing as a health profession” (Liu et al., 2019, p.215) and an essential component of nursing education (Tanner, 2006; Liu et al., 2019). In recent years, substantial grievances from local clinical staff in the field uncovered problems in the clinical environment (Cheng, 2019). Some factors including poor physical settings, understaffing, and overwhelming situations are reported influencing their work performance or even the quality as a health care worker (Cheung, 2019a; Ma, 2019). This issue actually has the linkage with the quality of nursing education. A local questionnaire survey was carried out by Watson et al. in 2008 to evaluate the low attribution of Hong Kong nursing students towards the nursing profession and found that it may be related to students’ stress and burnout in the nursing programme, and which highlighted two variables, namely, “clinical stress” and “educational stress” (p.1540). This survey aligns with the findings from Lee et al. (2018, p.103), which specifies “interpersonal”, sociocultural”, and “environmental” among the six factors that influence clinical skills education, and these factors will be explored substantially in the subsequent chapters.

According to Lewin (2007, p.43), the clinical learning environment is analogous to an interactive place, where nursing students and the mentoring personnel carry out the education process. There is literature which supports the fundamental clinical skills developed through social interaction of the involved parties and learning from the members in the context, especially the support from experienced professionals as they can provide scaffolding to students and enhance their ability and potential (Spouse, 1998; White, 2010; Andrew et al., 2008). The residing sociocultural elements escalate the environmental complexity that as Phan (2012) argues, “…environmental setting may entail a number of philosophical principles and these, consequently, contextualise individuals to believe and to act accordingly” (p.8). The sociocultural elements from other studies have highlighted that they are closely related to a learner’s learning attitude, the teaching and learning process, and finally the overall skills quality (Dadgaran, et al., 2013; Jessee, 2016; Bojtor, 2003; Mannion & Smith, 2018; Rafferty et al., 2015). A growing body of academic attention has addressed social interaction, and the socially situated knowledge is playing a determining role in the clinical skills development on the nurse learners (White, 2010; Prato, et al., 2011; Sanders & Welk, 2005). Unfavourable clinical environment can undermine the learning potential of learners (Chan et al., 2009; Deary et al., 2003) and this continuous tension tends to hinder them from developing into competent graduate nurses in the long run (Chow, et al., 2018). Facing the everchanging and complex clinical environment, mentoring staff and nursing

students who are working in this context are placed under considerable pressure (Chan et al., 2009).

In an article entitled *HK nursing students on challenges faced by medical community and concerns for after graduation we can all relate to* posted in a local paper South China Morning Post on 25 January 2019, in which Ma (2019) described the expression from the student interviewees and the issues such as "overworked and understaffed" (para. 2) in the learning environment are illustrated to be considered affecting the students' passion and motivation in clinical learning. Chan and Ip conducted studies from 2005 to 2007 to explore the perception of local students in the clinical environment and its correlating influence on clinical education. However, these studies have been conducted for over ten years, and the perspectives being explored are mainly from the learner's perspective only (Ip & Chan, 2005; Chan & Ip, 2007). From literature search, most of the relevant studies are conducted in western or mid-east places (Chan, 2004; Dag et al., 2019; Elliott & Bempechat, 2002; Salminen, et al., 2010; Mutair, 2015), whereas the clinical practice and cultural background differs from place to place (Lambert et al., 2004) facing a scant of local studies.

1.3 The research setting

The context of the case study involves University B, a local university in Hong Kong where all undergraduates in their first year must attend the course: Fundamental Nursing Practice. This core course involves fundamental clinical skills building comprising of a series of class lectures and skills laboratory practice. Students must obtain a pass grade in both parts of assessment before proceeding to the clinical practicum course in the following year. The clinical wards, where the students being assigned, serve as the students' practice ground to develop their nursing skills and to interact with others, through which, they learn the concept of professionalism, knowledge, and skills (Hughes & Quinn, 2013; Salehian et al., 2017).

1.4 Knowledge gap and the significance of the research topic

According to the *Guide to Good Nursing Practice* (NCHK, 2017a, p.6), a nurse is expected to "provide appropriate and timely supervision to enable supervisee deliver safe and effective nursing care / service delivery" and "ensure and improve standard and quality in meeting service user's needs". This guidance underpins the significance of clinical skills education in the nursing profession. Based on the findings from a recent local study (Hung and Lam, 2020) who investigating the factors precipitating to the turnover of the Hong Kong registered

nurses in which, their study identified the factors contributing to the occupational turnover are in relation to some contextual factors and from the emerged codes being outlined, the findings also alerted our attention on the influence of "tense work environment", "blame culture", "inadequate communication", "distrustful relationship" and so forth (Hung & Lam, 2020, pp.5-6). Hung and Lam's study reflects the significant linkage of the workplace environment to the nurses' engagement and motivation (ibid.). Though the target participants of Hung and Lam's study are registered nurses, its result provides insight for us to consider how this can impact the local nursing students' clinical education as illustrated by other studies (Chow & Suen, 2001; Jessee, 2016; Ip & Chan, 2005; Dadgaran et al., 2013; Lee et al., 2018).

More recently the National League for Nursing (2020) has posted four research priorities for 2020 to 2023 in nursing education, they include:

I. Build the science of nursing education through the generation and translation of innovative teaching and learning strategies;
II. Build faculty teaching practice;
III. Create partnerships, including inter/intra-professional education (IPE) and global initiatives, that advance learning, enhance health and client care; and
IV. Build a nurse faculty workforce to meet the needs of nursing education, staff, administration, and healthcare. (National League for Nursing, 2020, pp.3-4)

From the latest guideline of the National League for Nursing (2020), it specifies the near future direction of research in nursing education. In the third point of Section IIa, it states, "evaluate factors impacting scholarly teaching practices and the development of the science of nursing education through teaching practice impact on student learning and engagement when guided by a master teacher" (National League for Nursing, 2020, p.4) in which it has stressed the importance of having a more capable practitioner and the strategy on enhancing student learning and engagement in nursing education. Whereas the nurse learners situated in the dynamic clinical place during the practicum period, experiencing constant socialising themselves in the environment (Hughes & Quinn, 2013), the learners are continually influenced by the attendants' (i.e., nurse teachers, clinical nurses, mentors or peers) values and behaviours, then learn how to conform themselves to the professional roles in the influence of the workplace culture (Howkins & Ewens, 1999; Hughes & Quinn, 2013). Facing the global demand for elevating the nursing education standard (NLN, 2020; Baker et

al., 2021; Hensel, et al., 2022), the current study is significant because it not only fills up the knowledge gap due to the paucity of local relevant literatures, but it also helps to explore the case problem, addresses the suggested roadmap from the NLN research priorities in the period 2020 – 2023.

1.5 Personal and professional interest to the study

My personal and professional background has contributed to my interest in this study. I have been in the nursing field for over 30 years and have taken different positions in the hospitals as well as teaching at a university. Over this long period, it has not been uncommon to learn about some unfavourable incidents which occurred in the clinical setting. After such events, I would often puzzle over the key challenges and reasons. Gradually my thoughts turned from, for example, the structure of the programme, the curriculum content, course design or the assessment formats, to the sociocultural elements of the clinical learning environment. I also thought much more about the social interaction between the learners and the environment.

I remembered a few years ago, having a casual talk with a graduated nurse (who had since been promoted to an advanced practice nurse) about her perspective on the challenges and key factors in the successful acquisition of clinical skills training. I expected her to respond with some ordinary answers related to improving course content, carrying out curriculum reform or adding more supplementary classes to foster the skills practice etc. Instead, she assertively said “a supportive learning environment”. In that afternoon, we continued discussing what components in the learning context could support the clinical skills growth in students and the content had involved many social and cultural sources existing in our clinical environment, such as the learning climate, clinical staff’s support, and peers’ attitude etc. Though this serendipitous meeting over ten years ago, our two-hour conversation remains a constant reminder of the importance of the learning environment, social interaction, and sociocultural factors.

In terms of this study, it formally began in February 2020. My philosophical position aligns with understanding knowledge (epistemology) as being constructed by the collective generation of social and cultural components which involve the interplay of different actors and the contextual elements of the environment (Crotty, 1998). I situated my theoretical framework with social constructionism. Social constructionism carries the perspective assuming “the world is understood are seen related to specific socio-political, cultural,

historical contexts, and meanings are seen as social artefacts, resulting from social interactions, rather than some inherent truth about the nature of reality" (Braun & Clarke, 2013, pp.336-337). I used case study research as a key methodological approach that allows me "understand social phenomena within a single or a small number of naturally occurring settings" (Bloor & Wood, 2006, p.27). With reference to the work of Stake (1995), I offer this study as an intrinsic and instrumental case study. Having accumulated over thirty years of nursing experience, I have developed a personal interest (intrinsic) in understanding the social phenomena of clinical education. I also aim to (instrumentally) better understand the challenges of clinical nursing training in the pre-qualified learners. In terms of data collection, the study utilizes individual interviews, a focus group meeting, and participant observation on a clinical visit and the skills laboratory teaching classes for one semester in which the findings have recorded in my research diary. Drawn on the theoretical ideas from Vygotsky's (1978) Sociocultural Theory, it provides useful framework for me to understand the important elements such as social interaction, more knowledgeable other, zone of proximal development, scaffolding and the use of effective learning tools (i.e., teaching strategy), by and large, to develop a more informed understanding of the challenges and issues related to clinical nursing training – the learning environment and the skills education.

1.6 Research aim and questions

The aim of this study is to explore the challenges in conducting the clinical nursing skills education for pre-qualified nursing students in a local clinical environment. It contains four research questions relating to the exploration of the sociocultural factors and clinical skills learning that are equally important.

The research questions are:

RQ1 What are sociocultural sources in the local clinical setting that affect the development of nursing students' clinical nursing skills?

RQ2 How do the existing sociocultural sources in the local clinical setting affect the development of nursing students' clinical nursing skills?

RQ3 To what extent do the cultural elements in the clinical environment influence the cognitive thinking of nursing students through the transformation process into higher level and eventually affect their mastery of clinical nursing skills?

RQ4 How does the social interaction between the nursing students and other professional parties in the clinical environment affect the teaching and learning process of the clinical nursing skills education?

1.7 Structure of the thesis

This thesis contains six chapters. Chapter one is the introduction. Chapter two presents the review of literature. It begins with introducing the concept of clinical nursing skills education, provides an overview of clinical nursing education in Hong Kong and outlines the challenges in this context. The chapter also includes the socio-cultural factors of the clinical environment, cultural elements of clinical workplace, social interaction and how they influence clinical nursing skills education in which, the knowledge gaps have been identified. Chapter three outlines the methodology of this study. It provides a justification for my research paradigm including the chosen theoretical framework, my philosophical position and methodological approach. It discusses the methods for data collection (individual interviews, focus group and participant observation in my research diary), the sample recruitment and the procedure for conduction. It also draws upon the work of Braun & Clarke's (2013) having used thematic analysis to identify primary themes and subthemes from the initial codes generated from the data and finally resynthesize into the overarching and sub-overarching themes. Chapter four presents the findings of the study, as a separate chapter, fitting of case study research, as is discussed by Thomas (2016). It presents the data of the key themes illuminating the case phenomenon holistically from the conversation of individual interviews, data from focus group interview, and the extracts of my participant observation in my research diary. This also includes tables, charts and mapping for highlighting the key findings from the data. Chapter five utilises the previous data from the findings and provides an analysis and discussion of the related issues. This chapter brings together both the literature and the findings. It uses the insights of the participants and engages in an analysis of those understandings. Chapter six offers a conclusion to this study. It illustrates its implications to the profession and the society, its strengths and unique contributions, limitations and challenges faced during the process. It also provides researcher's personal reflections and recommendations for the future research in this context.

Chapter 2: Literature Review

2.1 Introduction

This chapter presents a literature review related to the sociocultural sources of the clinical environment and their influences on clinical nursing skills education. Guided by the key research terms, the review begins with defining what clinical nursing skills education is and offers an overview of the context in Hong Kong. It engages with the sociocultural issues and discusses how they affect the clinical nursing skills development. It then acknowledges the relationship of the cultural elements in the clinical environment affecting nursing students' cognitive and skills education. It also reviews the literature related to Vygotsky's (1978) Sociocultural Theory, the theoretical framework of this study, to understand its utilisation in the education as well as nursing education field particularly in the role of social interaction in the teaching and learning process. With an aim to uncover the challenges in the local clinical skills education, this review is critical in drawing attention to the related issues.

2.2 Clinical nursing skills education

The term "clinical nursing skills education" can be used interchangeably with "clinical education", "clinical teaching", "clinical mentoring", and "nursing skills education" (Graham et al., 2016; Shadadi et al., 2018; Beigzadeh, et al., 2019; Francis & O'Brien, 2019). Whichever, the terms tend to relate to the clinical nursing skills training for the nurse learners in the clinical environment (Nicholls et al., 2018; Fotheringham, 2010). Nursing students can transition from novice to expert and gain acquisition of professional nursing competency through effective clinical skills education (Sezer, 2018). There is no single definition for the concept of clinical (Fotheringham, 2010), however, according to the Cambridge Dictionary (n.d.), "clinical" is defined as that which refers to "… medical work or teaching that relates to the examination and treatment of ill people". From classical text (White & Ewan, 1991, p.1), the term "clinical" carries the connotation of the "sick-bed" (clinikos meaning bed) which is the notion widely applied in the field practice for the health professions. In the 1950s, this term began to be more familiarised in the teaching fields where the "clinical approach" is the major educational strategy between the learners and teachers (ibid.). On the other hand, clinical education as defined by Schweer (1972) is the "vehicle that provides students with the opportunity to translate basic theoretical knowledge into the learning of a variety of intellectual and psychomotor skills needed to provide patient-centred quality nursing care"

(p.41). Benner & Wrubel (1989, p.25) illustrated it as “the uncovering of the complexity and richness of the practice”. Concurred by other scholars (e.g., Hughes & Quinn, 2013; Monagohan, 2015; Yang & Chao, 2018; Dag et al., 2019), the latter definition implies that clinical skills education not only focuses on completion of basic routine practice, but also requires students to apply theoretical knowledge to the complex clinical environment. This is a learning platform for students to apply theoretical concepts into practice, to develop critical thinking and problem-solving ability, and implement therapeutic nursing interventions (White & Ewan, 1991; Dunn & Hansford, 1997; Ip & Chan, 2005).

Nursing students act as active persons in the clinical learning process (Hughes & Quinn, 2013). Through working directly with patients and the healthcare team, students are required to develop their nursing judgement that encourages professional role development (Oermann & Gaberson, 2006; Benner et al., 2010). Advancement in educational technology has allowed clinical skills education to be reinforced by simulation technology and imitated hands-on training tools (Brooks et al., 2010; Gore & Gele, 2010; Wong et al., 2021). However, many scholars consider that this is not a replacement for the authentic clinical practice and the patients’ handling (Jamshidi, 2012; Liu et al., 2019). Specifically, to some extent, the simulated scenarios provide a safe setting for students to practise clinical skills (Porter-O’Grady, 2001; Brooks et al., 2010; Brugal, 2020; Matlala, 2021; Wong et al., 2021), but because of their static and factor-controlled characters, simulation may affect the effectiveness of students the “transfer of learning to the real-life setting” (Hughes & Quinn, 2013, p.227). The reduced human contact and opportunity for on-site practice for tackling erratic challenges in realistic clinical settings render many professionals sceptical of its application (Brugal, 2020; Ho, 2020). Brugal (2020) even quoted the chief nurse executive and associate director of the University of Iowa Hospitals and Clinics as saying, “Simulation does not replicate all of the affective emotion that you feel and sense during the real interaction with the patient” (para. 33). To tackle such shortcomings, practicum skills training should be emphasised. Clinical practicum provides a setting that endows students with realistic opportunities to execute their higher-level cognitive thinking, practise their learnt skills, apply specialized techniques, and perform sociocultural interaction at the patients’ bedside (Reilly & Oermann, 1999; Jessee, 2016; Mannino & Cotter, 2016; Vatansever & Akansel, 2016; Rojo et al., 2020). All these lead to several scholars (e.g., Dag et al., 2019; Dos Santos, 2020; Rojo et al., 2020) viewing it as an indivisible component in nursing education.

A common consensus of nursing education is it consists of both theoretical and practical training, with skills education being an integral component (World Health Organisation, 2009; NCHK, 2015a; Chair et al., 2018). Florence Nightingale was a pioneer in developing a structured curriculum of nursing education and which became a yardstick for the clinical nursing skills practice (MacQueen, 2007), transforming nursing education from a ritualistic, task-based, and conventional structure practised by young female apprentices in religious institutes into one that emphasises evidence-based practice, inter-professional education, and utilization of research (Bojtor, 2003; Chair et al., 2018). Nursing moved from the historical handmaiden relationship with physicians to the tertiary and systematic clinical education programmes dedicated to high standard professionalism (Porter-O'Grady, 2001; Chair et al., 2018).

2.2.1 Overview of the clinical nursing skills education in Hong Kong

Compulsory in nursing education programmes, clinical skills education in Hong Kong takes place in the complex clinical context, allowing students to build skills competency in the clinical practice through participation in work and interaction with others (Andrew et al., 2008; NCHK, 2021a). In the early 1960s, based on the British model, nurses in Hong Kong are divided into two streams: enrolled nurses (EN) and registered nurses (RN), who needed to complete two years and three years of training respectively (Stratton, 1973; Poon, 1983; Chan & Wong, 2001). These nurse learners were enrolled in hospital-based programmes that included designated hours of classroom lecturing plus assigned training areas for clinical practicum (Chan & Wong, 2001). While learners have become a substantial part of nursing manpower in those hospitals with a nursing school in that time, their dual roles as learners and employees made the clinical environment more akin to a workplace than a learning platform. It resulted in less structured on clinical training compared to those in today's tertiary institutions, and the heavy workload and overcrowded environment in most public hospitals also jeopardised the quality of learning in clinical areas (Chan & Wong, 2001).

This vocational-type apprenticeship training was widely criticized for its emphasis on rote learning and the lack of critical thinking and decision-making practice, which led to its failure in gaining tertiary-level academic recognition (Chan & Wong, 2001). Considering the global trend for professionalism in nursing education (Chair et al., 2018), a Working Party for a Degree Course in Nursing was set up by the Nursing Board of Hong Kong (renamed as the Nursing Council of Hong Kong □NCHK□) in 1989. The first full-time Bachelor of Science

(Honours) programme in Nursing was launched in 1990 by the Hong Kong Polytechnic University (HKPU). By 2021, hospital-based nursing schools (NCHK, 2021b) had taken a back seat to higher education institutions (both University Grants Committee-funded and self-financed), tertiary institutions have become the major providers of nurses training programmes (Chair et al., 2018). Per the existing *Reference Guide to the Syllabus of Subjects and Requirements* from the Nursing Council of Hong Kong (NCHK, 2021a, 2015b), under the present curriculum, nursing students must complete the stipulated attendance. In other words, students must satisfy the required clinical training hours (i.e., 1400 hours for pre-registration programme and 1600 hours for pre-enrolment programme) and pass all designated assessments in practicum training before they are eligible to gain their professional qualification.

A review of the local literature suggests that the *sociocultural influence on clinical education* is a less-explored area when compared to other interests. Some related topics include: nursing students' perception of mentors' roles and responsibilities (Chow & Suen, 2001), nursing students' stress and coping strategies in clinical practice (Chan et al., 2009), ward learning climate (Lee & French, 1997; Chan, 2004; Chan & Ip, 2007), problem-based learning in clinical nursing education (Tiwari et al., 2006), survey of nursing students' perception towards a hospital learning environment (Chan & Ip, 2007), clinical instructors' perception on clinical education (Yang & Chao, 2018), simulation for nursing education (Wong et al., 2021), commentary of the local nursing education (Lee, 1996; Chan & Wong, 2001; Chair et al., 2018) and etc. Compared with the international literature (Jessee, 2016; Dadgaran et al., 2013; Flott & Linden, 2016), local studies are far more scant and lack holistic discussion in this regard.

2.3 Sociocultural factors in the clinical environment & their influence on clinical skills education

Various literature has mentioned how clinical learning is affected by the embedded sociocultural factors of the setting (Dadgaran et al., 2013; Flott & Linden, 2016; Jessee, 2016; Ahn & Choi, 2019). "Socioculture", from a psychology and education perspective, relates to how people's behaviour and mental processes are shaped by the social and cultural elements of their daily lives and the surrounding (Sanderson, 2010). While it has been long believed that clinical nursing skills should be learnt by vigorous practice and theoretical input (Oermann et al., 2010; Caliskan et al., 2012), the "renewed emphasis has been placed on the

environment in which students acquire that knowledge and how that affects how well they learn" (Koharchik & Redding, 2016, p.62). On the other hand, the focus has stressed more on the importance of the interaction between environmental influence and learners (Dadgaran et al., 2013; White, 2010).

Inspired by classical theorists such as Vygotsky (1978) who analysed the association between sociocultural factors and the development of learners' cognition, Phan (2012, p.1) posited that a person's cognition was situated within three separated layers: 1) individualised sociocultural and historical original; 2) the community; and 3) individualised learning and achievement obtained by the individual. He argued from an educationalist's lens that a person's cognitive growth is not solely innate but is highly related to cultural and social layers in the learning context. This is evidenced with findings on the significance of the environment on students' skills learning and cultivates the notion on "different cultural and social layers combined in a hierarchical system to individuals' cognitive and motivational process of learning" (Phan, 2012, p.14). It further highlights the importance of person-context relation in the learning process (Walker et al., 2004; Marsh et al., 2008). Findings from increasing research on this aspect (Ip & Chan, 2005; Papastavrou et al., 2010; Adibelli & Korkmaz, 2017; Ewertsson et al., 2017) elucidate that social interaction between individuals and their learning society has implication on skills education (Hughes & Quinn, 2013).

Nursing students have faced challenges in transferring nursing skills from classrooms to the workplace, and from one clinical specialty to another, as their skills development is shaped by their experience in the environment and their social interaction with others (White, 2010; Hughes & Quinn, 2013; Ewertsson et al., 2017). Jessee (2016, p.464) pointed out the three main characteristics of sociocultural clinical environment that formulate the overall clinical teaching and learning atmosphere for the mentors (i.e., nurse teachers, clinical mentors, frontline nurses) to teach and the mentees (i.e., nursing students) to learn. They were: 1) physical, such as the environmental layout; 2) social, such as interaction among participants, communication, relationship; and 3) cultural, such as the beliefs about patient care, roles, and personnel hierarchy (Heidari & Norouzadeh, 2015; Jessee, 2016; Adibelli & Korkmaz, 2017). Jessee (2016, p.464) also summarised five sociocultural factors that shape students' perception towards their learning influence in the acute clinical learning environment, including: 1) overall sociocultural atmosphere; 2) membership of the health care team; 3) supervisory relationship; 4) peer relationships; and 5) clinical education structure. Such

findings provide insight and connects to the research questions as stated in this doctoral research study.

Congruent to Jessee's (2016) findings, various literature also indicate that multifaceted sociocultural factors in the clinical environment escalate the complexity of the learning context and affect teaching and learning experience as a result (Ewertsson et al., 2017; Ahn & Choi, 2019; Keil & Ward, 2020). For example, a recent scoping review by Rojo et al. (2020) of 15 papers on students' clinical performance and facilitators' perspective towards practicum education summarised three barriers in clinical skills education including: 1) poor communication skills; 2) inadequate knowledge or clinical incompetence; and 3) unprofessional behaviour. Both Rojo et al. (2020) and Jessee (2016) illustrated how "human relationship" underlines the interaction between learners and other professional parties in the clinical place. Rojo et al. (2020, p.2) further specified the crucial role of the facilitator (e.g., nurse teacher, clinical mentors, or other experienced staff) in guiding and supporting nursing students who may come from diverse backgrounds with "varying levels of language proficiencies and understanding of cultural nuances of patients and the work environment", stressing on the reciprocal interaction in two-way influence.

Keil and Ward's (2020) study pointed out that clinical nurses form another type of facilitating personnel playing an important role in the interaction that may affect the outcomes of students' clinical skills learning. Keil and Ward's finding reflects the value behind *The American Nurses Association's Code of Ethics for Nurses with Interpretative Statement* (American Nurses Association, 2015, p.4), which urges nurses to "create an ethical environment and culture of civility and kindness, treating colleagues, co-workers, employees, students, and others with dignity and respect". In the clinical context, nursing students, as the core player, are so highly influenced by the "respect, consideration and supportive civility" (Keil & Ward, 2020, p.24) in workplace culture that an effective nurse-student relationship can act as a catalyst for students to get more support and solicit more clinical learning opportunities.

2.3.1 Important relationship between sociocultural factors and clinical skills education

Sociocultural factors work to socialise students into the professional role and equip them with professional skills, behaviours, and practice (Hughes & Quinn, 2013; Lee et al., 2018) which are directly related to their clinical learning. Hughes & Quinn's (2013, p.357) suggested the

clinical setting as a location for students to "learn the values, knowledge and patterns of behaviour that make them a member of their particular society" and experience "the process by which an individual undergoes induction into these expected behaviours" in which "socialization" and "transmission of culture" was specifically highlighted. An open, honest, respectful, caring and trusting climate could bring positive effects to the student's personal and professional growth (Schupbach, 2012) and allow them to participate in a nursing team in a workplace with continuous social interaction (Dadgaran et al., 2013; Adibelli & Korkmaz, 2017). Such "occupational socialization" exerts a "powerful influence" by socialising students into the role of a nurse, instilling in them the attendant's values and behaviours (Hughes & Quinn, 2013, p.358) that are considered crucial to the nursing profession (Koharchik & Redding, 2016).

However, views diverge regarding the types of social and cultural factors that influence clinical education in a clinical environment (Dadgaran et al., 2013). In Doyle et al.'s (2017) study of the relationship between sociocultural sources and clinical skills learning, the 150 Australian nursing students surveyed considered "happy to help" and "happy to be here", and particularly, "positive atmosphere on the ward", "approachability of clinical staff", and "welcoming and positive work culture", to be of importance (p.30). This implies that nursing students could perform better when residing in a welcoming workplace with supportive clinical staff and nurse teachers, and these factors could boost nursing students' motivation to learn in the clinical place (Doyle et al., 2017).

Human factor is a determining element in the sociocultural environment (White, 2010; Doyle et al., 2017). Ahn and Choi (2019, p.52) examined the incivility experienced by nursing students during clinical practicum and concluded five themes from their study, namely: "lack of respect", "lack of role models", "excessive demands", "hostile behaviour" and "mean behaviour". The students from their study considered to influence their clinical education and highlighted how the traditional organizational hierarchy in a clinical field makes students feel neglected and disrespected, as they "are in a relatively inferior position as learners in the field of clinical practicum". The study echoes the earlier reviewed literature from which has also found that interpersonal interaction and self-concept within the clinical environment intertwined and significantly affect students' clinical learning (Hoeve et al., 2013).

Kaihlanen et al. (2020) studied the relationship between sociocultural factors of the clinical environment and nursing students' transitional pressure in the emotional, physical, socio-developmental, and intellectual domains during the final practicum, and concluded that better control of workplace-related sociocultural factors could significantly facilitate students' learning experience and reduce their turnover intention after graduation. This linkage is especially important considering the worldwide nursing staff shortage (Hung & Lam, 2020). Successful clinical skills learning requires support from both clinical places and training institutions. To develop a favourable learning climate for clinical skills education and to tackle the pressure from an increasing number of learners in practicum, Foster (2019), as a nurse leader, stressed the importance of positive interaction and different clinical members' support. She advised "to re-think the totality of clinical placement", proposed the clinical staff to "prepare for the readiness", and informed of a positive clinical environment could able to "support learners" and "enable learners to thrive" (Foster, 2019, p.405).

Given the previous literature relating to the relationship between different sociocultural factors in the clinical learning environment and their influence on clinical skills education, it is equally interesting to consider the local clinical context.

2.3.1.1 Literature in the Hong Kong context

Relatively little work has been done on the relationship between the sociocultural sources and clinical skills education in Hong Kong. Ip and Chan (2005) and Chan and Ip (2007) explored students' perception on the local clinical environment and the correlating influence on clinical education, but these studies lack in-depth inquiry and are now over ten years old. More recently, Cheung et al. (2017) interviewed twenty Hong Kong nursing students to explore the factors that affected their clinical education, and concluded that ward environment, mentorship, relationship with ward staff, availability of learning opportunities, students' learning style and school's support are crucial to developing their positive learning experiences. Chan et al.'s (2009) study obtained similar findings while examining local nursing students' stress levels and their preferred coping strategies, in which three main stressors had been identified, including: 1) stress from lack of professional knowledge and skills; 2) stress from assignments and workload; and 3) stress from taking care of patients and indicated "poor relationship between students and clinical supervisors, and nursing staff may constrain students from seeking their supervisor's advice" (p.311). The authors believed that

“a supportive learning environment is important in motivating students to learn and reducing their stress” (p.313) and its significance has underlined.

As mentioned previously, clinical education offers students opportunities to learn value, beliefs, and norms of behaviour, consolidate knowledge and skills, and carry out occupational socialisation into the professional roles (McCabe, 1985, Hughes & Quinn, 2013; Manley et al., 2011; Lui et al., 2008). Therefore, the importance of cultivating workplace culture and learning climates should not be undervalued (Hughes & Quinn, 2013; Chan, 2004). A positive organisation climate with emphasis on training enhancement and positive practice culture would favour students’ skills education (Luk et al., 2021), while unsatisfactory “cultural” and “contextual” factors in the clinical environment, such as understaffing and overwhelming patient loads could undermine the quality of clinical education (Hegenbarth et al., 2015, p.306). An overly busy environment may also deter clinical nurses / mentors from fulfilling their roles of being “available to the learner for assistance or consultation” and “advocate for systems and resources that support RN learners in new environments” (Nurse Association of New Brunswick, 2011, p.5).

Unfortunately, the workload of Hong Kong nurses is apparently heavy due to the “disproportionate nurse-to-patient ratio” (Chair et al., 2018, p.151) of 1:12 in a local general ward, compared to the international average of 1:6 (Chair et al., 2016). This heavy workload and staffing shortage are key factors (Lee & French, 1997; Chan & Wong, 2001; Chan, 2004; Chan et al., 2009; Chair et al., 2018; Hung & Lam, 2020) in causing nurses’ burnout, resulting in negative impacts on the quality of care (Hung & Lam, 2020) and it also places pressure on local clinical education (Cheung et al., 2017). Especially considering the requirement for nursing students to develop their competency in different designated practicum settings (NCHK 2012, 2015b), it becomes complex and challenging by the different clinical stakeholders (Chan 2004; Chan & Ip, 2007; Jamshidi, 2012).

In 2019, the Hong Kong turnover rate of nursing staff was reported to be 6.1% and among these, 95% are the junior grade nurses having less than three years working experience in public hospitals (Ming Pao Newspaper, 18 March 2019). Some of the nursing staff who did leave reported their reason as relating to a distressing clinical workplace (Hung & Lam, 2020). In this regard, Chan and Lai (2010, p.39) earlier specifically highlighted the influence of “cultural norms”, how it affected nurses’ perception of professional status and suggested

"promoting the social status of nursing" as one of the practical solutions for improving the morale and retention rate of Hong Kong nurses.

2.4 Cultural elements of the clinical workplace

Research centred on culture and sociocultural orientations to theory and research have traditionally been associated with anthropology and related fields (Fasoli, 2010; Schein, 2004; Kaufman & McCaughan, 2013; Bellot, 2011; Sanderson, 2010; Vygotsky, 1978). Pettigrew (1979, as cited in Bellot, 2011), an earlier scholar incorporated the ideas of sociology and anthropology and coined the term "organisational culture". Originally utilized mainly in the management and commercial sectors (Deal & Kennedy, 1982; Peters & Waterman, 1982), the term soon expanded to an understanding of human values and culture (Bellot, 2011; Parker, 2000). Schein (2004, p.1) distinguished between two concepts of culture, they were a "dynamic phenomenon" that keeps enacting, creating and shaping by interaction with our surroundings and "a set of structures, routines, rules and norms that guide and constrain behaviour". Within this, they include three levels of culture, namely: the distinction of *artefacts* (tangible elements such as the physical environment, technology, behaviour, or language), *values* (incorporating moral and ethical codes, ideologies, and philosophies), and *basic assumptions* (fundamental beliefs, perceptions, impact on individual's thinking and feelings). In a similar fashion, Smircich (1983, p.339) defined culture as "a critical variable" that defines cultural attributes and can be described, isolated, and manipulated, and "a root metaphor" and explains culture as something in the organisation that helps understand the process of social construction. Both Schein (2004) and Smircich (1983) defined culture from an organisation's (clinical ward or hospital setting) perspective.

Cultural elements in different contexts are distinctive, and could include rituals, language, values, attitudes, beliefs, and norms of behaviour of the people working in the place (Schein, 2004). Discussion of the sociocultural factors of the clinical workplace entails studying the influence of the organisational culture, in my case, for example the ward culture, the presentation of the health care workers' common values and beliefs, the clinical nursing routines, ritualistic practices and use of jargons, routines and rituals (Wolf, 2014), all these could influence the way of a group of people working inside (Schein, 2004; Sullivan & Decker, 1992). Schein (2004) explained the group is:

> *… any social unit that has some kinds of shared history will have evolved a culture, with the strength of that culture dependent on the length of its existence, the stability of the group's membership and the emotional intensity of the actual historical experience they have shared….* (Schein, 2004, p.11)

Hence, culture can be considered as the result of the complex group learning process (Schein, 2004). In the context of health care and clinical place, Kaufman & McCaughan (2013) adopting Smircich's (1983, p.52) notion that "culture is something an organisation has" presented five distinctive cultural elements or attributes of the clinical place which regarded as useful in promoting patient's safety. They included: 1) symbols; 2) rituals; 3) attitudes, values and behaviours; 4) leadership, communication and teamwork; and 5) a learning and just culture. These elements are congruent with the core attributes of organisational culture raised by Schein (2004) and Smircich (1983).

2.4.1 Cultural elements of the workplace and its influence on clinical skills education

Cultural elements can be utilized to understand and interpret the workplace (Konteh et al., 2011). With this, Chan (2019) stated that "culture influences critical thinking" (p.17), and this affects, arguably, higher cognition of nursing activity (Reilly & Obermann, 1999). At the same time, cultural elements were determined to contribute to the process of socialisation and social interaction (Henderson, et al., 2011; Hughes & Quinn, 2013; Koharchik & Redding, 2016; Schein, 2004). Cultural elements are the critical topic discussed in various health care studies, for example: professionalisation (Prato, 2013; Manojlovich & Ketefian, 2002), patients' safety (Kaufman & McCaughan, 2013; Fatemeh, et al., 2019), primary health care (Hahtela et al., 2015), remote nursing education (Gibb et al., 2004), and academic and service (Walker et al., 2011). Nursing students and the mentoring staff in wards are two individual groups of people who are influenced by the environmental cultural elements and exhibit reciprocal influence on each other at the same time whose interaction can affect their skills and understanding (Henderson et al., 2011).

In the following section, four out of the five cultural elements illustrated by Kaufman & McCaughan (2013) as described in Section 2.4 will be reviewed with regard to their relationship with students' skills education. They are: 1) rituals; 2) attitudes, values, and behaviours; 3) management, mentoring, communication and teamwork; and 4) workplace / organisational culture.

2.4.1.1 Rituals

The term *ritual* is often associated with spiritual and religious practice generally. From a psychological perspective, it can refer to routinised behaviours (Greenway, 2014; McAllister, 2008). In nursing and nursing education, its definition is not universally agreed (Strange, 2001), and scholars have diverse opinions on the commentary or narrative criticism regarding nursing rituals (Biley & Wright, 1997; Philpin, 2006; Strange, 2001). Specifically, the inclusion of ritual as a cultural element is controversial. In one corner, Philpin (2002, p.144) proposed that rituals are "often used in a pejorative sense and linked to unthinking, routinized action on the part of nurses", and Walsh and Ford (1991) asserted that rituals and myths must be abandoned for nursing practice to move towards a more rational and evidence-based direction (Greenway et al., 2019). In the opposing corner, Hanningan (1995) argued that rituals can ensure quality and safety, and the repeated sequences of activities in rituals possibly express the values and goals of the organisation. Other scholars (e.g., Menzies, 1960; Chapman, 1983) supported routinized behaviours to a certain extent and opined it may protect practitioners from stress and anxiety. Biley and Wright (1997) even stressed that the value of nursing rituals should lie in their meaning and latent function, and those that have no value or harm patients should not be persist. The different perspectives on rituals and nursing (e.g., Biley and Wright, 1997; Walsh and Ford, 1991; Helman, 1994) were summarised in Philpin's (2002) comprehensive literature review.

After reviewing studies on the current practice of intramuscular injection procedure published between 2002 and 2013, Greenway (2014) criticised the value of certain injection steps (rituals) by claiming that ritualistic action "does not require understanding or knowledge and could be portrayed to be undertaken without consideration of the clinical need" (p.3584). Rituals could be detrimental to skills transformation, especially the development of higher cognitive thinking and advanced skills competency, because attention would be shifted from knowledge- and thought-based to belief- and emotion-focused (Strange, 2001) competency. Instead, Greenway (2014) emphasised the importance of regular review and update on the procedure, concluding that, despite the essential skills for intramuscular injection appearing to fit into the description of a ritualised practice, nurses could be empowered if they made informed decision based on clinical judgements and needs. Roberts (2003) also discussed the importance of critical judgement in dismissing or maintaining the rituals in clinical practice, specifically stating:

> *Rather than to unquestioningly repeat actions, to label these actions or dismiss routine, we must consider the social, cultural, political and professional framework within which we practice and make decisions about care based upon evidence available, individual knowledge and experience and, not least, patient preferences.* (Roberts, 2003, p.56)

In any case, the different arguments on rituals have provided space for readers to re-think the influence of many "practice-based" actions; arguably, left over from the previous apprenticeship model of daily clinical routines (Papastavrou et al., 2010, p.176).

2.4.1.1.1 Literature in the Hong Kong context

Local literature exclusively dedicated to "nursing ritual" is scant (e.g., Heung & French, 1997; Chan & Wong, 2001; Chan, 2019), but most point to the presence of ritual actions in the Hong Kong clinical practice throughout the decades. Heung and French (1997) discovered that students surveyed described their clinical learning experience as "doing routine / simple and unnecessary things", claiming that "much of students' time was being taken up in the completion of routine and menial tasks which offered little learning opportunity for student nurses" (p.458). The authors recommended strengthening the "reflective and critical thinking" (p.460) to bridge the "theory and practice gap" (p.461) in daily clinical practice. It is in line with the *Position Statement* issued by the International Council of Nurses (ICN) (2013, p.1), suggesting "nursing practice is not limited to specific tasks, functions or responsibilities but is a combination of knowledge, judgement and skill". A nurse should exercise critical thinking in their daily nursing procedures rather than merely completing the routinized ritual stepwise procedures as listed in *Core Competency Handbook for Registered Nurse by the Nursing Council of Hong Kong* (NCHK, 2012). The syllabus of the NCHK (2021a, pp.21-25) provides some examples for the nursing procedures, which are presented under different major headings, such as: health assessment, clinical nursing, therapeutic techniques and etc. Critical thinking in clinical skills education is an important weapon for nursing students to avoid completing their daily nursing routines or ritual actions in the complex clinical environment without applying rationality (Chan, 2013; 2019). Chan (2013) recommended treating critical thinking as an essential skill in the performance of daily routine, and evidence-based practice should be promoted in nursing students and nurse teachers. In a later study, Chan (2019, p.14) summarized three themes that could be linked to critical thinking in nursing practice, namely: students' "own thinking", "searching for truth", and "cultural influences". Chan (2019) referred them to the Hong Kong's "educational

culture" and "parenting culture", and suggested these cultural elements linking to the role of the development of critical thinking in nursing students. It can protect patients' safety and prevent medical accidents from happening.

2.4.1.2 Attitudes, values, and behaviours

Several studies (e.g., Adibelli & Korkmaz, 2017; Sezer, 2018; Carlson et al., 2009) pointed out that the *attitudes, values, and behaviours* are closely related to an individual's cognitive and psychomotor skills development. The components themselves influence each other (Schein, 2004). Reilly (1989) conceptualised value as an operational belief that an individual accepts as one's own and uses as a basis for his/her attitude and behaviour. Values are also regarded as judgements about the worth of an object, person, group, belief and event, and it can be connoted as a preference as the selective basis of attitude and behaviour (Reilly & Obermann, 1999). The values, beliefs, norms, assumptions, and shared meanings can reflect the deep manifestations of the organisation's (i.e., the practicum ward) culture and some cognitive substructure inside (Brown, 1998; Hofstede et al., 1990), which underlie and influence the attitudes and behaviour of people working in a workplace. These qualities are integral to the workplace culture (Manley, 2000; Schein, 2004; Brown, 1998), and can pass to new recruits (Manley, 2000).

As is argued, values and beliefs are influential to higher cognition and skills development in clinical practice (Adibelli & Korkmaz, 2017; Sezer, 2018; Carlson et al., 2009). Since values incorporate specific ideologies, philosophical conceptions, moral and ethical codes (Konteh et al., 2011), engaging values and beliefs is important for clinical skills education and behaviour formation (Newton et al., 2012; Welch, 2006; Gibb et al., 2004). Manley (2000, p.53) pointed out the importance, "these cultural elements (attitudes, values and behaviours) may be invisible and unconscious, the forces and situation that derives from them can be positive, in that they can promote high standards of care, and negative, in that they can result in poor standard of care". To develop nurse learners' higher cognitive ability such as critical thinking, problem solving and decision-making power, and mastery of complex or advanced skills, it requires the people involved (i.e., mentors and mentees) to have shared values of aspiration to excellence (Baker, 1980) and respect the importance of values (Gregory, 1983). The study from Coyle et al. (2008) supported these findings. They utilized a modified version of cultural survey questionnaire (Horsburgh et al., 2006) to explore students' attitudes, beliefs, values in the dimensions of health systems, work values, clinical governance, clinical

practice, resource allocation, accountability, standard setting, management, and autonomy and made the following conclusions:

> *… training programs must incorporate understanding of the values, beliefs and roles of different professional groups if multidisciplinary working in teams to be achieved in contemporary health systems….* (Coyle et al., 2008, p.252)

Another study employing the Nursing Professional Values Scale - Revised (NPVS-R) questionnaire, Poorchangizi et al. (2019) revealed that the surveyed students considered "maintaining confidentiality of patients" and "safeguarding patients' right to privacy" as the most important values, and "participating in public policy decisions affecting distribution of resources" and "participating in peer review" to be less important. This result informs the need to institutionalise the professional values in nursing students comprehensively and is evidenced that this cultural element exerts influence on students' skills education.

To further test the influence of values on students' attitude and behaviour in clinical education, Grealish and Henderson's (2016) utilised the sociocultural theory as a framework for innovating the change in the organizational culture and administered the Clinical Learning Organisational Culture Survey to students participating in an extended staff capacity-building programme under the Student Nurse Led Ward model. Results showed that the students demonstrated an apparent improvement in the areas of "recognition" and "accomplishment" after attending the programme. From which, it suggested that, building the extended staff capacity on learners can foster a positive learning culture, and that "an environment that became more welcoming, increasingly valued their work, provided clear direction on what was required, and provided support for their learning" (Grealish and Henderson, 2016, p.574), thus illustrating how the presence of supportive clinical environment with people valuing their roles and work can bring positive impact to clinical skills learning.

2.4.1.2.1 Literature in the Hong Kong context

In Hong Kong, the *Scope of Professional Practice* (NCHK, 2015a) delineated the professional values and established the roles and responsibilities that nurses at different levels should adhere to in areas such as clinical practice, health management, and nurse education, providing a general direction for all stakeholders, including: learners, mentors, teachers, and

nurses. It explicated the practitioners should equip their competencies in “quality”, “safety”, “evidenced based practice” and “research and leadership” (NCHK, 2015a, p.5).

Lui et al. (2008) carried out a cross-sectional survey of local nursing students using a self-administered questionnaire devised from the *Code of Ethics and Professional Conduct for Nurses in Hong Kong* (NCHK, 2015c) for their perceptions on different items of the professional code. The study discovered that students considered “provide safe and competent nursing care” (Lui et al., 2008, p.110) as the most important item, while “foster the trust that is inherent in the privileged relationship between nurses and their patients / clients” (ibid.) was considered as the lowest priority. The contrasting findings aroused the interest of Lui et al. (2008) and suggested further research was required to explain such findings.

On the other hand, Chan (2004) employed the *Clinical Learning Environment Inventory* (CLEI) in studying students’ perception of clinical education and revealed from a students’ survey, “personalisation” was the most important element in the clinical learning environment during their learning, indicating learners are concerned about “seeking respect, support and recognition from clinical teachers / clinicians during clinical placement” (p.156) which are related to their recognition of roles and identity. It is worth noting that this finding is congruent with an item from the NCHK’s (2015c) framework mentioned earlier in its *Code of Ethics and Professional Conduct for Nurses in Hong Kong* with respect to “respect the dignity, uniqueness, values, culture and beliefs of individuals and their families” (NCHK, 2015c, p.4). It also inextricably links to the *International Council of Nurses Statement* released in October 1969, which states that “the practice of nursing to be unrestricted by nationality, race, creed, colour, politics or social status” (ICN, 1969, p.2178).

Despite literature presenting the students’ professional values and attitude, barriers in the sociocultural environment stemming from actual conditions, such as workplace culture, management, mentoring, communication, and teamwork have affected clinical education outcomes (Coyle et al., 2008; Bond, 2009; Poorchangizi et al., 2019; Davis et al., 2016). It is difficult to strike a balance in maintaining professional values and satisfying most of the educators’ and students’ expectations at the same time especially in the actual challenging situation (Lui et al., 2008; Chan et al., 2017; Lee, Clarke & Carson, 2018; Hung & Lam, 2020). The hindrance can come from the heavy workload of both mentors and mentees,

which limit the opportunities for skills learning, causing difficulties in nursing students' skills practice that could avoid compromising patients' safety (Chan & Ip, 2007).

2.4.1.3 Management, mentoring, communication and teamwork

The importance of *management, mentoring, communication and teamwork* (Kaufman & McCaughan, 2013) was confirmed by Henderson et al. (2011), who identified three items that are pivotal for creating and maintaining a positive learning environment for clinical nursing education, including: 1) leadership; 2) management; and 3) partnership inside the organizational culture, with the first two sometimes intertwined (Marquis & Huston, 2008). "Leadership" and "management" were also specified by Davis et al.'s (2016) study in which they developed a category termed "managers / leadership / administration" and illustrated "the close link between education and management to enable the provision of resources, education support and professional development activities can result in a better working environment and empower nurses" (p.287). In other words, managers also act as the "resource controllers" (Davis et al., 2016, p.287) who contribute to the formulation of workplace culture and resource allocation (Skytt et al., 2008), which in turn influences the operation of clinical nursing skills education for learners.

"Communication and teamwork" refer to the connection between learners and mentoring personnel, such as clinical nurses, preceptors, mentors, and educators involved in clinical skills education, and was termed "relational dynamics" by Davis et al. (2016, p.275) and "partnership" by Henderson et al. (2011, p.196). Lee et al. (2018, p.103), on the other hand, identified six factors influencing nursing students' learning based on constructionist grounded theory, namely: 1) interpersonal; 2) sociocultural; 3) instructional; 4) environmental; 5) emotional; and 6) physical factors. The findings specified sociocultural factors referred to the relationship between age, job titles, work experience of people within an organization and the members of the clinical team, while "interpersonal" and "emotional" were branded as the cultural elements in communication and teamwork, demonstrating the close linkage among them (ibid.).

Partnership and teamwork in the form of mentoring and guidance from the clinical members is also crucial for tackling the increasing challenges stemming from the need to exercise the multiskilled, flexible, and diversifying roles (Smedley & Morey, 2009). It helps fulfilling the syllabus requirement of the Nursing Council of Hong Kong (NCHK, 2021a), addressing the

"psychomotor", "cognitive", "developmental" and "humanistic" needs in the clinical experience (Reilly & Obermann, 1999, p.24) and enhancing students' cognitive growth in areas like critical thinking, problem-solving skills, decision making ability and clinical judgement competency (NCHK, 2012). Therefore, development of effective relationships between learners and clinical staff under a positive ward place culture is paramount to generating a satisfactory clinical skills education (Smedley & Morey, 2009; Henderson et al., 2011; Baraz et al., 2015), and support and nurturing are especially important for nursing students early in their training career (Matthew-Maich et al., 2015).

Another item, mentioned by Davis et al. (2016), central to clinical skills learning is the learners' "proactive role" (p.307) and "accountability for their own learning" (p.292), which is correlated to their relationship with the significant others in the workplace. In connection to this, Perry et al. (2018) determined there are extrinsic factors (i.e., environment, mentors) and intrinsic factors (i.e., nurse learners) inseparable and interrelated, and learners develop their communication skills and teamwork throughout the process, as they commented:

> *Through this review, there is emerging evidence that those nurse (clinical members) behaviours known to encourage students to assume greater responsibility and independence in clinical practice are also those likely to hold them more accountable for their learning*. (Perry et al., 2018, p.186)

On the flip side, Baraz et al. (2015) identified four items that nursing students considered to be learning challenges in the clinical environment, namely: 1) non-supportive interpersonal communication; 2) lack of access to direct experience; 3) traditionalism in clinical behaviour; and 4) stressful psychosocial environment. The authors grouped these items under the category "unsupportive learning environment" (p.5) and alerted that they could threaten the relationship between learners and mentors and deter students' learning.

Given the importance of a supportive culture and effective management and leadership in students' clinical learning, the Nurses Association of New Brunswick (2011, p.7) devised some strategies to assist clinical staff in mentoring students and the newly graduates, such as considering the mentoring staff's workload scheduling and promoting an environment that welcomes the learners to ask questions, engaging in reflective practice. Welch (2006) also remarked it should be aware of the influence by the complexities of different settings when examining this topic.

2.4.1.3.1 Literature in the Hong Kong context

In Hong Kong, clinical teachers and clinical mentors are considered as valuable resources who provide students with important on-the-job coaching and clinical skills education. According to the NCHK (2017b, p.7), they should be a well-trained person with at least three years registered qualification. For clinical teachers (i.e., nurse teachers), they are mainly responsible for clinical teaching in the practicum setting, with a 1:8 teacher-to-student ratio; while clinical mentors (i.e., existing clinical nurses), on the other hand, may have both clinical teaching duties and clinical load at the same time, with a 1:3 mentor-to-student ratio at the clinical place.

Davis et al.'s (2016, p.275) "relational dynamics" also emphasises a point that "nurses value their peers, expert nurses, preceptors, mentors and educators facilitating and encouraging their learning and professional development" (ibid.). Chan et al. (2017, p.178) explored the student-teacher power dynamic in clinical settings and summarised three themes: 1) meaning of power; 2) desired power dynamic; and 3) enhancing the clinical learning experience. The result uncovered an unequal power structure between teachers and students originating from the consensus of the students' acceptance to that power dynamic for the benefit of patient safety, for example, some students mentioned that they "prefer teachers to have more power than students because they believe the power goes along with experience, knowledge and competency" (ibid.). Lui et al. (2008) echoed this finding, as students surveyed mentioned that the professional value with the highest priority is "provide safe and competent care" (p.111). Findings from both studies indicate that local nursing students tend to put patients' safety at a higher priority, and they are keen to pursue skills competency in the workplace. Similar power dynamics are also found to exist between students and mentors (Lee et al., 2018; Cheung et al., 2017) and students and managers (Henderson, et al., 2011) that can be the indication of the "hidden impacts of power in various forms of human relationships in nursing" (Chan et al., 2017, p.178).

The importance of having knowledgeable mentors, effective communication with each other, and teamwork in the clinical context demonstrated by the study of Cheung et al. (2017), who revealed that students in a practicum surveyed are most concerned about: 1) ward environment; 2) mentorship; 3) relationship with ward staff; and 4) learning opportunities available in ward. In the local clinical situation, the clinical staff (i.e., clinical mentors and frontline nurses), nurse teachers, and students are constantly interacting with each other. This,

it is hoped, allows nursing students to learn from role models through observation, participation, and conversations, the last of which would give the staff opportunity to share their knowledge and experiences and provide feedback to those they work closely with (Spouse, 1998; Egan & Jaye, 2009; Henderson et al., 2011). Students' longing for "educators to offer opportunities for interacting with them" was also confirmed by Chan et al. (2017, p.113), who also found that effective teacher and students' relationships would foster students to become "motivated", "engaged in the learning process", and an "active learner" in the education process (p.114). On the other hand, Chow and Suen (2001) also discovered that students surveyed view their mentors' behaviour as instrumental and posing a direct impact on their learning. Of the five roles and responsibilities identified by the surveyed students, namely: assisting, befriending, guiding, advising, and counselling, in which, "assisting", "guiding" are regarded as the most crucial, whereas "advising" and "counselling" are less important (Chow and Suen, 2001, p.350). These findings show that students tend to emphasise on the functional roles of a clinical mentor, especially those related to their knowledge and competency (Chan et al., 2009; Chow, et al., 2018).

Studies showed that communication could be negatively affected by several factors. Chan (2013) revealed students' deficit in "communication" during patients' care delivery, and derived a theme called "promoting interaction" to describe the "interactive process" between nurse to patient (p.1947) and help nurses and students to "ponder their missing gap" (p.1941). Another item would be stressed stemming from students' task-oriented attitude, achievement driven mindset (Chan et al., 2009), individual personality, and coping traits (Watson et al., 2008). Watson et al. (2008) specifically pointing out that students adopted two coping strategies: "emotion-oriented coping" and "task-oriented coping" (p.1541) and identified students using task-oriented coping as "most likely to feel personality accomplishment on the nursing programme" (p.1542). Hung and Lam (2020, p.8), on the other hand, focused on the relationship between management and the clinical nursing education, and suggested the item "inadequate communication due to ineffective leadership", pointing to "inattentive administration and management" and "unfair treatment and arrangement" as causes for unpleasant and negative experience from nurses. Despite nurses surveyed rather than nursing students, this finding could serve as a reflection of the clinical situation. To add to the currently available studies integrating management elements into relationship with ward staff such as Cheung et al. (2017), Watson et al. (2008), and Chan et al. (2009), more exploration on the topic is recommended.

2.4.1.4 Workplace / organisational culture

This cultural element *workplace / organisational culture* adapted from the term "learning and just culture" of an organisation stated by Kaufman and McCaughan (2013, p.54) encompasses a wider scope for investigation. Workplace culture as defined by Manley et al. (2011) is the culture of the clinical place where people inside (i.e., nurses, mentors, and students) are influenced by its embedded shared common values, expectations, assumptions, and beliefs, that is for example: "confidence, enthusiasm and motivation" towards caring practice (p.37). Smith (2008) specified it as being constructed by the knowledge, manners, and attitudes that their personnel bring to work and the organisation, and by Johnson (2009) as the collective values, assumptions, expectations, and beliefs of members of an organisation / a place. Manley et al. (2011, p.2) further commented that workplace culture is "not about individuals but about the social contexts that influence the way people behave and the social norms that are accepted and expected", and it reflects "the values, beliefs and assumptions held and accepted by the workplace". As such, it will bring positive or negative impact on the implementation of clinical nursing education (Newton et al., 2010; Manley et al., 2011; McAllister, 2013; Hahetla et al., 2015) and affect students' learning experience (Grealish & Henderson, 2016; Williamson et al., 2020).

Research interest in organisational culture has grown significantly in past decades in various settings, including the health care field (Davies et al., 2000). For example, Manojlovich and Ketefian (2002) examined the effects of organisational culture and personal sense of accomplishment on nursing professionalism and concluded that organisational culture was a significant and substantial predictor for it. They suggested future research should delineate the role of work environment and its impact in nursing practice. In fact, social climate (i.e., learning climate) in academic setting (i.e., practicum ward) has received increasing attention regarding the dimensions of relationships with the surrounding people and the learning outcomes (Siri et al., 2015). According to Loukas and Murphy (2007), the academic social climate perception is a multidimensional and complex construct that influences individuals such as students, parents, administration, teachers, and up to the entire community (Tope, 2012). It incorporates workplace culture as the critical cultural element associated with a positive learning environment in a clinical place (Siri et al., 2015; Tanaka et al., 2018; Kaufman & McCaughan, 2013). These literatures echo the interest of the research questions of this study particularly on the cultural elements to skills learning. Flott and Linden (2016) outlined workplace culture and learning climate as the basis for students' interaction in

learning after a concept analysis of several articles on the clinical learning environment in nursing education. They identified “organizational culture” (p.502) as one of the elements affecting students’ skills learning and described that it “had an impact on the majority of healthcare staff attitudes towards students individualised interactions” (p.505). Their study supports the literature reviewed earlier and illustrated the impact of organisational culture on the entire social climate of the clinical learning environment, specifically opined that without a positive environment, it might lead to negative learning experience to students and undervalued nursing education. This argument also links with the exploration of the research questions for the current study.

Various studies have discussed the benefits that can be brought by a positive and supportive social climate of a learning place, such as students’ academic performance (Clifton et al., 2004; Moos, 1987), motivation for learning (Cleave-Hogg & Rothman, 1991), students’ morale (Cardall et al., 2008), and the overall learning climate (Siri et al., 2015; Chan & Ip, 2007). Chan (2004) assessed students’ satisfaction with their clinical practicum using The Clinical Learning Environment Inventory (CLEI), which contained five prominent scales, namely: 1) individualization; 2) innovation; 3) involvement; 4) personalization; and 5) task orientation (p.153). The results suggest that significant differences are found “between students’ perceptions of the actual clinical learning environment with their preferred clinical learning environment” (p.149), and it indicates the “students’ levels of satisfaction arising from their clinical placement were found to be strongly associated with all five scales of the CLEI” (p.157). The findings show that “a supportive clinical learning environment is of paramount importance in securing the required teaching and learning process” (p.156). Newton et al. (2010) also identified six factors significantly affecting students’ engagement of clinical education from the CLEI, namely: 1) student-centredness; 2) affordances and engagement; 3) individualisation; 4) fostering workplace learning; 5) valuing nurses’ work; and 6) innovative and adaptive workplace culture, further signifying the importance of workplace culture and its relationship with students’ clinical education. Yang and Chao (2018) concurred, proposing a positive, healthy workplace culture is a pre-requisite for nurses to experience valuable and relevant learning and to exhibit their potential.

As mentioned, “organizational influences” and “relational dynamics” from Davis et al.’s (2016, p.275) study summarised two categories of workplace culture that influence nurses’ learning experience. The former enables “nurses to demonstrate the accountability for their

own learning along with the appropriate organizational systems that provides resources, time, adequate staffing and support" (ibid.), while the latter involves how nurse learners value other members in the workplace such as their peers, preceptors, or expert nurses. The findings suggest that an optimal workplace culture is crucial for nurses to experience relevant and valuable learning and "clear organisational and educational systems is required to demonstrate the value in nurses' learning and education" (ibid.).

An improved workplace culture that supports employee creativity and innovation, in addition to an encouraging learning environment with an employee reward system and refrainment from punishment and reprimands, could even mitigate the reoccurrence of medication errors as revealed by Fatemeh et al. (2019). Chang and Mark (2011) and Rivard et al. (2006) also emphasised the importance of a supportive learning climate within a positive workplace to learning from errors, as did the Department of Health of the United Kingdom (2000), who discovered that organisations with positive learning climate have the competence to draw appropriate conclusions from their safety information systems and demonstrate more willingness to implement major reforms when needed. Kennedy's insight (as cited in Kaufman & McCaughan, 2013, p.54) may best explain this observation: "without knowing, there can be no learning. Without learning, there can only be risk that it (i.e., medical incident) will happen again".

Davis et al. (2016) reviewed a number of studies, such as Manley et al. (2011), Whitehead, et al. (2016), and Ahn and Choi (2019), all of which indicated that an improved organisational learning culture, especially an augmentation of learners' sense of value and perception towards the workplace, would bring positive influence on nursing students' clinical learning. At the same time, these findings affirm the clinical workplace as a platform that actively facilitates the application of learners' knowledge to the actual environment, which favours the skills development, despite they derived mostly from western literature and the target participants are not restricted to pre-qualified nurse learners. Future research could focus on elucidating the extrinsic factors (i.e., elements surrounding the environment) and intrinsic factors (i.e., learners' own factors), and how they influence the transfer process affecting the learners' skills learning (Yang & Chao, 2018).

Unfortunately, not all practicum settings offer a positive workplace culture and learning climate to develop a favourable learning environment for students (Davis, 1990; Glover,

2000, Adibelli & Korkmaz, 2017). As suggested by Santos (2012), who reviewed ten studies on barriers to nurses' learning, including: Hughes (2005), Khomeiran et al. (2006), Platzer et al. (2000), and summarised five major themes, including: 1) time constraints; 2) financial constraints; 3) workplace culture; 4) application of new knowledge; and 5) competency in accessing electronic evidence-based practice literature. These indicate that a supportive, positive workplace culture should contain "manager support, peer support, and application of new knowledge in the work setting" (Santos, 2012, p.1830), and that there could not be positive workplace culture and learning climate unless these cultural elements are present because of their reciprocal influence.

To change the culture of students' clinical learning environment and to alleviate the pressure of mentoring students among the clinical staff, a university with practice partners across southwestern England implemented the Collaborative Learning in Practice Model to improve the learning culture of the clinical education. Despite its UK context and restricted application in the recruited organisations, the effectiveness of this practice model was supported by Williamson et al. (2020), who discovered that it could promote coaching and peer support and bring certain positive effects to students.

Workplace culture encompasses several environmental cultural elements such as rituals, values, beliefs, management, mentoring, communication, teamwork, and learning climate (Davis et al., 2016; Palmer et al., 2005; Coyle et al., 2008; Philpin, 2002). Workplace culture can affect the teaching and learning process, as it is closely related to clinical skills education (Chan, 2004; Williamson et al., 2020), staff's incident handling approach (Fatemeh et al., 2019), continuous learning attitude (Santos, 2012), professionalism (Manojlovich & Ketefian, 2002), and nurse retention (Chan & Lai, 2010). It is clear that "workplace culture" and "learning climate" in the environment "both influence the overall training experience" (Tanaka et al., 2018, p.645), and are, therefore, inseparable (Chan & Ip, 2007; Davis et al., 2016; Jessee, 2016). As such, handling students' vulnerability in clinical learning environments and encouraging professional members to "recognise and appreciate" the students are issues worthy of notice for practitioners (Chan, 2004, p.157).

2.4.1.4.1 Literature in the Hong Kong context

Despite insufficient local literature on the relationship between sociocultural factors and clinical education in recent decade, findings concluded are similar to those by their western

counterparts. For example, Lui et al. (2008) highlighted the association of professional values for nursing education and students' performance. Lee and French (1997) signified the central position of "supportive clinical learning environment" in students' learning (p.455). Chan et al. (2009) linked up the students' clinical learning outcomes with the stress and threats of the clinical place. Chan and Ip (2007, p.683) emphasised the provision of supportive learning climate as "a critical element of human resource development" and "of paramount importance in securing the required teaching and learning process" after administering the Actual and Preferred Forms of the CLEI for students after placement in which the difference in the survey between students' perception of the actual and ideal clinical learning environment illustrated the research significance. However, their quantitative method demonstrated a lack of in-depth qualitative exploration, and the limited sampling also reduced the generalisability of the study.

Regarding the impact of clinical incidents, western and local literature bring up the similar concerns. For example, Luk et al. (2021) surveyed and interviewed local healthcare professionals after experiencing clinical incidents. Through content analysis, a theme named "positive organisation climate with emphasis on enhancement of training and development of a positive practice culture" (p.947) was derived. The authors explained this by mentioning that developing a "no blame and caring culture" and "supportive and caring environment" will be meaningful and can be "a motivator for work" (p.956) to all working staff in the clinical place, which is also beneficial to students' skills learning. This argument also supported by Chang and Mark (2011). Both studies indicate that learning climate within the workplace and the learning process involves the interplay between learners and others. They can support and promote safe and quality practice.

In summary, positive, or negative workplace culture and learning climate are sought to be impactful to the students' clinical skills education (Materne et al., 2017), and the interdependence between the clinical environment and the individual is key for developing a higher learning process (Vygotsky, 1978).

2.4.2 Important relationship between cultural elements and clinical skills education

Hughes and Quinn (2013) pointed out that learning is an outcome of education and a change in behaviour resulting from knowledge input and skills training activities. As discussed in the previous section, cultural elements inside the organisational culture are especially relevant to

clinical skills education (Williamson et al., 2020; Davis et al., 2016; Chan, 2004). Specifically, Reilly and Obermann (1999) mentioned that, "cultural determinants are significant in any concept of learning, for they denote the structure of knowledge, its meaning and relationships, and the process by which members of a culture to learn" (p.39). As such, when clinical nursing skills education is taking place, the cultural elements inside the learning setting (e.g., workplace culture, learning climate, people's values, beliefs, and norms of practice), will exercise their roles to influence students and their ongoing skills learning experience (White & Ewan, 1991; Hughes & Quinn, 2013; Nurses Association of New Brunswick, 2011, Chan, 2004; Henderson et al., 2011).

The *Philosophy of Nursing* statement outlined by NCHK (2021a) described four important areas for nurses, namely: 1) Nursing; 2) The Person; 3) The Environment; and 4) Health. Here, "The Environment" refers to the external environment of a person and which "encompasses social, cultural and situational influences" and "the continual interaction affects the person's functioning as an individual" (p.2). "Health", on the other hand, is defined as the state of well-being influenced by "biological, psychological, socio-economical, developmental, political, cultural and religious factors" (p.2). Both areas illustrate that the cultural elements are closely related to a person's health and their interaction with the outside world. In the clinical education context, this points to the reciprocal influence between the mentor (i.e., nurse teacher, clinical mentor, advanced practice nurses) and the mentee (i.e., nursing students). They are the dynamic agents within the clinical context and both are influenced by the cultural elements.

The actual clinical workplace is a distinct and authentic environment providing opportunities to develop students' competencies to be a professional nurse (NCHK, 2021a) through knowledge consolidation and skills practice. Everybody inside this clinical environment is subject to the interactive forces influenced by the workplace culture (Dunn & Hansford, 1997), which Bellot (2011) opined to be "socially constructed, arising from group interactions" (p.36), and people have little control of the dynamic environment (Chan, 2004). Because of its "no alternative" position for the purpose of "learning in the clinical context" (Nordquist et al., 2019, p.366), the workplace / organisational culture of the clinical learning environment is a pivotal determinant affecting students' clinical skills education.

2.5 Vygotsky's Sociocultural Theory

2.5.1 Basic theoretical ideas of Vygotsky's Sociocultural Theory

Lev Semyonovich Vygotsky was a prominent Russian philosopher, psychologist, and educator who was influenced by constructivist learning theories that emphasise the interaction between social context and individual processes in a human's cognitive development in learning (Vygotsky, 1978; Walqui, 2006; Wang, 2015; Vasileva & Balyasnikova, 2019). In Vygotsky (1962), he pointed out the inadequacies of the mechanistic underpinning, contended the active and social characteristic of the learners, and disregarded the conventional behaviourist and information-processing perspective (Phillips, 1995). Later, in Vygotsky (1978), he further postulated that knowledge was not mechanically acquired, but actively constructed within the offerings or constraints situated in the learning environment (Liu & Matthews, 2005). His theoretical ideas have transcended geographical boundaries and time. They are widely applied to different fields of inquiry ranging from psychology (Saxe 2015; Burman, 2016; Matusov, 2008; Vasileva & Balyasnikova, 2019) to language education (Lantolf & Thorne, 2006; Lantolf et al., 2018), teachers' education (Shabani, 2016), child education (Morcom, 2015), and nursing education (Sanders & Welk, 2005; White, 2010; Spouse, 1998).

The main theme of Vygotsky's Sociocultural Theory (SCT) (1978) highlights the social interaction that shapes the learner's cognitive development under the contextual culture (Vygotsky, 1978; Hatano & Wertsch, 2001; Woolfolk, 2013). It regards an individual as an open system having simultaneous mutual interaction with the elements in the environment, who then evolves in response to societal changes causing the modification from the demands of "behaviourism" (Reilly & Obermann, 1999, p.25) to "holistic perspective" (p.27). SCT emphasises mentoring, critical thinking, reflection, collaborative learning, and self-directed learning in education (White, 2010; Heimann et al., 2013; Sanders & Welk, 2005).

The basic perspectives of SCT, as outlined by Shabani (2016), include: 1) knowledge construction is not be sought in the mind but co-constructed with a less or a more knowledgeable other through social interaction in the context (Lantolf & Thorne, 2006); 2) knowledge construction is affected by physical, psychological tools and artifacts, and is a socioculturally mediated process (Walqui, 2006); 3) social interaction, in which the development and learning experiences apprenticeship and internalisation takes place so allowing the knowledge and skills to transform from a social setting to a person's cognitive

context, is the basis of learning (Walqui, 2006); and 4) the zone of proximal development is the primary activity space where the learning takes place (Sanders & Welk, 2005; Walqui, 2006). In addition, as summarised by Walqui (2006, p.160), Vygotsky's (1978) theoretical ideas comprise the following important concepts: "learning precedes development", "language is the vehicle (tool) of thought" and "mediation is central to learning". Shabani (2016, p.2) specifically highlighted the importance of social interaction from Vygotsky's idea and mentioned that "the biological maturations that unfold with time do not constitute development per se; they should lead to new forms of behaviour or social interaction" which pinpoints that social interaction is critical to the integration of behaviour, consciousness, and the unification of mind in learners.

On this basis, Vygotsky (1978) devised the concept that "all learning is co-constructed… only in the context of collaborative work" (Walqui, 2006, p.162), and illustrated two levels of development in learners, namely "interpsychological", which happens between people, and "intrapsychological" (Vygotsky, 1978, p.57), which happens inside the learner him/herself. This concept also associates the three components related to the learning process: "matter, mind and society" (Mahn, 1999, p.341) and emphasises the co-construction of knowledge meaning through social interaction and collaboration, further reinforcing the concept of "the transformation of biological, mental functions into sociocultural, conscious mental functions" (Mahn, 1999, p.342).

The central concepts of SCT are zone of proximal development (ZPD) and scaffolding, where the former is commonly defined as:

> *… the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers*…. (Vygotsky, 1978, p.86)

The latter, on the other hand, refers to the strategy that supports to facilitate learning in the zone, such as assisting in performance skills, is given to a learner only when necessary. Scaffolding stresses the importance of building on the learner's learnt knowledge and active participation for advancing to a higher level in the zone (Sanders & Welk, 2005), and is the interactive, collaborative, and contingent tutorial behaviour through which the learner's potential can be enhanced (Wood, 1998; Sanders & Welk, 2005; Walqui, 2006).

ZPD is connected to scaffolding by more knowledgeable others (MKO). Creation of the contexts for learning in the ZPD requires the scaffolding through social interaction and the presence of MKO, who, as a more capable person, can offer assistance or guidance to learners through the scaffolding in order to develop the learners' skills or knowledge, finally leading them to expand their potential or reach a higher level of the zone. As such, the presence of MKO allows the cognitive, socio-emotional, and behavioural forms of development to be promoted and facilitated (Vygotsky, 1978; Sanders & Welk, 2005), meaning that learners can achieve more than they originally would if they could obtain help from MKO in the ZPD (Vygotsky, 1978; Sanders and Welk, 2005; Dunphy & Dunphy, 2003) (See Appendix P).

The major underpinning of SCT is *social interaction*. Social interaction and collaborative involvement in learning activities often take place together and are followed by the internalisation, which finally leads to new development in the individual if a clear goal has been set (Eun, 2008; Walqui, 2006). For the transformation of a new social behaviour (e.g., a new clinical skill at the bedside) to occur, internalisation must proceed from "intermental" to "intramental" (Minick, 2005, p.39). This is "a complicated and prolonged process that requires the engagement of two or more people in a practical activity" (Shabani, 2016, p.3). In fact, the "prefix *inter* in the word intermental already presupposes there are more than one person or rather, one mentality" (ibid.). Whereas SCT stresses not only the individual functions, but also the interrelationship with other functions, it underscores the social context of the activity practice and emphasises the sociocultural sources of the learning environment where it exhibits its influence. As mentioned in Section 2.4, cultural elements in the clinical context include rituals, morals, values, beliefs, norms of practice, mentoring, management, communication, teamwork, and overall workplace culture. It is the continual interplay between learners and others (i.e., the less capable and more capable members) that ultimately co-constructs knowledge (Jones & Brader-Araje, 2002; Heimann et al., 2013; Shabani, 2016), and their interacting behaviour is a complex relationship between the sociocultural environment and students' development (Sanders & Welk, 2005).

2.5.2 Social interaction and its influence on clinical nursing skills education

Social interaction happens when reciprocal communication, relationship, and interconnectivity established among different people in the niche (Iqbal et al., 2016). Hughes and Quinn (2013) emphasised the importance of "interaction" and pointed out that nursing

students can establish their beliefs, values, behaviours, and norms of practice through induction from the expected behaviour of the people in the environment. Specifically, clinical education is considered to take place in a complex social context (Salehian et al., 2017) in which social interaction occurs during socialisation (Prato et al., 2011). Such socialisation substantially contributes to the development of nurse professional "role conformity" (Hughes & Quinn, 2013, p.358), and this transformation could significantly affect students' motivation to learn in the clinical learning context (Salehian et al., 2017).

Dewey (1938) advocated the importance of experience in education, emphasising that sufficient experience is necessary to challenge students and promote cognitive learning and stated that, "the interaction is going on between an individual object and other persons. The conceptions of situation and interaction are inseparable from each other" (p.43). Based on these ideas, Dewey (1938) devised two principles on defining educative experiences, namely: 1) continuity of experience, which implies the framework of scaffolding learning supporting students to have continued growth; and 2) interaction, which assigns the interplay between objective and internal conditions that contains the transaction taking place in the individual and other factors interplaying in the learning environment (pp.44-45). In terms of clinical nursing skills education, the clinical environment is a context that influences students experiencing and interacting with people in the workplace, and this innate culture would eventually influence their cognitive and psychomotor skills development (Adibelli & Korkmaz, 2017). Specifically, through enhancing their cognitive level by reflection and higher-level thinking, students' psychomotor competencies in clinical skills could be strengthened (Reilly & Obermann, 1999; Hughes & Quinn, 2013).

In the clinical environment, teaching and learning are two distinct but interrelated and dynamic processes. Reilly and Obermann (1999) described the role of social interaction in clinical skills education as:

> *… an interactional phenomenon whereby the fields of the participants, teacher, and learner intersect and are open to new experiences. Total beings are involved in this interaction and learning occurs in the three domains: cognitive, affective, and psychomotor. The dynamic requires giving and receiving by both parties*…. (Reilly and Obermann, 1999, p.46)

Reilly and Obermann (1999) further indicated that clinical teaching and learning "ought to be interactive in accord with specifically defined goals appropriate to the parties involved" (p.47) which highlights the importance of establishing desired goals and processes on the efficiency of skills education in both processes.

Nursing requires undergoing a considerable amount of skills training in various clinical settings (NCHK, 2021a), each of which representing their distinctive workplace culture and constituting to what Reilly and Obermann (1999) mentioned as "a distinct repertoire of skills and knowledge for its practice" (p.46). In each workplace, the roles of mentors and mentees are not static, meaning that they interact or even interchange their roles from time to time. For example, mentors will struggle to learn new knowledge to fulfil the needs of mentees, and mentees will share what they have learnt to mentors – an incessant interactive process.

Several studies such as Adibelli & Korkmaz (2017) and Iqbal, et al. (2016) pointed out that one of the factors affecting the social interaction between students and the clinical learning environment is the psychosocial factor of the clinical environment. Chuan and Barnett (2012) analysed the multi-dimensional data collected from different categories of participants (i.e., students, tutors, and staff nurses), and the findings demonstrated that several factors such as students' and staff nurses' positive attitude towards students' learning, learning opportunities, adequacy of time, and equipment to perform procedures could enhance student's learning. In contrast, the hindrance factors included busy environment, students treated as helpers, and overloading students at the clinical place. Despite the regional differences and lack of in-depth exploration, this finding is noteworthy because it revealed the factors influencing the positiveness of the clinical learning environment and indicated the significance of effective interaction and collaboration from the perspectives of different stakeholders.

Social interaction places emphasis on human contact, for example the relationship among learners, mentors, and others in the clinical situation (Newton et al., 2012; Gurkova & Ziakova, 2018). The importance of individualised supervision and close interaction on students' perceptions of clinical learning environment was illustrated by Gurkova & Ziakova (2018) who highlighted the students surveyed gave a higher CLEI score to quality of nursing care and ward culture than to mentor-student supervisory relationship. The authors thus recommended a shift from group supervision and increased the number of supervisory staff to improve the skills education implementation.

Hegenbarth et al. (2015, p.306) investigated the factors affecting the preceptorship outcomes of nursing students and generated the “cultural factors” and “contextual factors” as the two overarching themes, which reflected that the social interaction among students and mentors (i.e., nurse teacher or clinical mentor) can be regarded as the influencing factors that significantly affect the preceptorship outcome. Specifically, students commented that having a nurse teacher who is familiar with the working unit interacting closely with students can bring more positive outcomes than negative ones.

Students in Dadgaran et al.’s (2013) study, on the other hand, specified four sociocultural factors affecting their clinical learning, namely: “society and culture”, “family”, “staff and classmates”, and “facilitators”. The authors then generated the theme “accompaniment or withdrawal” which underlined the effect of being respected by staff on student’s learning, and the theme “interaction or interference”. They exhibited the reciprocal influence during the collaborative learning process and suggested the positive effect of an interactive and participatory atmosphere in transforming the clinical place into a suitable sociocultural environment for clinical education. This study echoes the findings by Hughes and Quinn (2013) on the importance of self-identity recognition and team building in clinical education, and how the students believe interaction will affect their skills learning experience.

Another commonly recognised situation is when nursing students exchange information during interacting with different personnel at the practicum, messages that conflict with the practicing curriculum may appear. In other words, there may be cases in which the practice and the norm runs contrary to the theories, leading to the development of practice gap and the presence of hidden curricula, which may bring problems to the clinical education (White & Ewan, 1991; Karimi, et al., 2014; Dadgaran et al., 2013). Several studies recommended using strategies such as reflection and feedback through interaction with students to promote their critical thinking and professionalism to tackle this situation (Karimi et al., 2014; 2017; Chen, 2015). Karimi et al. (2014) suggested persons having regular interaction with students should possess professional attributes and play a “role model” to promote professionalism and applying “moral imagination” and “practical wisdom” to respond to hidden curricula (Chen, 2015, p.15).

2.5.3 Utilisation of Vygotsky's SCT in clinical skills education

Vygotsky's SCT (1978) has been widely applied in different educational arenas (Aliakbari et al., 2015; Mahn, 1999). For example, because of its emphasis on notions of social origin in mental functions, unity of behaviour and consciousness, mediation, and psychological systems, it has been utilised in studying teachers' professional growth in their workplace (Shabani, 2016). Aliakbari et al. (2015) reviewed literature discussing prominent learning theories on nursing education and grouped them into three main categories: "behaviorism", "cognitive theories", and "constructivist theory of learning" (p.3) which addressed different learning situations. For these authors, Vygotsky's SCT (1978) emphasises learning in the workplace where the interaction takes place between the learner and social environment (ibid.). Based on Aliakbari et al.'s (2015) work, Vygotsky's SCT (1978), is categorised as cognitive-social learning theory with an emphasis on social interaction processing, internalization, and higher cognitive thinking (Olson & Hergenhahn, 2013). It affirms the importance of sociocultural elements of clinical learning environments to nurse learners, which is especially relevant in the adult learning profession (Mukhalalati & Taylor, 2019), and is a valuable tool for studying their skills education in current study.

Substantial literature acknowledges the utility of the application of SCT in various educational fields (Shabani, 2016; Gao, 2012; Sanders and Welk, 2005; Spouse, 1998; Vasileva & Balyasnikova, 2019). Spouse (1998) noted the problem of nursing students being unsupervised due to the clinical mentor's role being unclear during practicum and undertook a longitudinal study, which revealed that students considered good supervision was important. The study recognized SCT's theoretical rationale that an effective supervisory role can lead to future professional development in nurses through scaffolding activities, therefore signified the reciprocal benefits between students and clinical practitioners through the educational process. Heimann et al. (2013) also acknowledged the use of SCT and favoured the changes capable of influencing both environment and humanity in nursing education, thus suggesting SCT's values and nurses' knowledge-building based on assumptions that give priority to an environment seeking personal and a collective balance and searching the knowledge necessary for complementary, simultaneous, and continuous interaction. Regarding applying the concept of Vygotsky's zone of proximal development, Sanders and Welk (2005) evaluated the use of teaching strategies to scaffold nursing student's learning. Their study evidences the strengths of this theory when applied in the nursing education. From which, the authors also believe by partnering different learners in the educational

process, the nurse teachers can optimize the learners' growth, development and concludes that the socialization and collaboration process happening in the zone of proximal development can facilitate the learner's growth towards higher levels of potential.

The major concern of SCT is that, as Vasileva and Balyasnikova (2019) suggested, the limitation of Vygotsky's (1978) theory might relate to his early death that had prevented him from further elaborating his theoretical views and expanding his early empirical work in detail. However, the authors did mention that there is potential for incorporating Vygotsky's scholarship into the contemporary psychological and educational landscape.

2.6 Gaps in the current literature

Given this literature, a number of gaps have been identified which are relevant to the focus of this doctoral study. Briefly, of note, there is a gap in knowledge about Vygotsky's Sociocultural Theory (1978) which, in this context, examines clinical nursing skills education. There is insufficient literature relating to the contextual cultural elements and impact on the clinical teaching and learning in actual practicum environments. This is a particularly notable omission within the context of Hong Kong. There is also a gap of knowledge on discussing the use of participant observation as a data collection method in the clinical nursing practice environment. In addition, the opportunity for the researcher who has clinical and academic experiences (researcher positionality) has been overlooked within the literature related to the focus of this research study. Last, the studies which tend to explore this phenomenon are mostly from a single perspective (e.g., from the perspective of nursing students or clinical staff): seldom has there been a study which incorporates multiple perspectives, specifically any that adopts a case study methodology. Based on the aforementioned aspects, the significant knowledge gaps have been identified and addressed in this study.

2.7 Summary

This chapter is a critique of the literature that is relevant and informative to the current study, with an aim to uncover unknown areas in the challenges on local clinical nursing skills education. Guided by the key terms in the research questions, the review divides into three main parts. The first part introduced the concept of clinical nursing skills education and the background of Hong Kong clinical nursing skills education. The second part reviewed international and local literature on sociocultural factors and cultural elements in the clinical

context. The third part discussed the literature related to the theoretical framework "Vygotsky's Sociocultural Theory (1978)". Particular attention was dedicated to the notion of social interaction and its relationship with clinical skills education, and its utilisation in the educational context, particularly in nursing education. The next chapter presents the methodology used for this study.

Chapter 3: Methodology

3.1 Introduction

This chapter presents the methodological approach for this study. The research aim and questions, researcher's positionality, theoretical framework, philosophical assumptions (including the overall paradigm), ontology and epistemology are initially outlined. This chapter discusses the methodological orientation of this work, including the reasons for choosing a qualitative approach and particularly a case study methodology. An account of the research, including a description of the sampling, data collection and data analysis methods, is eventually illustrated before explaining how the trustworthiness of this work and its ethical compliance are maintained.

3.2 Research aim and questions

Research aim:

To reiterate, the research aim of this study is to explore the challenges in conducting clinical nursing skills education for pre-qualified nursing students in a local clinical environment.

The associated research questions are as follows:

RQ1 What are the sociocultural sources in the local clinical setting that affect the development of nursing students' clinical nursing skills?

RQ2 How do the existing sociocultural sources in the local clinical setting affect the development of nursing students' clinical nursing skills?

RQ3 To what extent do the cultural elements in a clinical environment influence the cognitive thinking of nursing students through a transformation process into a higher level and eventually affect their mastery of clinical nursing skills?

RQ4 How does the social interaction between the nursing students and other professional parties in the clinical environment affect the teaching and learning process of the clinical nursing skills education

3.3 Researcher's positionality

According to Creswell and Poth (2018), the researcher's positionality influences the way a study is structured, based on his/her basic assumptions towards the topic under investigation. My interest in the research topic is driven by my own professional experience. I graduated

from a Hong Kong conventional nursing training school in 1991 and have been working in the nursing field for thirty-one years. During this experience, I have undertaken different positions in the profession, from being on the frontline as a clinical practitioner to a nurse teacher for nursing students in a university. For me, working as a nurse is like drinking a cup of old herbal tea, pungent and bitter at first but eventually it tastes sweet upon reaching the throat. Upon finishing secondary school, I chose to study nursing as I believed that the nursing profession is a meaningful career. During the early stages of my developing career, I spent most of my training hours in clinical wards and it involved only less than one year when I was in the nursing school for lectures. At that time, skills training for nursing students was mainly via an apprenticeship model, where we were expected to observe, to learn and to repeat the actions of experienced practitioners in the clinical field. I recall that learning effectiveness relied on procedures, the environment, and the people I came across. In this regard, looking back, I thought the apprenticeship as the most demanding period of my clinical learning. It was not long after that when I came to understand that the clinical environment is also full of unforeseen challenges. The values, beliefs and attitudes of my clinical fellows have influenced various aspects of my life. As for skills nurturing, nursing students spend most of their time in the clinical environment where they must learn from, socialise and work with their peers and different attendants. Developing skills in such environments is therefore critical for nursing students to become professional clinical practitioners.

Throughout my nursing career, I have seen the successes and failures of students during their training, and I have also witnessed students who chose to leave the profession after graduating. Over the years, colleagues and students have shared with me some of the challenges they have faced in this profession. For example, some nurse teachers faced difficulties in carrying out their duties because of their busy schedules. Some students also spoke to me about the barriers that affected their practising and development of nursing skills. From these informal conversations, I have constantly wondered what are and how do the sociocultural elements of a learning environment affect the nursing skills building of pre-qualified nursing students. They develop my intrinsic interest to explore this topic in the doctoral programme.

3.4 Theoretical framework

According to Grant and Osanloo (2014), a theoretical framework acts as a research blueprint that is grounded on a theory focused on a specific context (Adom et al., 2018). This framework underpins a study, it outlines its structure and shows how the work is being defined philosophically, epistemologically, methodologically and analytically (Grant & Osanloo, 2014). Merriam (2001, p.45) defined a theoretical framework as "the structure, the scaffolding, the frame of your study". Considering its aim and questions, this research draws upon Vygotsky's sociocultural theory (SCT) (1978) as its theoretical framework.

In using Vygotsky's SCT (1978), I identified four justifications. *Firstly*, SCT posits that, "humans are active, vigorous participants in their own existence" (Vygotsky, 1978, p.123) by means of a suitable "auxiliary stimulus" (ibid., p.123) from their learning environment. The learners' elementary mental functions, including their memory, attention, sensation, and perception, can progressively lead to the development of higher-level skills and help them accomplish complex assignments (Vygotsky, 1978). With the aid of SCT, this study examines how the social and cultural elements of the clinical environment affect the students' (active agent) nursing skill building and whether they receive adequate stimulation from an appropriate learning tool that can help develop their cognitive, psychomotor or affective competency (NCHK, 2012; Salsali, 2005; Reilly & Obermann, 1999). In other words, this study is interested in how nursing students develop their skills in a clinical setting from an elementary level (e.g., basic body mechanic principles) and apply such concepts to a higher-level nursing procedure (e.g., turning a patient with one-sided hemiplegia) by acquiring input from their mentors and a supportive learning climate (Chow & Suen, 2001; Chan, 2004). This theoretical idea related to SCT underpins the base of this study and facilitates the whole exploration process.

Secondly, Vygotsky argued that the community plays a central role in the learning process (Vygotsky, 1978; Jaramillo, 1996). According to Vygotsky, the community is a "complex learning environment" (Jaramillo, 1996, p.135) that underscores the rudimentary role of social interactions in the cognitive development of learners (Vygotsky, 1978). By applying SCT and treating nursing students as active learning agents, this study explores how these agents experience such socially mediated process (e.g., tutoring, mentoring, or coaching) through which they gain knowledge, values, beliefs, thinking strategies and skills from significant others (e.g., mentors, teachers or clinical nurses). The study is also interested in

how these students develop higher-level cognitive abilities, such as critical thinking and problem-solving skills, and subsequently manage complex clinical tasks. I also explore how Vygotsky's (1978) theoretical ideas, including social interaction, scaffolding, collaboration, zone of proximal development and more knowledgeable others, apply to the clinical environment as a social learning context with a specific workplace culture and cultural elements (Chan, 2004; Chan & Ip, 2007; Chan, 2019; Materne et al., 2017). SCT offers possibilities for understanding the social and cultural interactions amongst learners (i.e., nursing students) and personnel (i.e., mentors, teachers and clinical nurses) throughout the environment (Spouse, 2001; Heimann et al., 2013).

Thirdly, Vygotsky (1978) argued that the cognitive development of learners is related to the internalisation of language. He proposed that learning only becomes useful when it takes place ahead of development and claimed that "language arrives on the scene, thinking and speech intermingle and merge, and in so doing transform one another" (Walqui, 2006, p.161). Through the internalisation of social speech and mediation by private inner speech, a learner can organise and control tasks that can foster his/her actual level of development in advance (ibid.). Using speech as a cultural tool also promotes the mental cognition of learners. In other words, when learners receive stimulus through interactions, they produce verbal thought (inner speech) that can develop their knowledge and conception of the learning topic (Vygotsky, 1978).

Fourthly, Vygotsky's (1978) conceptual ideas relating to social interaction, scaffolding, collaboration, zone of proximal development and more knowledgeable others are interrelated (Jaramillo, 1996; Kozulin, 2002). The social environment is a crucial element in learning (Silalahi, 2019; Keenan et al., 2016). SCT posits that social interactions depend on the learner as an active agent that continuously interacts with and learns from the sociocultural elements in his/her context (Vygotsky, 1978; Silalahi, 2019). Zone of proximal development describes a learner's zone of potential, in which "proximal" refers to those skills that the learner is close to mastering (Vygotsky, 1978). It involves the following important concepts including, the learner receiving guidance from a more knowledgeable person (i.e., mentor, coach, teacher or more capable peer) during his/her learning, and the more capable persons being willing to support and scaffold the learners, in addition, the appropriate mediated learning tools (i.e., teaching strategy, assignments, protocols or practice opportunities) are used for facilitating learning, and last the learners collaborate with the more capable others in co-

constructing knowledge (Vygotsky, 1978). In this case, the learner's cognitive development stems from his/her social interactions with more capable people, which also helps this learner develop his/her potential in the zone of proximal development (Vygotsky, 1978).

3.5 Research paradigm

A research paradigm reflects the beliefs of the researcher and shapes the entire research procedure (Guba, 1990; Creswell, 2007). This paradigm considers the researcher's philosophical assumptions, ontologies, epistemologies (Crotty, 1998) and the conceived research methodologies (Neuman, 2000). I explain in this section how my choice of paradigm reflects my stance in the ontology, epistemology, and methodology for exploring the topic of this case study (Guba & Lincoln, 1994). Specifically, my research paradigm utilises a social constructionist perspective that allows me to explore the challenges (ontology) faced by nursing students in clinical settings and to adopt an interpretivist perspective that allows me to construct relevant knowledge (epistemology) of the related issues in the "meaningful reality" (Crotty, 1998, p.55).

Ontology is "the study of being" (Crotty, 1998, p.10), which is "the form and nature of reality" (Guba & Lincoln, 1994, p.108). I adopt my ontological position on viewing the social world as being constructed by different interpretations (Willig, 2013) which varies among people with different cultures, therefore, to understand how people construct their realities is more important than only posing a hard definition (Denscombe, 2010). Based on this understanding, my philosophical position is social constructionism and takes an interpretivist perspective. A constructionist ontology treats reality as a product of an individual's perception and his/her unique understanding and it emphasizes "the processes by which they are culturally constituted" (Hammersley, 2007, p.298).

I place my epistemological stance in the social constructionism approach, which posits that a philosophical assumption can be ascribed to the perspective that "our knowledge of the natural world is as socially constructed" (Crotty, 1998, p.56). According to Creswell (2007), in social constructionism, individuals seek to understand the world they live and work in, develop subjective meanings of their experiences and focus on the complexity rather than on the narrow meaning of the issue at hand. Scholars have often closely linked social constructionism to interpretivism (Creswell, 2007; Creswell & Creswell, 2018; Crotty, 1998; Gray, 2018) but assumed that the subjective meanings of a knowledge are socially negotiated

and are not simply imprinted on individuals which they are formed through interactions with others or are influenced by historical and cultural norms (Creswell, 2007; Gray, 2018; Creswell & Creswell, 2018). According to Braun and Clarke (2013), social constructionism is described as follows:

> *… [it] rejects a single ultimate truth. Instead, it sees the world, and what we know of it, as produced (constructed) through language, representation, and other social processes, rather than discovered. The terms in which the world is understood are seen related to specific socio-political, cultural, historical contexts, and meanings are seen as social artefacts, resulting from social interaction, rather some inherent truth about nature of reality.* (Braun & Clarke, 2013, pp.336-337)

The above description is congruent with the notion by Fish (1990, cited in Crotty, 1998, p.52), who argued, "all objects are made and not found". Social constructionists suggest that people are already embedded in one's knowledge and, through an interpretative strategy, helps construct meanings that largely depend on the process of interaction amongst individuals (Crotty, 1998; Creswell & Creswell, 2018; Young & Collin, 2004).

This study aligns with the perspective that knowledge is constructed from the different views of people including myself (researcher). I form this perspective through interviews, a focus group, and my own experience and reflection from my teaching. I situate this knowledge construction within the clinical nursing education setting, which is a sociocultural context that allows both me and my research participants to co-construct the meaning of reality (Holstein & Gubrium, 1995; Mertens, 2010).

However, the main challenge in actualising this epistemological stance is to co-build my research subjects' and my (researcher) own understanding of the case topic. In my dual positionality, I act both as an outsider (facilitator of the interviews and focus group) who manages the research process and as an insider who writes my research diary to record my participant observation and reflection during the clinical visit and skills laboratory teaching. Creswell (2007) proposed that in qualitative research, researchers should not only interpret their data but also maintain the "reflexivity" and "visibility" of the entire research process, that is, the researcher should have "personal reflexivity" and to demonstrate "how our [researchers'] assumptions can shape the knowledge produced" (Braun & Clark, 2013,

p.37). Therefore, I kept a research diary to record my participant observation and reflective thinking in my skills class teaching, clinical visit as well as the whole research process.

3.6 Methodological considerations and justifications

The purpose of this study is to understand the case phenomenon in which the sociocultural factors of the learning environment leading challenges in clinical skills education for the pre-qualified nursing students. In the following sections, I will discuss my justifications for choosing the methodology, sampling and recruitment procedure, and the data collection and analysis method.

3.6.1 Qualitative approach

Given my philosophical position, I chose to conduct a qualitative case study methodology for this work (Stake, 1995). This methodological consideration is based on my philosophical assumptions, worldview and set of beliefs for the choice (Creswell, 2007; Punch, 2011). The inquiry emphasizes the researcher's recognition and interpretation to make sense of the content (Creswell, 2007). To access the participants' in-depth opinions and perspectives, my participant observation and reflection through the research diary entries are constructing such holistic understanding. Hence, using qualitative textual data presenting thick narrative comprehension is considered more appropriate than using numerical empirical data to provide a comprehensive description and explanation of the research case (Punch, 2011).

3.6.2 Case study methodology

According to Bloor and Wood (2006, p.27), a case study aims to "understand social phenomena within a single or a small number of naturally occurring settings". Using Stake's (1995, p.3) description of case study research, my case study is both "intrinsic" and "instrumental". Stake (1995) argued that an intrinsic case study is conducted from the researcher's perspective and that the case being investigated is selected due to its particularity and singleness (Stake, 1995; Baxter & Jack, 2008; Thomas, 2016). My basic interest for this case originates from my professional experiences working in clinical education, where I saw the need to improve the clinical skills standard for nursing students given the unsatisfactory performance they have shown in clinical contexts in recent decades. The invaluable input of nursing students and teachers has fostered my interest to construct an understanding on this case. Given my professional experience, my positionality, and my puzzlement regarding nursing skills education, I intend to examine this complex social phenomenon.

My study is also instrumental. According to Stake (1995), an instrumental case study aims "to understand something else" and is "instrumental to accomplishing something other than understanding this" (p.3). In my study, the case (clinical nursing skills education for nursing students) plays a supportive role in facilitating my understanding of another issue (the sociocultural elements in the local clinical context) and the relationship between these two topics. An in-depth examination scrutinizes the issue and examines the ordinary activities in detail to generate insights related to this issue (Stake, 1995). Therefore, my study is both an intrinsic and instrumental case study according to Stake's (1995) definition.

According to Stake (1995), case study methodology is performed from the perspective of a social scientist unlike natural science studies wherein the case is considered as an "integrated system" and "the parts do not have to be working well" (p.2). This statement highlights the usefulness of case study research in social sciences and criticizes "the rules of closed systems of the causal sciences do not apply" (Forrest-Lawrence, 2019, p.6). Although natural science researchers have criticized the limited generalization and subjectivity of case study methodology (Simons, 1986; Gerring, 2006), they do not detract social science researchers from using case studies as a critical research approach (Stake, 1995; Creswell, 2007). Some scholars have voiced out different perspectives towards the use of case study methodology, specifically on its utilization in different fields of sciences, its sampling requirements, its uniqueness and particularity and its emphasis on the researcher's interpretation (Stakes,1995; Flyvberg, 2011; Forrest-Lawrence, 2019). In response to these criticisms, Flyvberg (2006) highlights the value of case study research is not in proving the rigid proposition of a science test but in looking for *unusual* areas that require further investigation (Stake, 1995). Accordingly, Forrest-Lawrence (2019) commented that the limitation of a case study is in "actuality one of its key advantages" (p.7).

3.6.2.1 Considerations when conducting case study research

Regarding the case selection, since the case study performed in this work is both intrinsic and instrumental, the case is "pre-selected" (Stake, 1995, p.4) and it is chosen based on my (researcher) original interest and needs. In terms of the case boundary, defining strict time frame and space boundaries of the case is *difficult* (Atkinson & Delamont, 1995; Bloor & Wood, 2006). Many scholars have argued that social systems are seldom bounded rigidly; instead, their boundaries are sometimes determined by the researchers or based on the topic being pursued (Bloor & Wood, 2006; Stake, 1995).

Concerning the sampling, Stake (1995, p.4) argued that "case study research is not sampling research". This methodology does not set up strict sampling requirements that may bar the case selection (Forrest-Lawrence, 2019; Stake, 1995). Its instrumental nature requires me to investigate the case background, identify unusual cases and determine their underlying value to "illustrate matters we overlook in typical cases" (Stake, 1995, p.4). Pinpointing these features also further highlight the *uniqueness* of the case, for example, in this study, the features include the *unique* sociocultural elements of the local clinical context, which reinforce the exposition of a positive sociocultural environment and highlight its relationship with clinical skills teaching and learning. Since I use one case to support the understanding of another case issue, the instrumental nature of the work helps to achieve this purpose.

With reference to "uniqueness" and "particularization", these elements supersede the aim to achieve "generalization" (Stake, 1995, p.8) in exploring a specific topic. To achieve these elements, I recruited *four* categories of participants from the nursing field for individual interviews and a focus group interview to develop a multi-dimensional perspective that helps in "understanding the case itself" (Stake, 1995, p.8). Stake (1995, p.9) highlighted "on the basis of observations and other data", it reinforces the researcher's *drawing conclusion* and develops *personal interpretation* on the case. Hence, I performed my participant observation on the clinical visit and skills laboratory teaching in which it gathered my teaching experience, interaction with students, interpretation, and reflection in the process of skills teaching and learning. It aids to develop a unique and representative case study and to visualize the topic in great depth.

3.7 Methods

I employed three data collection methods for my case study, namely, semi-structured individual interviews, a focus group, and participant observation in a one-day clinical visit and the skills laboratory teaching for a 4-month period in the university. According to Stake (1995), case study researchers should possess "experience of ordinary looking and thinking" (p.49) and the adoption of multiple data sources could "increase the confidence of our [researchers'] interpretation" (p.114). He suggests it requires a "critical examination" of the collected data (p.50) through "reflective practice" (p.50) and "guided by the research question" (p.50). In the current study, the complex relationships of findings are presented by

integration of the data from different datasets, tables, charts, and thematic map (Table 6, Figure 19) illustration.

I used research questions guiding the entire research process to ensure all the findings are relevant. The participant observation data from the clinical visit was gathered with the data from individual interviews and focus group for an integrated thematic analysis because they were focused on skills teaching in a clinical environment. On the other hand, the participant observation data from the skills laboratory teaching were kept in long as over 20,000 words diary notes which paid attention to the skills education aspect and another set of themes were generated.

3.7.1 Data collection methods

I spent 5 months (March to July 2020) arranging and carrying out the individual interviews and a focus group, and another 4 months (September 2020 to December 2020) in performing my participant observation for a clinical visit and university skills laboratory teaching. I entered my participant observation notes and reflection in my research diary. It allows me to delineate my thoughts and practice to formulate ideas that can facilitate the interpretation and understanding for the whole study (Snowden, 2015).

Table 1: Summary of the data collection methods

Method types	**Sampling methods**	**Participants involved**	**Duration**	**Period**
Individual interview	Purposive sampling	Nursing students, nurse teachers, frontline clinical nurses and advanced practice nurses	45 to 60 minutes	March 2020 to May 2020
Focus group	Purposive sampling	Nursing students, nurse teachers, frontline clinical nurses and advanced practice nurses	2.5 hours	July 2020

Research diary (Participant observation)	Researcher as the instrument	Researcher's own self	• One-day visit to a local hospital where students having their practicum • 3 hours/week for skills laboratory teaching in a local university	November 2020 September 2020 to December 2020

3.7.1.1 Setting

This case study research was situated within a local university – University B in which all the first-year nursing undergraduates must attend the fundamental nursing skills training in the university and the clinical places. The students must obtain a pass grade in the in-house semester course before proceeding to the clinical practicum education in the following year.

3.7.1.2 Sampling

This case study focused on heterogeneous groups of nursing members to achieve a "diversity of perspectives" (Braun & Clarke, 2013, p.56) towards the clinical nursing skills education in the local context. Four categories of participants including nursing students, nurse teachers, frontline clinical nurses/clinical mentors, and nursing managerial personnel (i.e., advanced practice nurses) were recruited spending their practice in Hong Kong. Two different groups of participants were arranged for the individual interviews and focus group. I adopted purposive sampling as the sampling method to select the relevant and information-rich samples (Braun & Clarke, 2013; Schreier, 2018; Patton, 2015).

Given the aim of this study, the elements at stake and the credible useful content to be obtained within a limited amount of time and resources (Patton, 2002), I designed the sample size and recruited two other participants (a nurse teacher and a nursing student) as pilot participants. According to Patton (2002), "there are no rules for sample size in qualitative inquiry" (p.244). Despite focusing on "particularization" and "uniqueness" (Stake, 1995, p.8), a case study also aims to "minimize the mispresentation and misunderstanding" (Stake, 1995, p.109). I also checked whether the amount of information was sufficient to answer the research questions. Given that only two advanced practice nurses (managerial personnel)

accepted my invitation for individual interview, I recruited a total of 14 participants for the data collection in the interview part.

Literature has not yet reached a consensus regarding the optimum sample size for a focus group (Fern, 1982; Morgan & Spanish, 1984; Braun & Clarke, 2013). Instead, they propose an ideal "group composition" to "generate differing viewpoints" (Morgan & Hoffman, 2018, p.254) and "best suited to his or her [researcher's] research question" (Morgan & Spanish, 1984, p.255). Some studies suggest 6 to 10 focus group participants for easy management (Mishra, 2016; Nyumba et al., 2018; Robinson, 1999; Morgan & Hoffman, 2018). In view of the indoor restrictions and social distancing policies implemented in University B during the COVID-19 pandemic, I recruited 7 participants (including 2 nursing students, 2 nurse teachers, 2 clinical nurses and 1 advanced practice nurse) for the focus group. The purpose of this *heterogeneous* sampling composition "brings different views and produces more diverse discussion" (Braun & Clarke, 2013, p.114) which aims for exchanging rich and complex data through the group discussion.

3.7.1.3 Recruitment process

I began the recruitment procedure after receiving ethical approval (Appendix A) from my serving and studying university on 11 March 2020 and 24 March 2020 respectively. I sent out invitations to the potential participants via email (see Appendix N, O). To ensure that the recruitment was organized and manageable, I recorded the entire workflow and information about the potential participants on a worksheet. After receiving their responses and ensuring their suitability for this study, I scheduled face-to-face semi-structured individual interviews with these 14 participants on their preferred time and venue. I also consulted with the Deputy Dean of University B and scheduled a seven-participant focus group which took place in a tutorial room at the university.

3.7.1.4 Setting up inclusion and exclusion sampling criteria

I set up inclusion and exclusion criteria to ensure that only the most "relevant" and "information rich" participants were recruited for the individual interviews and focus group (Gray et al., 2017; Patton, 2002; Sandelowski, 1995). It is to ensure that the participants contain the most desirable attributes for outlining the characteristics of the topic and to

exclude those that may only lead to confusing research findings (Gray et al., 2017; Polit & Beck, 2018).

In terms of the inclusion criteria of the participants, I ensured all participants fulfil the following requirements: 1) the nurse teachers should have experience in teaching clinical skills to pre-qualified nursing students at the university in the local clinical setting over the past 3 years and should have at least 5 years of clinical experience; 2) the nursing students should be currently enrolled as full-time pre-qualified nursing students at the university (higher diploma or undergraduate nursing programme) and have practicum experience in the local clinical setting over the past 3 years; 3) the clinical nurses should have experience working along with the pre-qualified nursing students from the university in the local clinical setting over the past 3 years; and 4) the managerial personnel (ward managers/advanced practice nurse) should have experience working with pre-qualified nursing students from the university in the local clinical setting over the past 3 years.

In terms of the exclusion criteria of the participants, I also checked up the following conditions for participants selection: 1) nurse teachers without any clinical teaching duty in the local clinical setting; 2) nursing students without any clinical practicum learning experience in the local clinical setting; 3) clinical nurses without any experience working with pre-qualified nursing students in the local clinical setting; and 4) managerial personnel (ward managers/advanced practice nurses) without any experience working with pre-qualified nursing students in the local clinical setting.

3.7.2 Semi-structured individual interviews

The reasons for using semi-structured interviews as the first data collection method related to gaining the insights, experiences, and perspectives of the multiple participants for this study. I was keen to develop a more conversational style of generating knowledge and understanding from the participants. I was particularly sensitive to Brinkmann and Kvale's (2018) advice about knowledge being constructed in the interaction between the interviewer and interviewees. Further still, I aimed to portray this case phenomenon from multiple dimensions of different participants who were involved in clinical nursing skills education and to develop a holistic understanding of the case issue. According to Yin (2018, p.118), interview is regarded as "one of most important sources of case study evidence". I designed four sets of

interview questions tailored to the respective participants and ensured that all these questions were congruent with the research topic. The demographic data of the interview participants are listed below. According to Adams (2015), "the semi-structured interview employs a blend of closed- and open-ended questions, often accompanied by follow-up why or how questions" (p.493) and usually follows a written guide (i.e., interview protocol) to ensure that all questions are addressed (Polit & Beck, 2018; Braun & Clarke, 2013).

Table 2: Demographic profile of the interview participants

Category	**Pseudonym**	**Identifier**	**Gender/ Age/ Ethnicity**	**Years of postgraduate experience**	**Years of undertaking clinical nursing education**	**Programme involved**
Nurse teacher	Tso	P01 (Pilot)	F / over 50 / Chinese	More than 20 years	More than 20 years	Sub-degree programme
Nurse teacher	Annie Long	NT01	F / 31-40 / Chinese	5 to 10 years	Below 5 years	Sub-degree and undergraduate programme
Nurse teacher	Ruth Cham	NT02	F / 41-50 / Chinese	More than 20 years	Below 5 years	Sub-degree and undergraduate programme
Nurse teacher	Ada Li	NT03	F / 31-40 / Chinese	16 to 20 years	5 to 10 years	Sub-degree and undergraduate programme
Nurse teacher	Fanny Lo	NT04	F / 31-40 / Chinese	5 to 10 years	Below 5 years	Sub-degree and undergraduate programme
Nursing student	Ashley	P02 (Pilot)	F / above 25 / Chinese	NA	Below 5 years	Sub-degree programme
Nursing student	Kate	NS01	F / above 25 / Chinese	NA	Below 5 years	Sub-degree programme
Nursing student	Harry	NS02	M / 18-25 / Chinese	NA	Below 5 years	Undergraduate programme
Nursing student	Cathy	NS03	F / above 25 / Chinese	NA	Below 5 years	Sub-degree programme
Nursing student	Haco	NS04	M / 18-25/ Chinese	NA	Below 5 years	Undergraduate programme
Frontline clinical nurse	Pao Li	CN01	F / 41-50 / Chinese	16 to 20 years	Below 5 years	Sub-degree programme

Frontline clinical nurse	Holla	CN02	F / 21-30 / Chinese	Below 5 years	Below 5 years	Sub-degree programme
Frontline clinical nurse	Rossana	CN03	F / over 50 / Chinese	More than 20 years	More than 20 years	Sub-degree and undergraduate programme
Frontline clinical nurse	Race	CN04	F / 21-30 / Chinese	Below 5 years	Below 5 years	Sub-degree and undergraduate programme
Advanced practice nurse	Lui	APN01	F / over 50 / Chinese	More than 20 years	More than 20 years	Undergraduate programme
Advanced practice nurse	Chai Ho	APN02	F / over 50 / Chinese	More than 20 years	16 to 20 years	Undergraduate programme

3.7.2.1 Pilot interviews

I recruited 16 candidates for the interview session, in which two participants (Tso and Ashley), representing two nursing categories (nurse teacher and nursing students), were selected for the pilot interviews. Tso (identifier: P01) is an experienced nurse teacher with experience in clinical skills education for different nursing programmes. Ashley (identifier: P02) is a third-year nursing student with two years' clinical learning experience in the public setting. The demographic data of these participants are shown in Table 2. After the pilot interview, I transcribed the interview responses, and revised my questioning technique.

As a novice researcher, doing pilot interviews helped me to evaluate my interview protocol, refine my questioning technique, and allowed me to reflect on my own interview skills. I chose two participants (one nurse teacher and one nursing student) for piloting. Through the piloting, I found it was somehow quite awkward to start the conversation at the beginning. On a personal and cultural level, I don't usually find myself talking with strangers and this could be interpreted from a western lens as being shy, and seems to be in tension with Gillham's (2004) insight that interviewing to some extent is a personal business. As a doctoral student, I came to understand that I needed to develop my skills to become an effective interviewer, and that I currently lacked the experience and knowledge about this. I read the related academic literature, and particularly found Brinkmann and Kvale's (2018) useful. I gained a better understanding on how to conduct the face-to-face interview. I also came to learn that I must be more familiar with the interview questions, to be flexible, and at times be able to rephrase the wordings of questions, to recognize that in semi-structured interviews to listen to the interviewee more carefully, to be aware that question orderings can

change, to be more communicative, and be more confident in developing a conversational style during the interview. During the second pilot interview, I felt more confident, I was able to practice my new understanding and discovered that I developed my interviewing skills in asking probing questions, developing a more natural conversation and I gained a deeper response as a result.

3.7.2.2 Process of conducting interviews

I performed all the interviews and transcriptions myself to minimize variations from each investigator's practice. After receiving the response emails of the selected participants, I contacted them by email or by phone to assess whether they satisfied the inclusion criteria. Upon confirming their interest in participating in this study, I sent them an email (Appendix O) with a research information sheet, demographic information sheet and consent form (Appendix D, E) attached that needed to be returned before a prescribed date. I allowed these participants to choose between returning these documents by email or in person during the interviews.

On the day of the interview, before the formal session began, I informed the participants about the aims of the interview, the expected duration (around 45 to 60 minutes) and the purpose of collecting their data. After the participants fully understood the interview content, I collected the signed consent forms and, in some instances, when participants forgot to return their signed forms, I invited them to sign the informed consent at the site. I assured them that they could withdraw from the study at any time and their participation did not pose any risk. Given the COVID-19 pandemic, to minimize the risk of spreading the virus, I brought a hand sanitizer to the interviews and maintained a safe social distance from each interviewee. Since in-person interviews involve intense personal interactions, I exerted every effort to make the participants feel comfortable and relaxed, which would allow them to express their ideas freely because any feelings of hesitation or discomfort will affect the reliability and quality of the information they share (Marshall & Rossman, 2006). Each interview was audio recorded, and the recordings were transcribed into Cantonese before being translated into English verbatim for the analysis. The confidentiality of the interview data was ensured by encrypting and storing these data in a password-protected file and computer. Each participant was represented by a pseudonym and an alternative identifier for additional security. I eventually produced 14 interview scripts in the main study.

3.7.3 Focus group

I also organized a focus group interview as another way to collect data (Braun & Clarke, 2013). I served as a moderator in the focus group to ensure a comfortable climate for the participants, to initiate the discussion and to maintain the interaction amongst the participants (Morgan & Hoffman, 2018). The focus group interview was recorded. It included a card activity at the end of session to make the discussion more interactive and to stimulate the thoughts of the participants on the case topic. I developed a protocol to guide the focus group. According to Robinson (1999), the researcher plays two roles in managing a focus group. Firstly, acting as a facilitator and moderator, I stated the purpose of the meeting, directed, and encouraged the discussion over important areas, recognized the group dynamics, ensured the smooth operation of the focus group. Secondly, I promoted a conducive atmosphere that is to ensure that all participants effectively contributed to the discussion and also to prevent the discussion from being dominated by one individual.

Focus group is different from individual interview (Denscombe, 2010), although there are similarities in term of creating and encouraging a more conversational dialogues between participants (Brinkmann & Kvale, 2018). The rationale for choosing a focus group interview related to taking a facilitator or moderator's role and to encourage interaction between the group of participants (Denscombe, 2010). In total, seven participants were involved in the focus group interview of this study. This group interaction becomes the key means of eliciting information and the researcher aims "to stimulate discussion" (Thomas, 2016, p.192). Most importantly, this is "to let the group take the lead" (ibid.). Interestingly, during my experience of conducting this focus group interview, several important insights were gained. For example, I noticed the nurse teacher participants were far more interested in discussing the peer grouping and informed appropriate partnership and collaborative learning could enhance their skills teaching. The student participants on the other hand, focused on unfavourable ward culture that could undermine their momentum to learn. As a facilitator, I witnessed participants interacting with each other, asking questions, and seeking clarifications from each other. I also witnessed the importance of social interaction and the dynamics of knowledge construction through the interchange of ideas through the perspective of the participants, which were equally valid. The process from a focus group interview through this dynamic setting is fluid and volatile. The data collected is much richer, wide-ranging, and sometimes unanticipated than those obtained from individual interview and it is

particularly useful to “create a three-dimensional picture” (Thomas, 2016, p.4) when illustrating this complex clinical environment of this study.

Table 3: Demographic profile of the focus group participants

Category	**Pseudonym**	**Identifier**	**Gender/ Age/ Ethnicity**	**Years of postgraduate experience**	**Years of undertaking clinical nursing education**	**Programme involved**
Nurse teacher	Lang	L	F / 31-40 / Chinese	11 to 15 years	Below 5 years	Sub-degree and undergraduate programme
Nurse teacher	Yun	Y	F / 41-50 / Chinese	16 to 20 years	Below 5 years	Sub-degree and undergraduate programme
Frontline clinical nurse	Hanny	H	F / 21-30 / Chinese	Below 5 years	Below 5 years	Sub-degree and undergraduate programme
Frontline clinical nurse	Suet	S	F / 31-40 / Chinese	11 to 15 years	Below 5 years	Undergraduate programme
Advanced practice nurse	Elsie	E	F /over 50/ Chinese	More than 20 years	More than 20 years	Sub-degree and undergraduate programme
Nursing student	Apple	A	F / 18 -25 / Chinese	NA	Below 5 years	Undergraduate programme
Nursing student	Kitty	K	F / 18 -25 / Chinese	NA	Below 5 years	Undergraduate programme

3.7.3.1 Process of conducting focus group

Initially, I sent invitations to the potential focus group participants via email. Several participants expressed their willingness to take part in the research (Appendix N). I adopted purposive sampling to select the relevant participants for the focus group. Meanwhile, one nursing student and two clinical nurses changed their minds and withdrew from the study before the meeting day due to their unavailability. I then invited other potential eligible participants to replace the seats. The School Deputy Dean suggested limiting the number of persons to eight people to comply with the indoor gathering regulations of the university. Following her advice, I finally reduced the number of participants to seven. When the logistics were confirmed, I sent an email to the Deputy Dean (Appendix M) of the university to inform her about the measures implemented in the focus group meeting, such as maintaining social distance to prevent the spread of COVID-19.

I then proceeded to send out confirmation emails to all participants. Following the focus group protocol I developed beforehand, I booked a room at University B for the meeting and arranged to have microphones and hand sanitisers for the session. I sent another reminder email to the participants reminding them of the date, time, and venue of the focus group.

The focus group was scheduled at one afternoon in July 2020. It was divided into two sessions, with each session lasting for around an hour. A 10-minute coffee break was arranged in between. Most participants were reluctant to start the conversation at the beginning. After some warm-up, several of them appeared, enjoying debating the topics. I designed a card activity to arouse these participants' brainstorming and discussion. At the end of the session, participants were invited to write down their free views that arose from the previous two-hour discussion. The cards contained two questions: Question 1 was: "Write down influential factors that influence the clinical education of students the most" and Question 2 was: "What are the problems in sociocultural aspects that affect the clinical skills development of nursing students?". Participants were invited to prioritise the jotted down points on the white board during the discussion for their ideas on Question 1. For Question 2, it welcomed their freely expressed response. The entire focus group session was audio recorded, and all retrieved information was kept for future analysis. The focus group lasted approximately two hours.

After the focus group, I transcribed the audio recordings and translated them from Cantonese into English for further analysis. I encrypted and stored the transcripts in the computer and coded the focus group data afterwards.

3.7.4 Participant observation in research diary

3.7.4.1 Participant observation

I employed participant observation in my clinical visit and skills laboratory teaching class. Drawn from Spradley's (1980, p.78) framework, a guide for participant observation had been developed (Appendix H) in which I chose six of Spradley's "nine dimensions of descriptive observation" for supporting my work. With them, they included: "space/place", "actor", "activity", "event", "time" and "feeling" (ibid., p.82). Jorgensen (1989) explained participant observation stressed "direct involvement in the here and now of people's daily lives provides both a point of reference for the logic and process of participant observational inquiry" and

which is useful to be “a strategy for gaining access to phenomena” (p.9) especially it provided the researcher an opportunity to “perceive reality from the viewpoint of someone ‘inside’ a case rather than external to it” therefore regards it as “invaluable in producing an accurate portrayal of a case study phenomenon” (Yin, 2018, p.124). The phenomenon of this case study is the challenge of the nurse teachers facing when conducting clinical skills education. Reflection following the entry of participation observation data in my research diary deepens my understanding to the case phenomenon.

I adopted the role in “complete participation” (Spradley, 1980, p.61) for the participant observation exercise. Complete participation as Spradley described is regarded as the “highest level of involvement” (ibid.) which helps to preserve the “naturalness of the setting” and “minimise the disruption” (Denscombe, 2010, p.206). I took dual roles in this case, as being a teacher and a researcher inside the context, therefore I could experience the insider and outsider engagement simultaneously. I kept a notebook to jot down the key participant observation for specific encounters. I then transferred the notes into the computer together based on my protocol with my reflection in my research diary (see Appendix L). My approach was first beginning with a brief description of date, time, place (teaching venue), the group of students involved, then the engaged activities in teaching and learning, the interaction between students and me, and my post participant observation reflection. The whole piece of my participant observation data in both clinical visit and skills laboratory teaching was equally approximately over 23,000 words. The first entry of my participant observation in the skills laboratory teaching class was in September 2020 with the last entry being in December 2020 and the one-day clinical visit was in November 2020. To protect the confidentiality of the subjects inside, anonymisation and pseudonymisation have been taken place (Spradley, 1980; Denscombe, 2010). All the participant observation data had been condensed and presented in my research diary (Braun & Clark, 2013).

In this study, the participant observation took place in my university clinical skills laboratory where my skills teaching was undergone for the first-year nursing undergraduates in two days per week around 1.5 hours/session from September 2020 to December 2020. Another participant observation was a one-day visit for ten nursing students of higher diploma programme in a practicum hospital in November 2020 for 5 hours. To avoid my (researcher’s) recognition that might affect the overall judgement to the phenomenon, I used a “wide-angle lens” (Spradley, 1980, p.58) in the participant observation to refrain from

having “pre-established hypotheses” (Denscombe, 2010, p.208) to the context. I wrote my reflection in the research diary to maintain the introspection to the events. My participant observation involved a one-day clinical visit in Hospital C which is a private hospital acting as one of the practicum sites having the collaboration relationship with University B for students’ practicum. The 4-month participant observation took place in the skills laboratories which were situated in the Clinical Nursing Education Centre of University B comprising simulation facilities for students undergoing their clinical skills training.

3.7.4.2 Research diary

A research diary is useful for the researcher to record specific events and maintains self-reflexivity in the research process (Murray, 2018; Li, 2018, Thomas, 2016). In this study, my research diary serves two main purposes. First, to ensure the study being “reflective” (Stake, 1995, p.12), I kept my research diary in the entire research period to “provide a space to engage in ongoing critical questioning as it relates to all facets and stages of the research process” (Ravitch & Riggan, 2017, p.216). Second, the research diary recorded my major participant observation data that yielded an important “record” for this case study (Thomas, 2016, p.191). Through which, it could be effective for studying the specific phenomenon (Hughes, 1996; Bolger et al., 2003; Thomas, 2016).

Literature shows no strict rule in writing a research diary (Taylor, 2020; Mosurska, 2021; Sheble & Wildemuth, 2009; Thomas, 2016). I gathered the data of participant observation from the clinical visit and added these together with the interviews and focus group data, through the integrated theme development, created a unique understanding of the phenomenon in the *challenges of skills teaching in clinical setting* (see Figure 19). I regarded the diary notes in the participant observation of skills laboratory teaching to foster my insight to students’ skills education aspect, therefore, another set of themes was developed for it.

3.8 Data analysis

I used Braun and Clark’s (2013) thematic analysis (TA) approach to manage the findings of individual interviews, focus group and participant observation data from the clinical visit to develop an integrated analysis for generating resynthesized themes. Thomas (2016, p.204) suggested “categorization, sorting, finding coherence, simplifying and synthesizing” will help “achieve a good analysis” of the qualitative data. Therefore, inside Braun and Clark’s 7 steps TA process, I also counted the code frequency and highlighted the most attentive

interviewees' category on particular themes. What follows is the justification of using thematic analysis and its process.

3.8.1 Justification for choosing thematic analysis as the data analysis method

Thematic analysis is useful "for identifying themes and patterns of meaning across a dataset in relation to a research question" (Braun and Clarke, 2013, p.175) and has been widely employed for handling the interactive data, such as interview data, focus group data and participant-generated textual data (i.e., the participant observation data in my research diary of this study) (Braun & Clarke, 2013).

3.8.2 Thematic analysis process

Braun and Clarke's thematic analysis approach involves seven steps (2013, p.202). After the interviews and focus group, I transcribed the verbatim from the audio recordings and translated the transcripts from Cantonese into English. I coded each line of these transcripts by hand to immerse myself into these data and tried to make sense out of them. I saved the digital copies of my participant observation, along with personal reflections, then recorded in my research diary via the computer. I gathered the participant observation data of clinical visit, together with the findings from interviews and focus group, then carried out an integrated analysis for generating resynthesized themes to explore the teaching challenges at the clinical place. The participant observation data of skills laboratory, on the other hand, has been used for devising another set of themes for understanding the skills education aspect. I employed an inductive approach to manage the data. The seven steps in the thematic analysis approach of Braun and Clarke (2013) are outlined below.

Figure 1: Seven-step thematic analysis of Braun and Clarke (2013)

Stage	Tasks
Stage 1:	Transcription
Stage 2:	Reading and familiarisation – taking note of items of potential interest
Stage 3:	Coding – complete dataset
Stage 4:	Searching for themes
Stage 5:	Reviewing themes – generating a thematic map of the provisional themes and subthemes and their relationships
Stage 6:	Defining and naming themes
Stage 7:	Writing – finalising the analysis

(Braun & Clarke, 2013, p.202)

***First stage*: *Transcription*:** I transcribed my audio recordings of the interviews and focus group verbatim and translated them from Cantonese into English (Figure 2). The transcription (Appendix I) facilitated my subsequent analysis work, such as coding and developing subthemes, themes, sub-overarching themes, and overarching themes.

Figure 2: Sample of verbatim translation from Cantonese into English

Interviewer (R)	咁你淨話頭先講到呢 er…即係有人睇住你，可唔可以係度講多少少點樣有人睇住你係咩意思呢？	You have just mentioned er… someone monitored you, can you talk about what does it mean?
Interviewee (NS01)	就係呢話…要有一個註冊護士，mentor 啦，咁佢就睇住學生做呢啲 nursing care 嗰啲步驟囉，咁當中如果發現有乜嘢即係可能唔正確嘅地方，或者可以有矯正，或者再去再去…再去接手囉，可能佢覺得你完全唔得嘅，咁樣會危害到個病人嘅，佢可能即刻停止你，唔俾你去做，由佢哋再接手，即係好似買過保險咁樣，有人睇住你呢，發生咩事呢咁都起碼有人及時制止。	NS01: That means… there has to be a clinical nurse or ward-assigned mentor who would supervise the student in performing nursing care. If some incorrect parts were identified or could be corrected or… took over afterwards, s/he would think that you demonstrate a poor performance, which might cause harm to the patient… then s/he may stop you immediately and take over the procedure. Like purchasing insurance, there is someone there to stop you when something happens.

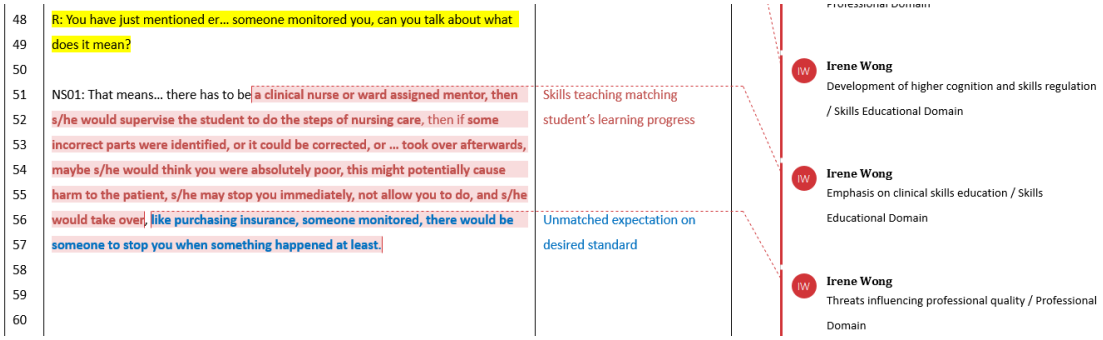
***Second stage*: *Reading and familiarisation*:** I printed out the completed transcripts and read them repeatedly. I then annotated all transcripts by taking memos. I listened to the audio files again if some parts of the text sound unclear or if I wanted to clarify the participants' tone of speech to ensure an accurate interpretation of their responses (Braun & Clarke, 2013). I highlighted the prominent or interesting parts and connected the relevant ideas to the research and interview questions. I rechecked the transcripts repeatedly to capture the central concept that inspired the integration and resynthesis work in this study.

Figure 3: Sample of memoing

47	R: You have just mentioned er… someone monitored you, can you talk about what	
48	does it mean?	
49		
50	NS01: That means… there has to be **a clinical nurse, assigned mentor, then s/he**	Having a clinical nurse
51	**would supervise the student to do the steps of nursing care**, then if **some incorrect**	supervising students'
52	**parts were identified, or it could be corrected, or … took over afterwards, maybe**	performance or taken over if
53	**s/he would think you were absolutely poor, this might potentially cause harm to**	students really in below
54	**the patient, s/he may stop you immediately, not allow you to do, and s/he would**	standard
55	**take over**, like purchasing insurance, someone monitored, there would be someone	
56	to stop you when something happened at least.	

***Third stage*: *Coding*:** I performed coding in two phases. Firstly, I used a pen to annotate the interesting parts of the printed transcripts and wrote down my ideas on a notepad. I clustered these scattered crude data, categorised them into groups and finalised the coding for the subsequent analysis. Secondly, I used the "track changes" and "comment" functions in Microsoft Word for my *initial coding*. This coding process followed an inductive, researcher-centred and iterative approach (Denscombe, 2010).

Figure 4: Sample of initial coding

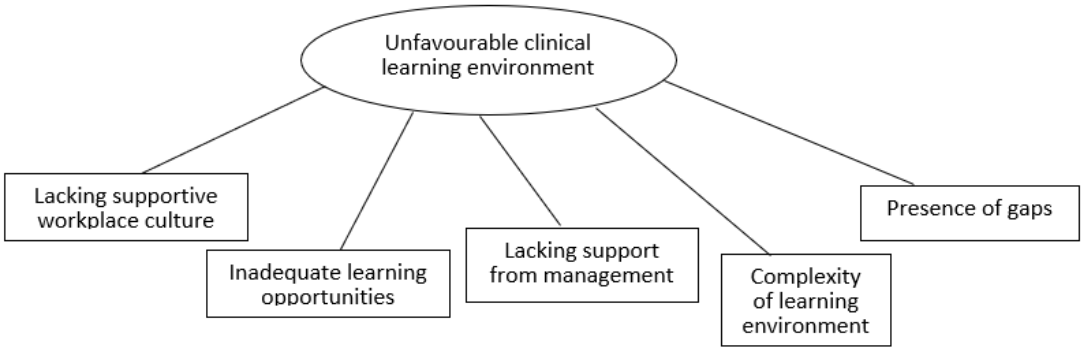


***Fourth stage*: *Searching for themes*:** According to Braun and Clarke (2006, p.82), "A theme captures something important about the data in relation to the research questions at some level of the response or meaning within the data set". I used a computer software programme to revisit and systematically manage the codes and subthemes. After the initial coding, I noticed some codes emerging from special subthemes and themes. Central to the research questions and according to my interpretation, I created *four major domains* for clustering these codes, subthemes and themes, namely, *environmental, personal, skills education* and *profession* (Appendix J). I used Microsoft Excel files with four separate sheets to manage the large amounts of data (Appendix K). I reviewed each extracted data several times to ensure that key themes would not be overlooked. I also ensured that my interpretations were relevant, coherent and appropriate. I searched for patterns from the codes and identified the themes to be generated. I set up several files in the computer, including a summary table for clustering and counting. The code frequency allows me to identify those categories of participants who show special interest in a particular content. Whilst labour intensive, the work performed at this stage facilitated me to call the text out from the file at the later stage and to trace my work more easily whenever needed (Appendix J). This stage also allowed me to investigate a specific content in depth if I found any additional interesting parts.

***Fifth stage*: *Reviewing themes*.** I linked my analysis to the literature, re-read the text for comprehension of the data and reviewed the themes being generated. Braun and Clarke (2013) argued that when determining themes, researchers should examine whether the pattern is "meaningful and important for answering the research question" but "not necessarily be the most common ones" (p.230). Following this principle, I performed this stage iteratively.

***Sixth stage*: *Defining and naming themes*:** I formulated the preliminary themes and made sure that they were highly distinctive and able to illustrate relationships amongst the generated ideas (Figure 5). According to Braun and Clarke (2013, p.231), "good themes need to fit together to form the overall analysis". After performing another round of literature review, I established hierarchical relationships amongst the themes and subthemes and refined their names (Braun & Clarke, 2013). I then generated a thematic map to represent the patterns and relationships amongst these themes and identified the overarching themes.

Figure 5: Sample of thematic map illustrating the relationship amongst themes and subthemes



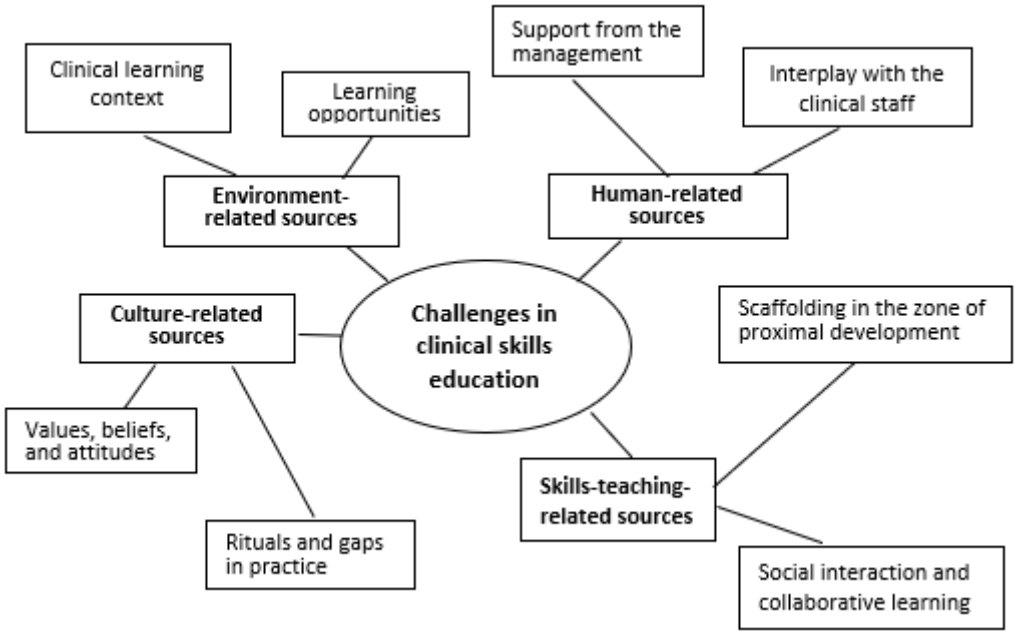
***Seventh stage*: *Writing – finalising analysis*:** At the final stage, I integrated the analysed data from the three methods (interviews, focus group and participant observation), condensed and resynthesized them into four overarching and eight sub-overarching themes (see Figure 19) to illustrate the relevance of my interpretations to the conceptual ideas of the case topic (Braun & Clarke, 2013). Afterwards, I proceeded to write the report. I ensured that the resynthesized overarching and sub-overarching themes cover all the themes and subthemes identified from the three methods and answered all research questions. I connected all parts of my work altogether before writing and editing my manuscript (Woods, 1999; Braun & Clarke, 2013).

Finally, I synthesised the generated themes and subthemes and presented them in a thematic map (Figure 6 & 7).

Figure 6: Sample alignment of themes and subthemes identified from the three methods corresponding to the research questions

Data collection methods	Themes	Subthemes	Response to research questions	Resynthesizing and finalization of overarching themes & sub-overarching themes
Interviews (I)	T1: Unfavourable clinical learning environment	ST1.1: Lacking supportive workplace culture	RQ 1 RQ 2	RQ1&2/T1/ST1.1: Environment-related sources / Clinical learning context
		ST1.2: Inadequate learning opportunities	RQ 1 RQ 2	RQ1&2/T1/ST1.2: Environment-related sources / Learning opportunities
		ST1.3: Lacking support	RQ 1	RQ1&2/T2/ST2.1: Human-

Figure 7: Finalised thematic map illustrating the overall findings of whole study



3.9 Trustworthiness

Guba (1981, cited in McGloin, 2008) argued that researchers should consider adopting a model to assess the trustworthiness for a case study research. The four criteria to be considered include “truth value”, “applicability”, “consistency” and “neutrality” (Guba, 1981, p.80). Accordingly, I employed these criteria to evaluate the trustworthiness of my case study.

3.9.1 Truth value

According to Guba (1981, p.79), *truth value* is a way of establishing confidence in the "truth" (or the "internal validity" or "credibility") of the findings. Using multiple methods of data collection and data sources to examine the same phenomenon can support the aim of getting the *truth* of the case study (Braun & Clarks, 2013; Yin, 2018). I adopted "member checks" (Guba, 1981) to check the credibility and establish the *truth value* of the interviews and focus group data. I invited the participants from interviews and focus group to review the finished transcripts. Four of them accepted the invitation and turned up in person for comment, whereas the others preferred to communicate their opinions over the phone. For example, a clinical nurse participant had clarified the term "ward case mix" which she mentioned during the interview. Given that this term is specific to her working field, asking the participant to elaborate on the term can improve the accuracy of the interpretation. Regarding the data of participant observation, I jotted down the participant observation details on-site, together with my reflection, I entered them into my research diary after each encounter to avoid the memory fade affecting the truth value. Situating on the constructionist stance, having my participant observation nuances and insights to the context, in addition to multiple sources of data, it helps maintain data transparency and enhances the trustworthiness of the case study (Yin, 2018; Stake, 1995; Denscombe, 2010).

3.9.2 Applicability

Guba (1981, p.80) suggests, in the rationalistic paradigm, *applicability* can be referred to as "external validity" or "generalisability", whereas in the naturalistic field, *applicability* refers to "transferability". Thomas (2016, p.3) argues that the nature of a case study is to emphasize "the particular rather than the general. You [researchers] cannot generalize from a case study". Congruent with Thomas, Stake (1995, p.8) also states that a case study focuses on "particularization" and "uniqueness" of a specific situation and critiques it "seems a poor basis for generalisation" (ibid., p.7). To reinforce the representativeness of data, I attempted to enhance the thick description of the whole research process and recorded "concrete" fact and contextual language with "specific details" (Spradley, 1980, p.68) in my participant observation on the interaction with students in the diary notes. For example, I described my participant observation on how the students presented their skills learning problem during some nursing procedures, how I interacted with them and managed the issue finally. I followed Spradley's (1980, p.82) nine dimensions framework in doing participant

observation and kept all information transparent with details in the research diary. I described my analysis work clearly step by step, from outlining my theoretical concept to associating my findings with the research context. This detailed description of the research process favours the applicability for the similar studies in future.

3.9.3 Consistency

Guba (1981) defined *consistency* as a concept that embraces the elements in the research stably. In the rationalistic paradigm, consistency refers to "reliability", whereas in the naturalistic one, this term is synonymous to "dependability" (Guba, 1981, p.81). Braun and Clarks (2013) comment "reliability is not an appropriate criterion for judging qualitative work" (p.279). To enhance the consistency (dependability) of my study, I carried out the data collection and analysis myself to avoid the possible discrepancy arising from different investigators. I also invited a trusted university colleague to review and comment on my work on different stages of my research and this audit trial is believed to enhance the dependability of my data (Guba, 1981; Koch, 1994).

3.9.4 Neutrality

Guba (1981) defines *neutrality* as the trustworthiness of data free from biases from the researchers. In the rationalistic paradigm, neutrality is referred to as "objectivity", whereas in the naturalistic field, this concept is referred to as "confirmability" (p.81). To enhance the confirmability of the data, as mentioned, I used members' check and audit trail to minimise the skew of my interpretation of the data from the interviews and focus group. I bracketed my thoughts and biases about the data whilst making my interpretations and sought the advice of my peers when my personal value and bias may affect the neutrality of this study. Regarding the participant observation, high level involvement (i.e., four months) in the skill laboratory teaching class allows me to acquaint with the context and the "cultural rules for behaviour" (Spradley, 1980, p.60), but at the same time, I also made myself aware of my personal interpretation would affect the quality of the participant observation content (Mack et al., 2005). As such, undergoing "introspection" (Spradley, 1980, p.58) alongside by writing self-reflection in my research diary may help to tackle this dilemma, which is as Nelson (1969, p.394) states, "[researcher] observes others and learns from them, but he [she] learns by observing himself [herself] as well".

3.10 Ethical consideration

I complied with the Code of Ethics and Conduct of the British Psychological Society (2018) and the Guidelines and Procedures for Ethical Review Regarding Human Research of University B (2020). Since I am currently working as a teaching staff in University B and studying as a doctoral student in University of Bristol, I obtained the ethical approval from the Research Ethical Committees of both universities. During the COVID-19 pandemic period, I paid particular attention to the health and safety of the participants during the interviews and focus group and followed health advice and restriction policies issued by the local government and the advice from the Deputy Dean of University B. I protected myself by wearing a mask and keeping appropriate social distance from participants. I interviewed the participants individually in either a large room at the university campus or by visiting them in their households to discourage them from leaving their homes. I also controlled the number of recruited participants to minimise the health risk in the focus group. For the participants in the interviews and focus group, I collected the informed consents from all of them. I assured the participants that their rights were protected, their participation was completely voluntary, and they were free to withdraw from the research at any time. I did not collect excessive amounts of data and had promised the information they shared would only be used for the purpose of this research. The information would be kept safe and destroyed after the thesis had been completed.

Regarding the participant observation, to maintain "non-interference" and "retaining the naturalness of setting" (Denscombe, 2010, p.209), being a complete participant researcher, "they [those being observed] can hardly give 'informed consent'" (ibid.) in the actual lively teaching circumstance. The participant observation data of this study are recorded in my research diary *solely* for my personal interpretation and understanding for the case study. As such, Jorgensen (1989) argues on this justification:

> "*… unlike experimental psychology or medicine, participant observation does not have human subjects. In other words, the people with whom the participant observer interacts are not at all like the subjects of an experiment or even the respondents of survey research*." (Jorgensen, 1989, p.167)

I, however, reminded myself of complying with the ethical principle in qualitative research. I have also protected the ones being observed from harm, including avoiding disclosing any

identities or information from them and always maintained their confidentiality (Jorgensen, 1989; Denscombe, 2010). The research diary is my personal journal. I recorded the encounters in the participant observation and kept it as a means to reflect on my ideas about the research topic.

3.11 Summary

This chapter provides readers a picture of the methodological approach adopted in this study by outlining the researcher's positionality, the theoretical framework, paradigm, philosophical position, ontology, and epistemological stance of this work. This chapter also justifies the selection of qualitative inquiry, the employment of case study methodology as well as the sampling, data collection and analysis on the findings from the three methods. Sample extracts are also attached for illustration. The strategies for maintaining the trustworthiness of the case study are discussed along with the ethical considerations to ensure the quality of the study and to protect the participants. The findings of the case study research will be presented in the following chapter.

Chapter 4: Findings

4.1 Introduction

This chapter presents the findings. As a chapter it follows the suggestion by Thomas (2016), rather than combining in conjunction with an analysis and discussion of the issues. The findings, drawn from three different methods of data collection, emerged from 14 individual interviews, a focus group which consisted of 7 participants, and participant observation for a one-day clinical visit to students at a practicum site in November 2020 and skills laboratory teaching class in the university from September 2020 to December 2020 which are recorded in my research diary. The chapter also presents the findings through charts, tables and mapping and narrative writing. It begins with restating the research questions.

To restate, the research questions are:

RQ1 What are sociocultural sources in the local clinical setting that affect the development of nursing students' clinical nursing skills?

RQ2 How do the existing sociocultural sources in the local clinical setting affect the development of nursing students' clinical nursing skills?

RQ3 To what extent do the cultural elements in the clinical environment influence the cognitive thinking of nursing students through the transformation process into higher level and eventually affect their mastery of clinical nursing skills?

RQ4 How does the social interaction between the nursing students and other professional parties in the clinical environment affect the teaching and learning process of the clinical nursing skills education?

4.2 Demographic information

Data were collected from totally 21 participants (comprising 6 existing nurse teachers, 6 nursing students, 3 advanced practice nurses and 6 frontline clinical nurses), of which, 14 were individually interviewed and 7 participated in a focus group. These participants were aged from 21 years to over 50 years. Two of them were males, both of whom were nursing students. All participants were Chinese and fluent in both English and Chinese.

The non-learner participants had an academic level ranging from diploma to a postgraduate degree, whereas the learner participants (i.e., nursing students) were currently pursuing higher diploma (i.e., pre-enrolled nurse) and undergraduate nursing programmes (i.e., pre-registered nurse). The non-learner participants had a clinical teaching experience ranging from below 5 years (the participants need to have at least 3 years clinical teaching experience) to over 20 years, with four of them having over 20 years working experience which included 3 advanced practice nurses and 1 senior clinical nurse. Given that the nursing students from University B were arranged to work in either public or private settings for their practicum, one clinical nurse working in the private healthcare sector was recruited to ensure the opinions from different sectors were taken into account.

For the learner participants, all six nursing students were recruited from University B, two of which were pursuing sub-degree (Higher Diploma Nursing Studies) and four were in undergraduate degree (Bachelor of Nursing with Honours in General Health Care) programmes from second to fifth years of study. All these students were categorised as pre-qualified nursing students. Meanwhile, the nurse teachers comprised of junior and senior teaching staff with clinical teaching experience ranging from 3 to 10 years. All these teachers had completed postgraduate degrees. The summarised demographic information was presented in Table 2 and Table 3.

4.3 Generation of themes from the three data collection methods

Four overarching themes and eight sub-overarching themes have been finalised through resynthesizing the 9 themes and 26 subthemes generated from the three data collection methods by substantial layering analysis of codes, subthemes, themes (see Table 4 & Table 5). In the following sections, I will present these themes (findings) which emerged from each method. They will align with the proposed research questions which are presented in Table 6.

4.3.1 Findings from the interviews

Total 4 prominent themes and 15 subthemes were generated from the interview data. The 4 themes were: “Unfavourable clinical learning environment” (theme 1), “Factors affecting higher-level clinical skills education” (theme 2), “Barriers affecting the learning process” (theme 3) and “Acquisition through social interaction” (theme 4). Each theme comprised two to five relevant subthemes. Five subthemes with the highest code frequency were summarised

and presented in Figure 8, they included "*Execution of skill teaching strategy*" (subtheme 3.4), "*Lacking motivation in teaching and learning*" (subtheme 2.3), "*Mentorship quality*" (subtheme 3.1), "*Contextual influence*" (subtheme 3.3) and "*Influence from surrounding people*" (subtheme 4.2). The subthemes "*Lacking supportive workplace culture*" (subtheme 1.1) and "*Presence of gaps*" (subtheme 1.5) both yielded the code frequency of over 100, thereby suggesting that these subthemes are considered critical by the interviewees. The code frequency of the findings in interview were manifested in the bar chart in Figure 8 and the themes and subthemes relationship were shown in the Figure 9-12.

Figure 8: Bar chart presentation of the data from individual interviews

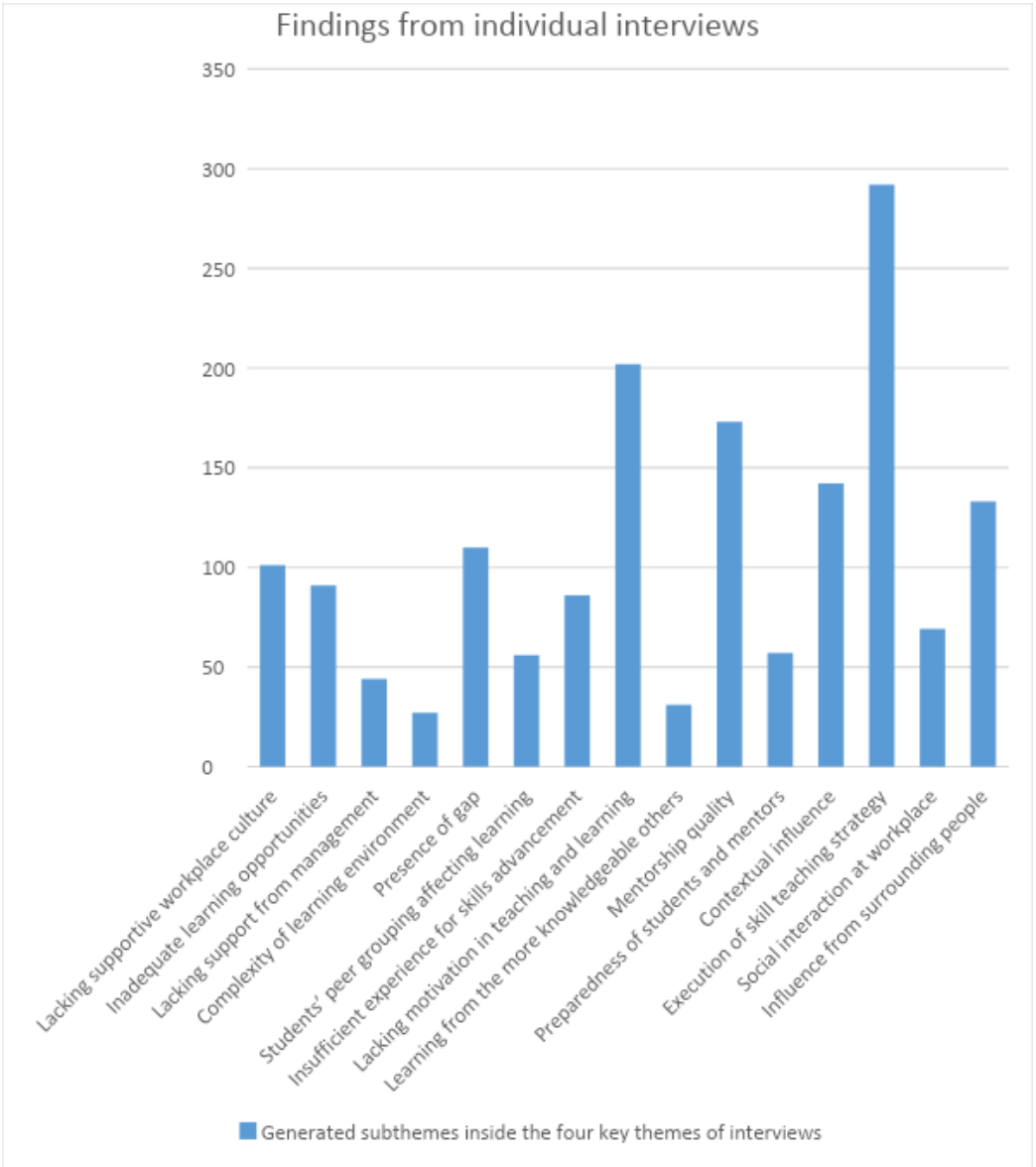


Figure 9: Theme 1: Unfavourable clinical learning environment

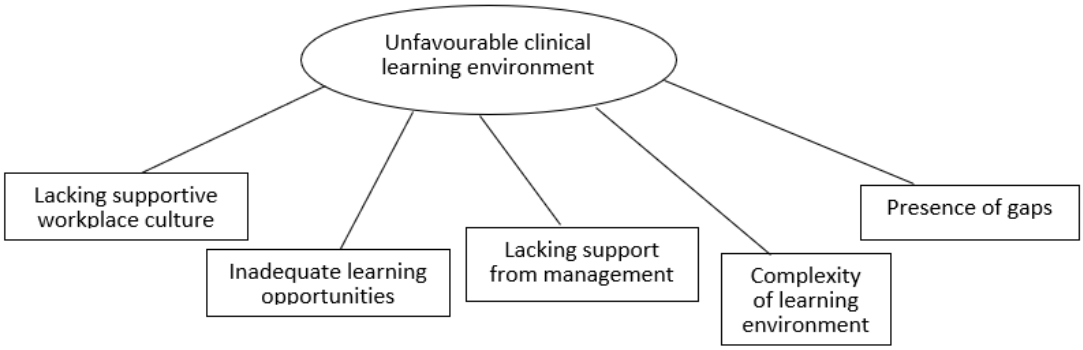


Figure 10: Theme 2: Factors affecting higher-level clinical skills education

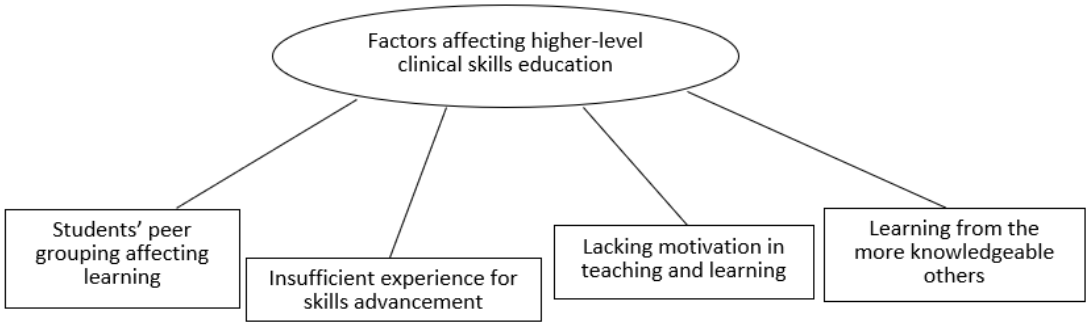


Figure 11: Theme 3: Barriers affecting the learning process

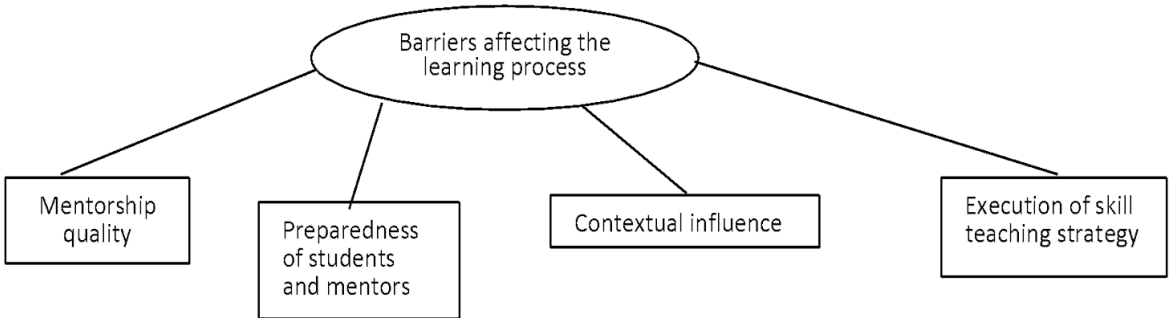
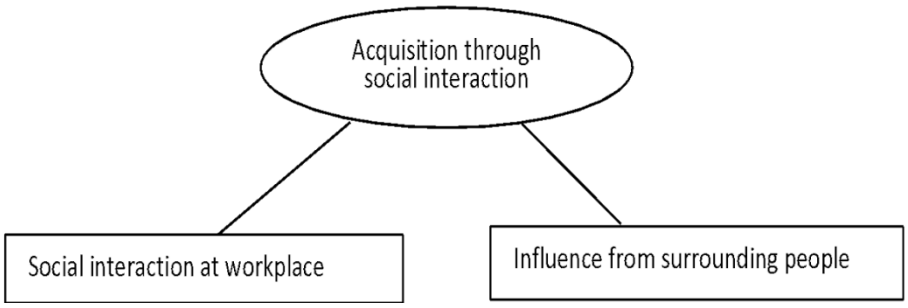


Figure 12: Theme 4: Acquisition through social interaction



4.3.1.1 Five prioritized subthemes from interviews

Based on the code frequency displayed in Figure 8, I illustrated the five prioritized subthemes from the interviews with examples of interviewees' quotes, they were: "*Execution of skill teaching strategy*" (subtheme 3.4); "*Lacking motivation in teaching and learning*" (subtheme 2.3); "*Mentorship quality*" (subtheme 3.1); "*Contextual influence*" (subtheme 3.3) and "*Influence from surrounding people*" (subtheme 4.2).

4.3.1.1.1 Execution of skill teaching strategy

As shown in Figure 8, "Execution of skill teaching strategy" (subtheme 3.4) presented the highest code frequency (cf: 292) comprising 22 relevant codes. The codes came from the interviewee's expression which indicated different teaching strategies that applied in skills practice, including, for example: "adjustment and regulation", "consolidation of skills", "exercising critical thinking" and "guided learning". This subtheme fell under "Barriers affecting the learning process" (theme 3) and was considered as a challenge in clinical skills education irrespective of learners or mentoring staff (clinical nurses, mentors, or nurse teachers). From the data display, nursing students demonstrated the highest amount of concern on this subtheme (code frequency [cf]: 148 over 292) with 50% response involvement, followed by clinical nurses and nurse teachers (cf: 63 and 66 over 292, respectively). Such concern was highlighted by Holla who is a clinical nurse involved in the clinical teaching for many years. She expressed her views on executing the clinical skills teaching with the following quotes:

> "*… They [students] are shocked at first and ask why we [nurses] cleanse the wound using this skill and which is not as they were taught*

> *in school. We'll explain to them why we perform in this way …*"
> (Holla, CN02: Interview, 2020, Lines: 442-444)

Holla used the word "shocked" to refer the students' response when seeing her practice was not the same as the one taught in the skills laboratory. She also mentioned she would "explain" to the students why the theory and practice gap existed and supported the students to adjust and regulate their actions in practice. Likewise, another clinical nurse Rossana who indicated how she employed the skills "guided learning" to mentor the students in ward. She stated:

> *"Many patients have medical problems, yes, so we need to teach the students to read the instruction, and of course to them, for their first time to do it, we'll accompany them to take cases, we will do everything in front of them to let them know these stuffs we need to do, like tell them what we will ask the patients"* (Rossana, CN03: Interview: 2020, Lines: 107-110)

"Accompany them" was the quote used by Rossana which demonstrated how she worked along and guided the students on the way to read the clinical instruction at the clinical place. This subtheme was clustered under the theme "Barriers affecting the learning process" (theme 3). These quotes exemplified how the execution of appropriate teaching strategy could be regarded as an important concern on students' clinical skills learning.

4.3.1.1.2 Lacking motivation in teaching and learning

Another subtheme "Lacking motivation in teaching and learning" (subtheme 2.3) reported the second highest code frequency (cf: 202) and contained 37 relevant codes that could influence one's motivation in teaching and learning. The relevant codes included, for example: "being recognised as a helping hand", "busy engagement", "doubtful self-capability" and "passion towards profession". This subtheme was categorised under "Factors affecting higher-level clinical skills education" (theme 2). Nursing student demonstrated the highest concern for this subtheme (cf: 131 over 202) which 60% response involvement, followed by clinical nurses (cf: 37 over 202) and nurse teachers (cf: 25 over 202). Meanwhile, advanced practice nurses reported the least concern for this subtheme.

Among the interviewees, clinical nurse Rossana stated the students' learning attitude could directly affect the staff nurses' motivation to teach. She shared her perspective on students' motivation towards learning:

> *"… It's not just you (student) 'saying' that you want to learn stuff from wards … You (student) go out [bedside] and watch them (clinical nurses) how to dress the wounds, and that's a completely different thing!"* (Rossana, CN03: Interview, Lines: 368-370)

Rossana expressed her discontentment in the quotes especially about some students' passiveness in learning. She opined students' attitude could affect the mentoring staff's passion to teach in return. Another quote was from a nursing student Haco, who is a highly motivated student, however, his verbalization showed that he seemed not confident enough and appeared doubtful to his self-capability. These factors could affect his learning advancing higher skills:

> "*… no matter what you [student] do, you have a chance to do better than that one failure, because you've already seen the worst, you have nothing to fear, so you will be more willing to try, because you already ... like you already failed once, to put it bluntly, you'll then... I won't be scared to fail another time, I'll just do it without hesitation, because you have to believe that you can do it, you need to be confident, then you can face whatever challenges that may come up later …*" (Haco, NS04: Interview, 2020, Lines: 963-969)

This subtheme was categorized under the theme "Factors affecting higher-level clinical skills education" (theme 2). The above quotes from Rossana and Haco manifested both the learners and mentors (i.e., clinical nurses) require motivation in the teaching and learning process for developing effective skill education.

4.3.1.1.3 Mentorship quality

"Mentorship quality" (subtheme 3.1) received the third-highest code frequency (cf: 173) and comprised 49 relevant codes that reflect multiple determinants could influence overall mentorship quality when the mentoring is conducted by clinical nurses, designated mentors, or nurse teachers. The relevant codes included, for example: "additional workload", "building up trust with clinical staff", "inadequate staffing" and "preparedness of mentors". This subtheme was categorised under "Barriers affecting the learning process" (theme 3). Amongst the interviewees, clinical nurses reported the highest amount of concern for this

subtheme (cf: 57 over 173), followed by nurse teachers (cf: 48 over 173) and then by nursing students and advanced practice nurses (cf: 34 over 173).

Fanny, a nurse teacher, made the reference to the "ward busyness" and regarded mentoring as "additional workload", she stated, "…. If there is too busy and inadequate staffing, it is difficult to carry out effective clinical education …" (Fanny Lo, NT04: Interview, 2020, Lines: 478-479). Busy engagement is a main concern in Fanny. On the other hand, student Cathy related the factor to the functionality of the mentor, and she criticized, "actually we (students) don't follow [be guided by] mentors while working, it's like this for every ward I went to, because the mentor is simply here to help you 'press buttons'…." (Cathy, NS03: Interview, Lines: 175-177). Cathy's quote "press button" referred to the "staff's permission for practice". It somehow reflected the trustful relationship between the teachers and students. The mentorship quality is also related to the preparedness of mentors that involving their "mentality and skills competency" in clinical teaching. Annie, from the nurse teacher's perspective and shared her views:

> "*… Once I [nurse teacher] was responsible for a bunch of students at ward to prepare their AOM (Administration of Medication) examination, I stood aside and tried to ask students' terminologies of drugs and to monitor their learning progress. There were staff came over and reflected that the students weren't quite available at that time. The staff commented that the students weren't too ambitious when it came to learning, they also criticized some students were quite 'lazy' and 'weren't quick on their feet*…'" (Annie Long, NT01: Interview, 2020, Lines: 239-244)

From Annie's quotes, it showed that certain clinical staff might not be well prepared to be the mentor's role and containing some misunderstandings on students, such as commenting students as "lazy" and "too ambitious" for assessment when they were not working the ward routines. This subtheme was categorized under the theme 3 and was regarded as one of the barriers affecting the learning process.

4.3.1.1.4 Contextual influence

"Contextual influence" (subtheme 3.3) reported the fourth-highest code frequency (cf: 142) with 33 relevant codes that reflected the contextual factors that could affect clinical skills education. This subtheme also was categorized under the theme 3 "Barriers affecting the

learning process". The relevant codes included, for example: "conducive environment", "lacking learning opportunities", "limitation of time" and "unsupportive clinical staff". From the data display, clinical nurses and nursing students, both are frontline practitioners in the education process, have demonstrated greatest concern for this subtheme (cf: 48 and 47 over 142, respectively), whereas nurse teachers and advanced practice nurses reported the least concern (cf: 36 and 11 over 142, respectively). The following quotes from nursing student, nurse teacher and clinical nurse highlighted the concerns for this subtheme. Kate, a nursing student, described how an unwelcome atmosphere she experienced in her previous placement affected her learning:

> "*… and perhaps from their [clinical nurses] point of views, student was not… didn't have a license, a student without license, lacking experience and technique, then most of the time, they [clinical nurses] would think that you [student] were annoying them, they would ask you only observe at the side,… not to come closer, they were … actually so afraid that student would take part in …*." (Kate, NS01: Interview, 2020, Line: 25-30)

Kate reckoned the unsupportiveness of clinical support might be related to her "without license and unqualified status". She used the term "annoying" to illustrate this unsatisfactory relationship and described how she was refused to get close or participate in the practice. Nurse teacher Fanny, however, pointed out another reason for limiting learning opportunities which related to the nature of the specialty (clinical unit) of the hospital:

> "*Actually for acute hospitals, what I've learnt is that, it's like what I've mentioned just now. Because there are different types, so things in different categories will be involved, such as helping a person do a lumbar puncture, or preparing a patient for operation, these are things we will be involved in …*" (Fanny Lo, NT04: Interview, 2020, Lines: 57-60).

Besides, due to the limitation of staff and time (contextual factors), clinical nurse Rossana (working in hospital operating theatre) also brought up the dilemma of having sufficient staff to be the mentoring personnel for guiding the nursing students, "… there weren't a lot of staff, not to say anything, but you only have 3 people…, 3 people to run a theatre, do you seriously want us to die?!" (Rossana, CN03: Interview, 2020, Lines: 455-457). Rossana used the quote "want us to die" to describe the tension of tight manpower. Similarly, Chai Ho, the APN, also referred to the time issue was a critical barrier, she stated,

> "… *there are many things that we want to teach, but there may not be sufficient time to cover what you want to teach, don't know whether it is due to the time… maybe say… we wish to say 100 but turns out we can only mention 50 …*." (Chai Ho, APN02: Interview, 2020, Lines: 330-331)

From the quotes of Kate, Fanny, Rossana and Chai Ho, it outlines the contextual influence could be an important item causing the barriers to learning.

4.3.1.1.5 Influence from surrounding people

"Influence from surrounding people" (subtheme 4.2) received the fifth-highest code frequency (cf: 133) and contained 36 relevant codes including, for example: "acquire positive outcome from interaction", "communication skills", "interest in the specialty", "nursing mission" and "professional development". This subtheme was clustered theme 4 "acquisition through social interaction". Nursing students expressed the highest concern for this subtheme (cf: 42 over 133), which was three times higher than the code frequency reported by advanced practice nurses (cf: 15 over 133). "Surrounding people" here refers to the clinical staff, peers, specialists from other paramedical disciplines or patients in the learning place, whose influences on skills education can either be positive or negative.

The quotes from nursing student Harry described how the patients' reaction affecting students' skills learning at clinical place, "… there are really some patients that reductant and unreasonable, they knew the difference of student uniform and staff uniform. They knew that. They could tell that." (Harry, NS02: Interview, 2020, Lines: 331-334). Harry mentioned "patients", as one of "important surrounding people" in ward and the recipient of the nursing care, their cooperation or refusal would affect substantially on the students' confidence and their practice opportunities. Besides, clinical nurse as another key "surrounding people" exerting the influence on students. Their endeavor and professional presentation would also influence the students' values and assumptions in clinical learning. Holla, from her role as a clinical nurse, addressed how the existing clinical learning activities presenting its useful function in clinical education to nurse learners:

> "… *there are some education talks last around an hour or half an hour for the junior nurses held at clinical place regularly, they'll ask the nursing students coming back to the ward earlier to attend the talk*

and listen to them [clinical nurses]…" (Holla, CN02: Interview, 2020, Lines: 471-474)

While having positive communication and interaction, students could be learnt about the behaviour from the clinical staff, therefore they are regarded as significant surrounding people influencing students' learning. Besides the interview, the findings from the focus group also provide us significant insights.

4.3.2 Findings from the focus group

Seven participants from the focus group expressed their views in the discussion and card activity session. Three themes and seven subthemes were generated from the discussion session.

4.3.2.1 Findings from discussion session of the focus group

The three themes generated from the discussion session of the focus group were, namely: "Human-related challenges" (theme 1), "Teaching-strategy-related challenges" (theme 2), and "Environment-related challenges" (theme 3). A total of seven subthemes were identified from these three themes. The code frequency of the findings in focus group were manifested in the bar chart in Figure 13 and the themes and subthemes relationship were shown in Figure 14-16.

Figure 13: Bar chart presentation of the data from focus group

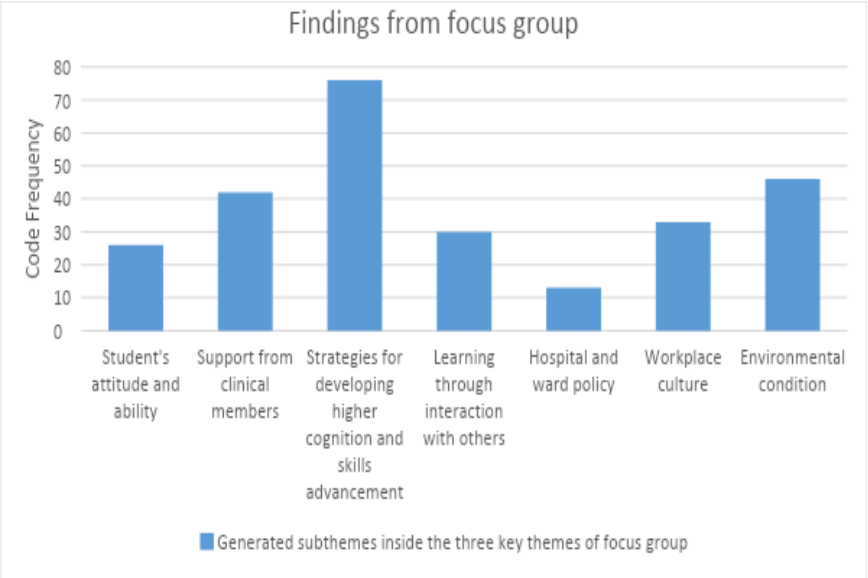


Figure 14: Theme 1: Human-related challenges

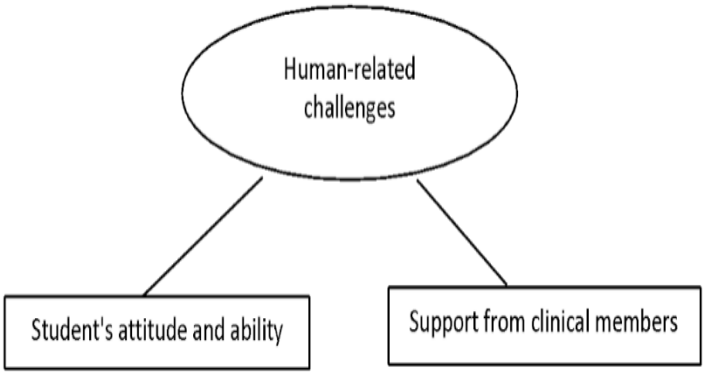


Figure 15: Theme 2: Teaching-strategy-related challenges

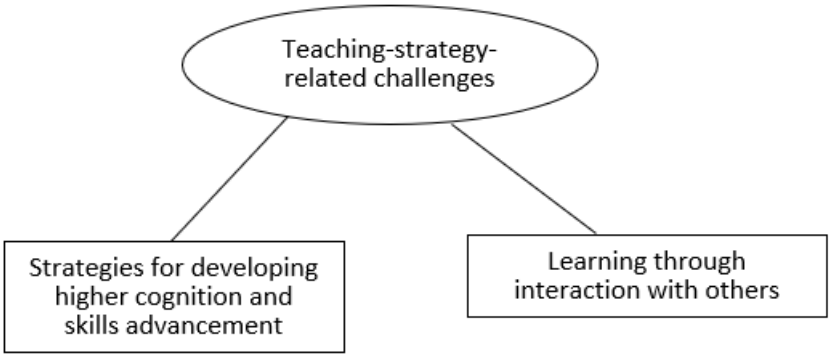


Figure 16: Theme 3: Environment-related challenges

4.3.2.1.1 Four prioritized subthemes from discussion session

In Figure 13, it demonstrated four subthemes with the highest code frequency, namely: "*Strategies for developing higher cognition and skills advancement*" (subtheme 2.1), "*Environmental condition*" (subtheme 3.3), "*Support from clinical members*" (subtheme 1.2) and "*Workplace culture*" (subtheme 3.2). They were illustrated with interviewees' quotes as below.

4.3.2.1.1.1 Strategies for developing higher cognition and skills advancement

Based on the code frequency displayed in the bar chart Figure 8, "Strategies for developing higher cognition and skills advancement" (subtheme 2.1) received the highest code frequency (cf: 79) with 20 relevant codes including, for example: "adaptation period", "develop students' competency progressively", "internalization" and "reinforcement of knowledge". Nurse teachers was the category reported the highest concern for this subtheme (cf: 41 over 76) with more than 50% response involvement, followed by nursing students (cf: 15 over 76). This subtheme was categorized under theme 2 "Teaching-strategy-related challenges". The following quotes from nurse teachers and students expressed their concerns.

Yun, nurse teacher, expressed that recognizing students' special attributes would influence her teaching arrangement and develop their competency, "… our [teacher's] approach is important, like actually we can quickly differentiate who [students] are the inattentive ones, and who are eager to learn, who are not, we try our best to distribute the work …" (Yun, Y: Focus Group Part I, 2020, Lines: 417- 420). Yun's pre-assessment favoured her to differentiate students' special needs and designed more suitable activities to facilitate students' skills advancement. Another nurse teacher Lang stressed that the beliefs of the ward staff towards skills education was critical, she stated:

> *"…how much the ward staff puts an emphasis on education, is quite influential, because if from the management level to the HCA (health care assistant), all of them think that students, or duck tours [teacher-guided mentoring] doing practicum is helping the ward lessen their burden, then this is actually irrelevant to education, …"* (Lang, L: Focus Group Part I, 2020, Lines: 445-449)

Lang brought out different levels of clinical staff would exert their influence on students. Kitty, from a student's perspective, expressed the importance of the senior year students' accompaniment in skills learning at the clinical place:

> "… *When you're with an older, senior year student and whether he's willing to guide you or not, you can ask him something. I think that it'll be more comfortable and beneficial* …" (Kitty, K: Focus Group Part I, 2020, Lines: 718-720)

From Kitty's quotes, it brought out peer companion favoured their information sharing and knowledge exchange, "accompaniment" makes Kitty feel secure and comfortable.

4.3.2.1.1.2 Environmental condition

"Environmental condition" (subtheme 3.3) was the subtheme in the focus group interview carrying the second-highest code frequency (cf: 46) with 35 relevant codes presented, which included, for example: "busy environment", "critical care setting", "focusing on basic routine skills" and "less hands-on practice". In contrast to previous subtheme, clinical nurses was the category showed the greatest concern (cf: 22 over 46) with over 50% response involvement in the discussion session, followed by nurse teachers (cf: 16 over 46). This subtheme was categorized under theme 3 "Environment-related challenges". Nurse teacher Yun highlighted the exposure of adequate clinical learning opportunities especially the hands-on practice in the environment was important. Yun stated:

> "… *it all depends on whether the students in the ward can really practice those skills, actually the student might not have learnt it before, like that, if they [students] really went to do some containing significant features in the specialty places, then perhaps like ortho (orthopaedic), they might be year 1 or year 2, and actually they…haven't come across much, so towards their learning, they won't have a knowledge base for learning, then this is kind of difficult* …" (Yun, Y: Focus Group Part I, 2020, Lines: 22-24)

Apart from clinical exposure provided from the environment of the usual wards, nursing student Apple shared her part-time intern's (TUNS) experience in different settings which earned her exposure and remarked as its significant effect on skills advancement.

> "*Apart from going to placements, I also take part in TUNS (Temporary University Nursing Students) … they've (senior students) experienced this before. They'll tell you to try it [skills practice] also, so you can be more efficient and learn faster*." (Apple, A: Focus Group Part I, 2020, Lines: 623-633)

Hanny, the clinical nurse, emphasized the critical care setting in the clinical environment supported more opportunities for the students' skills learning. She raised an example on teaching students advanced skills, "…set up the ventilators, teach them (students) to read the readings, normal or not in respiratory unit and they learnt…" (Hanny, H: Focus Group Part II, Lines: 314-316). Given the above quotes, it showed the nature of the clinical settings and its relationship to skills building.

4.3.2.1.1.3 Support from clinical members

The subtheme carrying the third-highest code frequency (cf: 42) in focus group interview was "Support from clinical members" (subtheme 1.2), which received with 22 relevant codes. They included, for example: "assuming teaching is not one's own initial duty", "busy engagement", "initiative of learners" and "passionate in mentoring". Like the second sub-theme, clinical nurses acted as the most concerned category for this subtheme (cf: 17 over 42), followed by nursing students (cf: 13 over 42). This subtheme was categorized under theme 1 "Human-related challenges". In terms of human-related factors, Suet, clinical nurse, expressed the passion of working staff in the context could affect nursing students' learning. She stated:

> "*… at the beginning we [clinical nurses] will ask them [students] what they want to learn first, we'll just try our best, even there would only be opportunities 5 out of 10 times …*" (Suet, S: Focus Group Part I, 2020, Lines: 579-582)

The interaction with clinical staff is an important human factor in students' learning. Nursing student Kitty recalled how she grasped the skills for patient's assessment when doing an admission procedure by observing the performance of the clinical staff:

> "*… I notice that when they [clinical nurses] need to fill in a patient assessment form, they'll divide it into several systems when asking you [patient], and then I discovered after listing all the questions, they are*

> *actually quite easy to answer* …" (Kitty, K, nursing student: Focus Group Part II, 2020, Lines: 173-175)

Apart from clinical nurses, Elsie, an APN, has been an experienced clinical mentor for a long time. She offered a piece of useful tip for students' learning, "… I don't know if you guys [students] still write diaries and do reflective learning, but I think doing so will bring about internalization for learning …" (Elsie, E, APN: Focus Group Part II, 2020, Lines: 195-196). Elsie's life skills are meaningful to support students. Contrarily, Kitty shared an unpleasant experience in the clinical place commented it could affect her passion in learning:

> "*I heard the pantry staff [clinical nurses] talking to each other, like gossiping…commenting on some staff not doing well enough, but it seems like they were talking about them on and on…This type of ward culture makes me very sick* …" (Kitty, K: Focus Group Part II, 2020, Lines: 370-375).

From Kitty's quotes on the attitude of clinical staff, it illustrates the unhealthy and toxic climate in the clinical environment might influence the students learning.

4.3.2.1.1.4 Workplace culture

"Workplace culture" (subtheme 3.2) was the subtheme received the fourth-highest code frequency (cf: 33) in the discussion, which included 12 relevant codes, for example: "unsupportive workplace culture", "ward nature", "learning climate" and "distrust between students and nurses". Nurse teachers was the category demonstrated the greatest concern on this subtheme (cf: 18 over 33), followed by nursing students (cf: 8 over 33). This subtheme was categorized under the theme 3 "Environment-related challenges". Nursing student Kitty correlated workplace culture with her communication in clinical place and from her quotes, it expressed how she was influenced by the culture inside:

> "*… this ward's culture is a lot about "blaming", and comparing with one another, then I'll tell myself to stay sharp, or yes, I'll choose some people who aren't within that core, like communicate more with them instead*." (Kitty, K: Focus Group Part II, 2020, Lines: 382-385)

Kitty described the blaming culture at the clinical area influenced her interaction and communication with others. In this regard, nurse teacher Lang gave two contrasting examples

which showing its closely relationship on students' learning and workplace culture. First, was an example with less learning atmosphere:

> "*… if the ward (clinical staff) is less willing to teach students, perhaps they'll think you being here aren't doing anything anyway, like being in the team, thinking that you as a student don't need to know this… But students might expect, perhaps their learning goals aren't like this, this becomes whether the student can gain satisfaction here, the sense of fulfillment will be lowered, so actually on this juncture it will affect their heart to continue learning …*" (Lang, L: Focus Group Part II, 2020, Lines: 429-435)

From above quotes, it illustrates the mismatched expectation between both parties (clinical staff and students). On the other hand, Lang also shared another example on how a positive workplace culture would boost the students' learning:

> "*… I've worked in, actually in a better culture, a ward with good learning culture, it's happier there, actually it'll stimulate students to ask more questions, or students will think more when they go back and search, want to go deeper, this will improve the entire learning process …*" (Lang, L: Focus Group Part II, 2020, 2020, Lines: 441-444)

Kitty and Lang's quotes demonstrated how the workplace culture could affect nursing students working inside and influence students' passion to learn in the environment.

4.3.2.2 Findings from the card activity session

Card activity session was the activity embed inside the focus group meeting. In response to Question 1 listed in the card during the activity, it required the participants prioritising the most influential factor affecting nursing students' clinical education. Both nurse teachers (Yun & Lang), one nursing student (Kitty), two clinical nurses (Suet & Hanny) and one advanced practice nurse (Elsie) prioritized "students' attitude to learning" as the most influential factor while only one nursing student (Apple) placed the "hospital / ward policy and mentorship" as the factor influenced the most. However, when inviting participants' free views of Question 2 on the problems in the sociocultural aspect affecting the students' clinical skills development, their responses were varied. They included: "blaming culture" (Apple, nursing student), "blaming culture and supportiveness of the clinical environment to teaching" (Kitty, nursing student), "ward culture & hospital policy" (Hanny, clinical nurse),

"passive learners" (Suet, clinical nurse), "learning culture and supportiveness from ward staff" (Lang, nurse teacher), "busy ward environment and hospital policy" (Yun, nurse teacher) and "prejudice, lack of confidence, passive, cooperativeness from students" (Elsie, advanced practice nurse). Incorporated findings from the discussion session and card activity session in the focus group, it supported multiple factors in relation to the workplace culture and conditions are substantially associated with the clinical nursing education.

4.3.3 Findings from participant observation

Two themes and four sub-themes emerged from the participant observation data of the clinical visit in November 2020. These themes were integrated with the ones from interviews and focus group data and finally resynthesized into 4 overarching themes and 8 sub-overarching themes to develop an overview of the case topic (Figure 15). Another 3 themes generated from the participant observation data in the 3-month skills laboratory teaching between September and December 2020 established the focus on understanding students' skills education process especially through the lens from Vygotsky's SCT (1978).

4.3.3.1 Participant observation in clinical visit

Participant observation drawn on Spradley's (1980, p.78) framework utilised six out of nine dimensions, namely *actor, activity, event, feeling* in addition to the *place* and *time* have focused and described. The generated themes and subthemes are illustrated as below (see Figure 17 & 18).

Figure 17: Theme 1: Barriers in learning

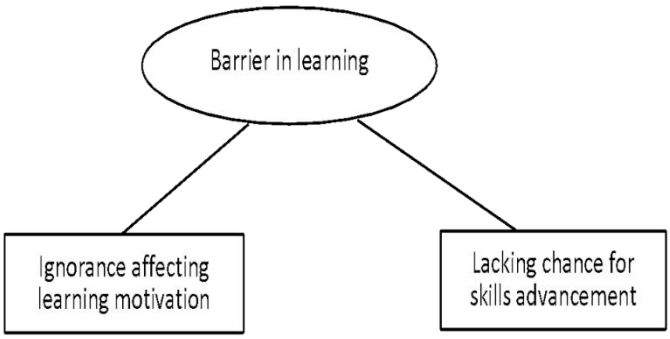
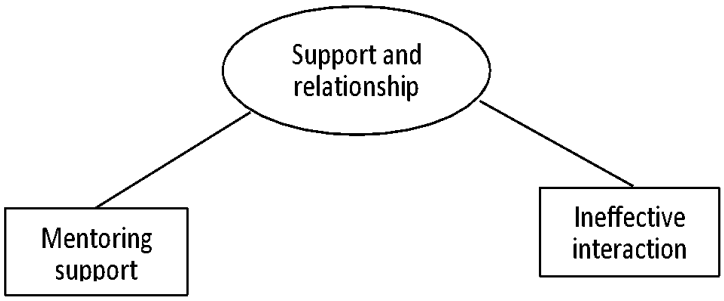


Figure 18: Theme 2: Support and relationship



Theme 1: Barriers in learning:

Theme 1 "Barriers in learning" comprises of two subthemes: "Ignorance affecting learning motivation" (subtheme 1.1) and "Lacking chance for skills advancement" (subtheme 1.2). My research diary reads:

Subtheme 1.1 - Ignorance affecting learning motivation:

> *… I visited a total of five wards (ward S, ward P, ward R, ward T, ward Q) in Hospital C. I carried out causal talks with students there, hoping to obtain more ideas of their clinical learning. I hoped this simple visit would be good for me to understand more about the sociocultural influences of clinical learning environment … I first went up to ward S, I met Yin (pseudonym), a student in higher diploma under the pre-EN programme. In a short causal conversation, she shared to me some of the 'unfair approaches' she experienced in ward due to the different treatments adopted by the ward staff towards the students from different programmes and training schools.*
>
> *The institutions she mentioned were the ones offering the pre-RN programmes. She said she felt 'ignorance' because she felt the clinical staff placed more concern on those pre-RN students than those in the pre-EN ones (including her). She told me some ignorant encounters and that seemed very personal, but that was exactly what she felt at the time. I passionately believe that the learning environment and their interaction with others are linked, and they would affect the students much, maybe on the learning interest, or motivation, or even their confidence in learning. I therefore ask myself: Do I really understand what Yin claimed about "ignorance"? Why does it happen?* (Research Diary, [redacted] November 2020, Ward S).

In my research diary, it recorded the student Yin's frustration. During our short meet, Yin mentioned some unfair arrangement in the learning opportunities, and she believed her pre-EN status could be one of the reasons for it. This ignorance and unpleasant encounters apparently undermine Yin's confidence and motivation to learn in an extent.

Subtheme 1.2 - Lacking chance for skills advancement:

> *I went to meet Ting (pseudonym) at ward Q according to the student's list given by my colleague Q. I talked with Ting at a ward corner… Ting shared to me that she always engaged in lots of basic ward routines such as taking off nasogastric tubes, giving bedpan, administering fleet enema, and taking vital signs etc. She voiced out she felt lacking opportunities to practise other skills…*
>
> *Only a while of our dialogue, I noticed Ting was often interrupted and running back and forth to answer the patient's call. It does not mean practising routine work could not provide knowledge or skills practice but, students are supposed to be exposed to more different challenges to promote growth. I went to a registered nurse and talked about students' learning, for example, any practice in the aseptic procedures? She told me that in private hospital, some doctors would like to perform the wound dressing themselves because they liked to inspect the wound condition at the spot. Does this practice to a certain extent limit students' skills practice opportunities?*
>
> *I have learnt the view about "insufficient learning opportunities" from participants in the interviews and focus group months ago. I assume I could understand the point. Is it the case? I remember whatever I was the on-site clinical teacher in the conventional nursing school in 1990s or today's university, lacking variety of procedures for practice is always the problem to teachers for advancing students towards "experiential learning"… While clinical practicum is not the skills laboratory, offering opportunities for suitable practice is crucial to skills learning*. (Research Diary, [redacted] November 2020, Ward Q)

I recorded my reflection on Ting's issue in my research diary in which it related to the appropriateness of the learning tasks in their skills practice. Ting's sharing highlights a critical barrier for skills learning in clinical environment.

Theme 2: Support and relationship:

Theme 2 "Support and relationship" comprises of two subthemes: "Mentoring support" (subtheme 2.1) and "Ineffective interaction" (subtheme 2.2). My research diary reads:

Subtheme 2.1 - Mentoring support:

> *…When I entered ward P, another practicum ward, the ward atmosphere to me appears somewhat monotonous, everyone in the nursing station seemed busy, engaging in their tasks at hand. I met Sam (pseudonym). She was another higher diploma nursing student. She told me similar feeling as what Yin (the student in ward S) just shared, saying sometimes she felt being neglected. She also claimed that she found insufficient mentoring support was sought and that seemed influenced her motivation to learn...*
>
> *"Motivation to learn"? I wanted to hear more about her saying on this point, and why this neglect will have the linkage with student's learning. Further, what does she mean 'insufficient' mentoring support, saying the quality, or quantity?*
>
> *I inadvertently picked up a case and invited Sam to present a short piece of notes to me. I [suppose] she can do it well as being a second year EN student. However, Sam seemed got struck in many areas. Many clinical terminologies and concepts being presented were apparently unclear or even incorrect. Sam referred the reasons for no one deliberately taught her about clinical terminologies and most of the time, she went on her own. After Sam's sharing, I think: Could this student have learnt from her mentor?* (Research Diary, ■ November 2020, Ward P)

I developed the theme "Support and relationship" and categorized this subtheme "Mentoring support" into it. Mentors here refer to the higher abled people, they could be the clinical staff in the context. Student Sam raised the concern on the importance of adequacy of on-site support and mentoring, which markedly is related to students' learning progress.

Subtheme 2.2 - Ineffective interaction

> *Likewise, Kan (pseudonym) in ward R told me that sometimes she felt like a 'nobody' in the ward and that feeling of lacking interaction seemed affecting her 'mood' to learn. Kan told me that she wanted to be 'part of their (clinical nurses) team'… What does she mean 'part of their team'? It makes me think of it more...*
>
> *People are always looking for their identity in the community, hoping to squeeze into one of the groups. In students' eyes, it could be through the interest groups, students' union, alumni, but it seems difficult to enter into the ward staff teams. They (students) are*

> *assigned to the practicum for only a short period of time whereas they are not the people of the working place, how can they get into their teams? Students show eagerness to belong to that hub (ward), get into their (clinical staff's) zone, become one of the members in the team and understand their (clinical staff's) language and practice, however, things may not happen easily as expected. That was why Kan was unhappy. That could imagine when the students are having their practicum in the clinical place for weeks, feeling lonely and lacking interaction with people, it could be very difficult to pass a day, and it would affect his/her mood to learn?...*
>
> *Students always told me they are lacking interaction with ward staff regardless of the programmes, in their terms: working together but lacking interaction. I heard this grumble for many years. I reckon what the problem has happened inside. From Kan's sharing, maybe it could give me some ideas …* (Research Diary, [redacted] November 2020, Ward R)

I noticed students stressing the effective interaction with clinical staff, and this factor becomes significant in their learning. Students carrying a temporary trainee's role at ward may come across various difficulties and loneliness in that unfamiliar environment. From which, my participant observation brings me insights on knowing the sociocultural factors and its influence.

4.3.3.2 Participant observation in skills laboratory teaching

Participant observation in clinical skills laboratory teaching (except three sessions were delivered online) recorded some major teaching encounters during my skills laboratory class from September 2020 to December 2020. They relate some important theoretical ideas I learnt from Vygotsky's SCT (1978). Three reflective themes had been generated, they were: 1) The cultural tool; 2) Peer learning; and 3) Guidance and internalization. I recorded my participant observation in my research diary. My research diary reads:

Theme 1: The cultural tool

> *Today's class was ordinary. "Suctioning" is the topic I have taught many times. However, students always grasped this skill poorly, especially in the beginning. Today Peter's (pseudonym) response may give me some insight. I recall when I was in the demo lesson teaching the whole class students setting up a wall-mounted suction apparatus. I kept on demonstrating the procedure using some technical terminologies (jargon) without noticing the students' elementary*

> *knowledge background, until Peter shouted out from the group, asked me what the suction force was. Peter puzzled whether the apparatus I referred was using the concept of a straw sucking up the soda. This encounter made me reflect the importance of assessing the students' pre-requisite knowledge and level, and the appropriateness of the teaching language being used. Is it as what Vygotsky's mentioned, the suitable cultural tool? In skills teaching, I (teacher) often posit in the dominate place, deciding what to say, what to do. Do we also consider substantially from the side of students for the best way in learning?* (Research Diary, [redacted]/12/2020, Skills Laboratory Class)

The above extract of my research diary on my participant observation in skills laboratory revealed the importance of using appropriate cultural tools – teaching language in instructing or coaching skills practice. These cultural tools include the use of language or teaching material (or equipment in nursing field) and they are regarded as important artefacts and affect the effectiveness of teaching and learning according to Vygotsky's SCT (1978).

Theme 2: Peer learning

> *Today, the teaching topic was related to patient's positioning. I aimed at students could be able to grasp the skills of patient's turning in correct technique after the lesson, within their capability, and did it well. I recall a scene in the demonstration lesson that a nursing student Candy (pseudonym) tried many times to pull the manikin body trunk backwards towards her side, but unsatisfactorily. She was clumsy to move the 'patient' body for a central alignment but seemed insufficient strength to do it. I reckon whether I should give her more hints or even to give the student a hand to accomplish the task. However, an idea that flashed through my mind that was Vygotsky's theoretical ideas that suggests learners may benefit more from learning between each other through the collaboration and communication. Learners can perform exploration on their own and this may empower them to go further. It might be even better than the teacher's (me) "intervention". Therefore, I held up myself, waited. I discovered soon later another nursing student Mabel (pseudonym) came up to help. They gathered and discussed, at the end they came up a decision to do it and the problem had eventually been resolved. I wondered, if I give the help earlier, will the learning condition be changed?*

> *In the laboratory teaching, it will always easily find students can be influenced considerably by their peers in the learning context. They exchange ideas and co-construct knowledge and skills by working together. For this, peer learners in the learning context have always*

> *been playing a significant role*. (Research Diary, [redacted]/10/2020, Skills Laboratory Class)

The extract from my participant observation recorded how the students learnt through their peers, and their active collaborative work in a nursing procedure (i.e., patient positioning) apparently encouraged more intellectual input than working alone. My research diary also recorded my conflicts and struggles in approaching students' skills learning in the context and the reflection afterwards.

Theme 3: Guidance and internalization

> *I recount today's skills laboratory session. I asked nursing students Amy (pseudonym) to demonstrate priming up a nasogastric tube for milk feeding. She encountered a slight inconvenience in the process. Despite Amy's effort, the issue was not going smooth, one end of the tubing tip nearly dropped to the ground, seeing that, I came up to catch it. At that moment, I had an impulse to blame on Amy's messy action and criticise her carelessness. However, several thoughts came to my mind at that moment. They were: first, if I make a negative comment on Amy's performance publicly, it might undermine her confidence and demotivate her learning interest. Second, if I grasp this chance to teach Amy and allow her to correct the skills herself, she might go through the self-discovery process and that could strengthen her confidence and provide a chance for her to rethink and internalise the knowledge and skills herself in practical application. Third, Amy's "unsuccessful incident" could lend us an "example" allowing me to teach in front of the class, it could be a "win-win" option, benefit to Amy's and whole class's learning.*
>
> *Therefore, finally, I decided to make use of this chance to teach the entire group about the concept of "contamination". I required Amy (who stood by my side) to re-demonstrate the proper way of grabbing tubing. I assisted her action by holding her hands and guiding the steps along. I hoped through this learning, she could really get the knowledge and internalise the skills for herself* (Research Diary, [redacted]/10/2020, Skills Laboratory Class)

The above extract recorded my complex thoughts in the participant observation during class. I recorded my decision making in my head at that time and how to make use of the principle of Vygotsky's idea (1978) about the MKO (me) and promoted students' internalization of skills learning at the end.

4.4 Resynthesised overarching and sub-overarching themes

Four overarching themes, namely, “Environment-related sources”, “Human-related sources”, “Culture-related sources” and “Skills-teaching-related sources” are resynthesized from the data of the three collection methods. They are underpinned by eight sub-overarching themes which are illustrated by (Table 6). A thematic map based on the incorporated findings is developed in the Figure 19.

Table 4: Re-synthesising work in the development of overarching and sub-overarching themes from three data collection methods

Data collection methods	**Themes**	**Subthemes**	**Response to research questions**	**Resynthesised and finalised overarching and sub-overarching themes**
Interviews (I)	T1: Unfavourable clinical learning environment	ST1.1: Lacking supportive workplace culture	RQ 1 RQ 2	RQ1&2/T1/ST1.1: Environment-related sources / Clinical learning context
		ST1.2: Inadequate learning opportunities	RQ 1 RQ 2	RQ1&2/T1/ST1.2: Environment-related sources / Learning opportunities
		ST1.3: Lacking support from management	RQ 1 RQ 2	RQ1&2/T2/ST2.1: Human-related sources / Support from the management
		ST1.4: Complexity of learning environment	RQ 1 RQ 2 RQ 4	RQ1&2/T1/ST1.1: Environment-related sources / Clinical learning context RQ4/T2/ST2.1: Human-related sources / Interplay with the clinical staff
		ST1.5: Presence of gaps	RQ 1 RQ 2	RQ1&2/T3/ST3.1: Culture-related sources / Rituals and gap of practice
Interviews (I)	T2: Factors affecting higher-level clinical skills education	ST2.1: Students’ peer grouping affecting learning	RQ 4	RQ4/T4/ST4.1: Skills-teaching-related sources / Social interaction and collaborative learning RQ4/T4/ST4.2: Skills-teaching-related sources / Scaffolding in the zone of proximal learning
		ST2.2: Insufficient experience for skills advancement	RQ 1 RQ 2	RQ1&2/T1/ST1.2: Environment-related sources / Learning opportunities
		ST2.3: Lacking motivation in teaching and learning	RQ 1 RQ 2	RQ1&2/T1/ST1.1: Environment-related sources / Clinical learning context RQ1&2/T3/ST3.1: Culture-related sources / Values, beliefs and attitudes
		ST2.4: Learning from more knowledgeable others	RQ 3 RQ 4	RQ3&4/T4/ST4.2: Skills-teaching-related sources / Scaffolding in the zone of proximal development

Interviews (I)	T3: Barriers affecting the learning process	ST3.1: Mentorship quality	RQ 1 RQ 2 RQ 4	RQ1&2/T2/ST2.1: Human-related sources / Support from the management RQ4/T4/ST4.2: Skills-teaching-related sources / Scaffolding in the zone of proximal development
		ST3.2: Preparedness of students and mentors	RQ 1 RQ 2	RQ1&2/T2/ST2.2: Human-related sources / Interplay with the clinical staff RQ1&2/T2/ST2.1: Human-related sources / Support from the management
		ST3.3: Contextual influence	RQ 1 RQ 2	RQ1&2/T1/ST1.1: Environment-related sources / Clinical learning context RQ1&2/T1/ST1.2: Environment-related sources / Learning opportunities
		ST3.4: Execution of skill teaching strategy	RQ 1 RQ 2 RQ 3 RQ 4	RQ1&2/T2/ST2.1: Human-related sources / Support from the management RQ3/T3/ST3.1: Culture-related sources / Values, beliefs and attitudes RQ4/T4/ST4.2: Skills-teaching-related sources / Scaffolding in the zone of proximal development
Interviews (I)	T4: Acquisition through social interaction	ST 4.1: Social interaction in the workplace	RQ 4	RQ4/T2/ST2.1: Human-related sources / Interplay with the clinical staff RQ4/T4/ST4.1: Skills-teaching-related sources / Social interaction and collaborative learning
		ST 4.2: Influence from surrounding people	RQ 3 RQ 4	RQ3/T3/ST3.1: Culture-related sources / Value, belief, and attitude RQ4/T4/ST4.1: Skills teaching related sources / Social interaction and collaborative learning
Focus group (FG)	T1: Human-related challenges	ST1.1: Students' attitude and ability	RQ 1 RQ 2	RQ1&2/T3/ST3.1: Culture-related sources / Values, beliefs and attitudes
		ST1.2: Support from clinical members	RQ 3 RQ 4	RQ3/T2/ST2.1: Human-related sources / Interplay with clinical staff RQ4/T4/ST4.2: Skills-teaching-related sources / Scaffolding in the zone of proximal development
Focus group (FG)	T2: Teaching-strategy-related challenges	ST2.1: Strategies for developing higher cognition and skills advancement	RQ 3 RQ 4	RQ3&4/T4/ST4.1: Skills-teaching-related sources / Social interaction and collaborative learning RQ4/T4/ST4.2: Skills-teaching-related sources / Scaffolding in

				the zone of proximal development
		ST2.2: Learning through interaction with others	RQ 3 RQ 4	RQ3/T3/ST3.1: Culture-related sources / Values, beliefs and attitudes RQ4/T4/ST4.1: Skills-teaching-related sources / Social interaction and collaborative learning
Focus group (FG)	T3: Environment-related challenges	ST3.1: Hospital and ward policy	RQ 1 RQ 2	RQ1&2/T2/ST2.1: Human-related sources / Support from management
		ST3.2: Workplace culture	RQ 1 RQ 2 RQ 3	RQ1&2, 3/T3/ST3.1: Culture-related sources / Values, beliefs and attitudes
		ST3.3: Environmental condition	RQ 1 RQ 2	RQ1&2/T1/1.2: Environment-related sources / Learning opportunities
Participant observation (PO)	T1: Barriers in learning	ST1.1: Ignorance affecting learning motivation	RQ 1 RQ 2 RQ 3	RQ1&2/T1/ST1.1: Environment-related sources / Clinical learning context RQ1&2/T1/ST1.2: Environment-related sources / Learning opportunities RQ3/T2/ST2.2: Human-related sources / Interplay with the clinical staff
		ST1.2: Lacking chance for skills advancement	RQ 1 RQ 2 RQ 3 RQ 4	RQ1&2/T1/ST1.2: Environment-related sources / Learning opportunities RQ3/T2/ST2.2: Human-related sources / Interplay with the clinical staff RQ4/T4/ST4.2: Skills-teaching-related sources / Scaffolding in the zone of proximal development
Participant observation (PO)	T2: Support and relationship	ST2.1: Mentoring support	RQ 1 RQ 2 RQ 4	RQ1&2/T2/ST2.1: Human-related sources / Support from management RQ1&2/T2/ST2.2: Human-related sources / Interplay with the clinical staff RQ4/T4/ST4.2: Skills-teaching-related sources / Scaffolding in the zone of proximal development
		ST2.2: Ineffective interaction	RQ 1 RQ 2 RQ 3 RQ 4	RQ1&2/T2/ST2.1: Human-related sources / Support from management RQ1&2/T2/ST2.2: Human-related sources / Interplay with the clinical staff RQ3/T3/ST3.1: Culture-related sources / Values, beliefs and attitudes RQ4/T4/ST4.1: Skills-teaching-related sources / Social

				interaction and collaborative learning

Table 5: Summary of clustering works in generating the overarching and sub-overarching themes from the themes and subthemes of the three methods

Overarching themes	**Sub-overarching themes**	**Themes**	**Subthemes**
T1: Environment-related sources	ST1.1: Clinical learning context	T1: Unfavourable clinical learning environment (I) T2: Factors affecting higher-level clinical skills education (I) T3: Barriers affecting the learning process (I) T1: Barriers in learning (PO)	ST1.1: Lacking a supportive workplace culture (I) ST1.4: Complexity of the learning environment (I) ST2.3: Lacking motivation in teaching and learning (I) ST3.3: Contextual influence (I) ST1.1: Ignorance affecting learning motivation (PO)
	ST1.2: Learning opportunities	T1: Unfavourable clinical learning environment (I) T2: Factors affecting higher-level clinical skills education (I) T3: Barriers affecting the learning process (I) T3: Environment-related challenges (FG) T1: Barriers in learning (PO)	ST1.2 Inadequate learning opportunities (I) ST2.2: Insufficient experience for skills advancement (I) ST3.3: Contextual influence (I) ST3.3: Environmental condition (FG) ST1.1: Ignorance affecting learning motivation (PO) ST1.2: Lacking chance for skills advancement (PO)
T2: Human-related sources	ST2.1: Support from the management (I)	T1: Unfavourable clinical learning environment (I) T3: Barriers affecting the learning process (I) T3: Environment-related challenges (FG) T2: Support and relationship (PO)	ST1.3: Lacking support from management (I) ST3.1: Mentorship quality ST3.2: Preparedness of students and mentors (I) ST3.4: Execution of skill teaching strategy (I) ST3.1: Hospital and ward policy (FG) ST2.2: Ineffective interaction (PO)
	ST2.2: Interplay with the clinical staff	T1: Unfavourable clinical learning environment (I) T3: Barriers affecting the learning process (I) T4: Acquisition through social interaction (I) T1: Human-related challenges (FG) T1: Barriers in learning (PO)	ST1.4 Complexity of the learning environment (I) ST3.2: Preparedness of students and mentors (I) ST4.1: Social interaction in the workplace (I) ST1.2: Support from clinical members (FG) ST1.1: Ignorance affecting learning motivation (PO) ST 1.2: Lacking chance for skills advancement (PO) ST2.1: Mentoring support (PO) ST2.2: Ineffective interaction (PO)

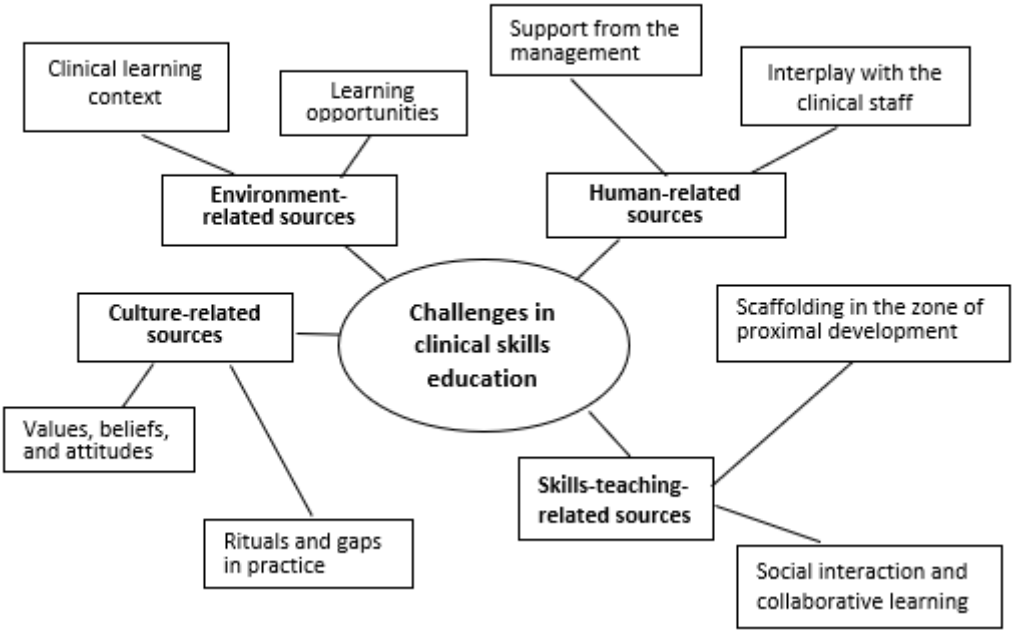
		T2: Support and relationship (PO)	
T3 Culture-related sources	ST3.1: Values, beliefs and attitudes	T2: Factors affecting higher-level clinical skills education (I) T4: Acquisition through social interaction (I) T2: Teaching-strategy-related challenges (FG) T3: Environment-related challenges (FG) T2: Support and relationship (PO)	ST2.3: Lacking motivation in teaching and learning (I) ST 3.4: Execution of skills teaching strategy (I) ST 4.2: Influence from surrounding people (I) ST1.1: Students' attitude and ability (FG) ST2.2: Learning through interaction with others (FG) ST3.2: Workplace culture (FG) ST2.2: Ineffective interaction (PO)
	ST3.2: Rituals and gaps in practice	T1: Unfavourable clinical learning environment (I)	ST1.5: Presence of gaps (I)
T4: Skills-teaching-related sources	ST4.1: Social interaction and collaborative learning	T2: Factors affecting higher-level clinical skills education (I) T4: Acquisition through social interaction (I) T2: Teaching-strategy-related challenges (FG) T2: Support and relationship (PO)	ST 2.1: Students' peer grouping affecting learning (I) ST4.1: Social interaction in the workplace (I) ST4.2: Influence from surrounding people (I) ST2.1: Strategies for developing higher cognition and skills advancement ST2.2: Learning through interaction with others (FG) ST2.2: Ineffective interaction (PO)
	ST4.2: Scaffolding in the zone of proximal development	T2: Factors affecting higher-level clinical skills education (I) T3: Barriers affecting the learning process (I) T4: Acquisition through social interaction (I) T1: Human-related challenges (FG) T2: Teaching-strategy-related challenges (FG) T1: Barriers in learning (PO) T2: Support and relationship (PO)	ST2.1: Students' peer grouping affecting learning (I) ST2.4: Learning from more knowledgeable others (I) ST3.1: Mentorship quality (I) ST3.4: Execution of skill teaching strategy (I) ST1.2: Support from clinical members (FG) ST2.1: Strategies for developing higher cognition and skills advancement (FG) ST1.2: Lacking chance for skills advancement (PO) ST2.1: Mentoring support (PO)

Table 6: Overview of the finalised overarching and sub-overarching themes in response to the research questions

Research questions	**Finalised overarching and sub-overarching themes**
What are and how do the sociocultural sources in the local clinical setting affect the development of the clinical nursing skills of nursing students? (RQ 1 & 2)	**Overarching theme 1: Environment-related sources** Sub-overarching theme 1.1: Clinical learning context

To what extent do the cultural elements in the clinical environment influence the cognitive thinking of nursing students through a transformation process into a higher level and eventually their mastery of clinical nursing skills? (RQ 3) How does the social interaction between the nursing students and other professional parties in the clinical environment affect the teaching and learning process in clinical nursing skills education? (RQ 4)	Sub-overarching theme 1.2: Learning opportunities **Overarching theme 2: Human-related sources** Sub-overarching theme 2.1: Support from the management Sub-overarching theme 2.2: Interplay with the clinical staff **Overarching theme 3: Culture-related sources** Sub-overarching theme 3.1: Values, beliefs and attitudes Sub-overarching theme 3.2: Rituals and gaps in practice **Overarching theme 4: Skills-teaching-related sources** Sub-overarching theme 4.1: Social interaction and collaborative learning Sub-overarching theme 4.2: Scaffolding in the zone of proximal development

Figure 19: Thematic map based on the re-synthesised findings from Table 6



4.5 Summary

This chapter presented the findings from the three methods used in this research study. It utilised thematic analysis and followed the seven steps proposed by Braun and Clarke (2013). It drew upon the comments and insights of participants having participated in interviews, a focus group, and the notes of participant observation recorded in my research diary. The

prominent themes and subthemes with outstanding code-frequency in the data display have been highlighted and illustrated. The findings were presented, having identified 9 themes and 26 subthemes from 4 domains (i.e., environmental, personal, skill educational and professional). They were finally integrated and resynthesised to create 4 overarching and 8 sub-overarching themes in response to each research question. The following chapter will have the analysis and discussion based on these findings and with support from the theoretical ideas of Vygotsky and the related academic literature.

Chapter 5: Analysis and Discussion

5.1 Introduction

This chapter presents the analysis and discussion of the data in conjunction with the academic literature. Underpinned by the social constructionist epistemology, this study makes several assumptions according to my own clinical and educational practice, legitimises the interpretation and construction of subjective meanings of experience through interaction with the environment (Creswell, 2007). The social constructionist perspective focuses on the participants' own worldview, which is shaped by their own experiences to generate a unique representation of its underlying meaning. Based on the data collected from the interviews, focus group and the participant observation in my research diary, four sociocultural sources identified as overarching themes and sub-overarching themes are derived after re-synthesising and integrating from the primary themes, subthemes, and codes in the important domains (Table 5). These four overarching themes include "Environment-related sources", "Human-related sources", "Culture-related sources", and "Skills-teaching-related sources". Each of these themes has two sub-overarching themes that illustrate the prominent sociocultural elements investigated in this case study.

5.2 Current findings and research questions

Table 5 outlines the overarching and sub-overarching themes used to respond to the research questions. Whilst these questions are interrelated, a holistic analysis was performed to answer them individually. I employed inductive reasoning in analysing the collected findings and interwove information from the literature, theoretical ideas, my personal experiences and reflections into the discussion. The co-constructed framework facilitates the integration of inputs from the researcher and participants by drawing upon the theoretical ideas of Vygotsky's SCT (1978), thereby helping visualise the sociocultural sources in a clinical environment that affect local clinical nursing skills education. Table 6 presents an overview of the overarching and sub-overarching themes which has also outlined in Chapter 4.

Table 6: Overview of the finalised overarching and sub-overarching themes in response to the research questions

Research questions	Finalised overarching and sub-overarching themes
What are and how do the sociocultural sources in the local clinical setting affect the development of clinical nursing skills of nursing students? (RQ 1 & 2) To what extent do the cultural elements in the clinical environment influence the cognitive thinking of nursing students through a transformation process into a higher level and eventually their mastery of clinical nursing skills? (RQ 3) How does the social interaction between nursing students and other professional parties in the clinical environment affect the teaching and learning process in clinical nursing skills education? (RQ 4)	**Overarching theme 1: Environment-related sources** Sub-overarching theme 1.1: Clinical learning context Sub-overarching theme 1.2: Learning opportunities
	Overarching theme 2: Human-related sources Sub-overarching theme 2.1: Support from the management Sub-overarching theme 2.2: Interplay with the clinical staff
	Overarching theme 3: Culture-related sources Sub-overarching theme 3.1: Values, beliefs and attitudes Sub-overarching theme 3.2: Rituals and gaps in practice
	Overarching theme 4: Skills-teaching-related sources Sub-overarching theme 4.1: Social interaction and collaborative learning Sub-overarching theme 4.2: Scaffolding in the zone of proximal development

5.3 Overarching and sub-overarching themes

5.3.1 Overarching theme 1: Environment-related sources

Amongst the four overarching themes, I chose to discuss "Environment-related sources" first to understand why and how the overall clinical learning context and the learning opportunities therein affect the clinical skills education of nursing students. These sources have been widely discussed in the interviews and focus group. The participants addressed the suggestions of Vygotsky (1994), who argued that the environment plays a pivotal role in the learners' cognitive development and proposed that the environment is "not with an absolute but a relative yardstick" (p.338). According to Vygotsky (1978), the social environment is not static; rather, this source keeps on transforming and interacting with learners via constant learning activities (opportunities) and elicits different learning outcomes from learners (Vygotsky, 1978). For this reason, Vygotsky (1978) suggested "approach environment from the point of view of the relationship which exists between the child (learner) and its environment at a given stage of his development" (ibid.). The findings from the literature review, interviews and focus group, all undermine that the local complex clinical learning context provides a realistic and challenging physical platform for nursing students to practice

their nursing skills (Yang & Chao, 2018; Chan et al., 2018). This invaluable learning process in the clinical place also provides opportunities for students to socially interact with others in their surroundings, which prepares them for the professional role of a nurse after their graduation (Cheraghi et al., 2008; Peyrovi, 2005). The participants (learners and non-learners), who have distinctive roles in the nursing field, shared their unique perspectives on the current situation as discussed in Section 4.3.1 and 4.3.2. Surprisingly, most participants from different categories unanimously agreed that a facilitating learning context can fulfil the different requirements of nursing professional training (Hughes & Quinn, 2013) by providing learning opportunities, mental stimulation, psychomotor skills training and passion for studying, all of which can affect the overall teaching and learning efficacy (Heung & French, 1997). With this in mind, I divided my analysis of environment-related sources into two parts, namely, the "clinical learning context" (where students undergo their clinical learning) and the "learning opportunities", whose importance has been stressed by Vygotsky (1978) when discussing how learning experience shape the learners' cognitive and motivational processes.

5.3.1.1 Sub-overarching theme 1.1: Clinical learning context

The clinical learning context plays an essential role in the nursing students' clinical training (Yang & Chao, 2018). Although nursing students have been prepared substantially in the training institutions, the constraints in clinical practice have often been reported by the authority (Hospital Authority, 2017). Ip and Chan published several articles from 2005 to 2007 discussing the social climate of the local clinical learning environment that drew attention from past curriculum reformation to a social-based perspective – the clinical learning environment. However, without an in-depth investigation, these articles have left a large area unexplored. In Section 4.3.1.1.4, when presenting the subtheme 3.3 "Contextual influence", Kate, the second-year nursing student pursuing a higher diploma nursing studies programme in University B described how an unsupportive environment influences her learning. In the Kate's quotes, she ascribed the unsupportiveness to three aspects, namely, the ward nature ("acute" in Line: 24), her eligibility ("a student without license" in Line: 26) and her skills competency ("lacking experience and technique" in Line: 27), all of which can affect her overall clinical learning experience in the practicum. The interview with Kate highlighted how a busy environment influences the clinical skills education of nursing students and this has been a longstanding problem in Hong Kong as reported by official agencies and on social media (Food & Health Bureau of the Government of Hong Kong

Special Administrative Region, 2008, 2015; Hospital Authority, 2017; Cheung, 2019a, b). The statistical data demonstrates the occupancy rate has risen to over 120% of the medicine unit especially during the winter surge in which the demand has outgrown the supply along with an ever-increasing population (Hospital Authority, 2017). Such high bed occupancy has persisted for several years, "affecting the way ward staff are able to manage patients along the care pathway, such as in admissions and onward referrals, as well as on the buffer capacity for responding to changes in patient demand, such as during the winter surge" (Hospital Authority, 2017, p.25). Many local and global studies have further put forward that how the clinical learning environment goes about its business can also affect the clinical nursing skills education of nursing students (Hung & Lam, 2020; Chan et al., 2009; Keil & Ward, 2020), which sometimes relates to physical limitations (Watson et al., 2008). However, only a few studies have analysed in depth on why this situation affects the learning of students.

According to Vygotsky's SCT (1978), students' active participation and eagerness to learn can have a key influence on their learning. However, without the presence of a capable other (i.e., clinical staff) or an effective cultural tool (e.g., language instruction) to support their skills mastery, students are unable to learn actively in the zone of proximal development and build their potential. The conceptions are also illustrated by the expression from nurse teacher Yun and Lang during the focus group and my participant observation in the skills laboratory teaching (see Section 4.3.2.1.1.1 & 4.3.3.2). This contention only highlights the importance of promoting a positive learning atmosphere and investigating how such an atmosphere associates with the clinical staff and affects the learning confidence of students. During their first teacher-guided practicum at University B, nursing students are often assigned to the medical and surgical unit of an acute hospital setting. This arrangement follows the syllabus of the Nursing Council of Hong Kong, which requires students to go through a designated learning experience in various specialities (NCHK, 2015a, 2021a). Through experiential learning, nursing students can build their confidence and develop their nursing skills (Kolb, 1976). The clinical environment is an important setting for nursing students to learn, work and to socialise with other professional members (Hughes & Quinn, 2013; Ip & Chan, 2005; Dadgaran et al., 2013; White, 2010; Jessee, 2016). When the workplace routines clash with their learning activities, the students sometimes give way to their clinical work, thereby affecting the overall teaching plan and learning quality, which has been demonstrated from my participant observation during clinical visit (see Section 4.3.3.1) and the expression of

participants from interviews as well as focus group (see Section 4.3.2.1.1.1). The nurse teacher, Yun (Y: Focus Group Part II, 2020) recounted her work routine during her practicum:

Lines	Identifier	Extract
525	Y	… their [students] routine times just so overlapping with ward shift handover time, so some students, actually they really want to listen to the shift handovers. However honestly when they're working the ward routine, they won't be able to listen to the shift handover. You can actually learn a lot through listening to how people do the shift handover, because it's not possible to read all the patients' records, therefore during the handover time, you'll get a feeling of how the cases are doing, what are those…

The extract from Yun coincided with my participant observation in clinical visit in which the students exclaimed that they were "advised" by the clinical staff that they were better to first complete their work before their studies (see Section 4.3.3.1). Some students expressed that they were too exhausted to read the clinical notes after completing their routine work (e.g., patients' napkins round). The statistical data show that along with the increasing demand for local healthcare services, the staff requirement for Hospital Authority has grown considerably, thereby resulting in a staff shortage for nurses in Hong Kong (Hospital Authority, 2017). The nurse-to-patient ratio in Hong Kong public hospitals is 1:12, which is higher than the international standard of 1:6 (Chair et al., 2016). To guarantee the success of their clinical education, nursing students should be given adequate support from clinical members. However, the demanding nursing environment and staff shortage in Hong Kong have created pressure on frontline nurses, thereby introducing challenges to the implementation of quality mentoring in clinical practice (Cheung, 2019a, b; Chair et al., 2016). The environmental busyness also deprived students the opportunity to learn on site and be closely supervised by senior nurses or clinical mentors.

During my earlier years, I noticed that when the mentoring personnel (i.e., nurse teachers, clinical mentors or frontline nurses) worked under pressure, they would tend to complete the urgent bedside clinical tasks on their own, which might negatively affect their passion in mentoring students or make them unwilling to explain to students the logical steps or principles in detail which echoed the expression from Chai Ho, the APN during the interview (see Section 4.3.1.1.4). In the focus group, Hanny (H, clinical nurse: Focus Group Part I, 2020) described how the busy nature of her respiratory medical unit affected her mentoring activities. She commented that her busyness sometimes led to struggles for her to complete

her daily routines within a limited time frame. Whilst Vygotsky (1978) emphasised the importance of scaffolding by more capable others (e.g., clinical mentors or nurses in the ward) in developing students' potential, an unfavourable learning context may impede the learning implementation. Hanny, a clinical nurse in the interview, added that whilst some learning areas require further elaboration, she did not have the time to deliver better mentoring to her students. According to the Vygotskian focus on "assisted discovery" (Vygotsky, 1978), which stresses the importance of an effective interaction between students and mentors and suggests that mentors should address the students' learning needs and design the next step of their learning in a scaffolding strategy (Archer et al., 1995), having an increased workload prevents these mentors from delivering quality clinical skills education. Nursing student Harry (NS02: Interview, 2020) complained, "That's why it is often said that 'luck' is so crucial during practicum" (Lines: 442-443). "Luck" here actually refers to having a supportive mentoring atmosphere in the workplace and may be related to the availability of staff in a specific clinical situation. If students are "lucky" enough to be appointed to an environment that facilitates learning, then they can gain more from their learning experience. Hanny and Harry only represented one of the mentoring staff and nursing students in the field, however, they brought up an important issue related to the practical conflict between the clinical context and skills education.

5.3.1.2 Sub-overarching theme 1.2: Learning opportunities

Learning opportunities refer to granting nursing students the opportunity to immerse themselves in nursing skills practice and subsequently develop their clinical nursing skills (Motsaanaka et al., 2020). Nursing students in Hong Kong are required to spend their practicum in the clinical areas of hospitals (NCHK, 2021a). The demand for getting sufficient and appropriate learning opportunities in clinical practice have been illustrated in the data from three methods mentioned in Chapter 4. In the interviews and focus group, "Learning opportunities" emerged as an important subtheme under the "Environment-related sources" overarching theme which indicate that learning opportunities come from the clinical environment and that students or nurse teachers need to collaborate with clinical members in a clinical environment to obtain skills practice opportunities (Dunn & Hansford, 1997).

The lack of learning opportunities in the clinical environment can be ascribed to specific reasons. Apart from the external factor due to unsatisfactory ward arrangement as described by participants from the interviews and focus group, students' internal factor should also be

considered. Haco (NS04: Interview, 2020) is a fourth-year nursing student who attributed such problems to his lack of confidence. As quoted from the interview:

Lines	Identifier	Extract
273	NS04	… My performance was relatively worse than those of the other
274		students, because maybe ... you don't dare to talk to the nurse teacher,
275		and you may not be able to talk to the staff, because er ... you won't
276		have good conversations directly with the staff, and they'd talk to the
277		teacher first anyway, so maybe you'd take less initiative with
278		opportunities or ask less actively ….

As Haco felt that he was not performing as well as his peers, he started to withdraw, taking less initiative at work or refusing to ask questions to his peers. Though more support is required for Haco, but the mentoring support under the busy environment is apparently insufficient (see Section 4.3.1.1.3). Given that the usual practice for the current nursing practicum arrangement of University B requires eight nursing students mentoring by one nurse teacher to be allocated to the same practicum site at the same time, providing the appropriate learning opportunities for all these students presents a challenge for both the nurse teachers and clinical nurses. Learning opportunities involve not only fundamental ward routines (e.g., changing napkins or feeding patients) but also include learning elements in the environment that allow nursing students "to progress from being novice to a professional nurse" (Motsaanaka et al., 2020, p.1). Therefore, introducing students to meaningful learning opportunities can develop their clinical competency and higher-order thinking skills, both of which are critical to their profession (Coyne & Needham, 2012). This concept is congruent with Vygotsky's SCT (1978), which emphasizes the importance of using the appropriate cultural tools (i.e., nursing tasks) to build up the learners' higher-order thinking (e.g., critical thinking ability or problem-solving skills) that allows them to manage complex situations.

Apart from providing the appropriate cultural tools, another notion underpinning the framework is the "active participation of the learner" in their learning process. Vygotsky's SCT (1994) argues that learners discover, transmit knowledge and experience during interaction and which contradicts the conventional thought that upon acquiring skills from others. When the learners start internalising, they promote the exploration of knowledge and relation to the world (Lave & Wenger, 1991). Based on this conception, that explained my decision made in my participant observation at the skills laboratory teaching to encourage student Amy to prime up the nasogastric system herself (see Section 4.3.3.2). According to Vygotsky (1978), the active learning of learners keeps changing their cognitive development

at every age as they continue to learn, adjust, develop and pass through the zone of proximal development. In other words, internalisation at this stage plays an active, rather than passive, role in providing learning opportunities to learners.

The demand of sufficient and appropriate learning opportunities has been debated for many years and is particularly important in clinical contexts where students need to complete their practicum independently (i.e., without a designated nurse teacher). During their eight-hour shifts (A or P duty), students often perform clinical routine and menial tasks, from which they gain learning experience. However, the available learning opportunities should be adjusted according to the learning level or schooling years of students. Therefore, learning in a practical setting does not occur by chance but rather "requires careful rational planning of the education process with the cooperation of service managers and practitioners" (Heung & French, 1997, p.460). In a local practical situation, managing a large number of students in the workplace at the same time creates an additional burden for the clinical staff (Motsaanaka et al., 2020), thereby limiting the available learning opportunities for these students. This problem is perfectly captured in the following extract from Cathy (NS03: Interview, 2020), a pre-enrolled nursing student:

Lines	Identifier	Extract
305	NS03	There were many things I wanted to do, and there were eight of us.
306		There were so many people fighting for the chance to do the clinical
307		assignment, so, the available opportunities for learning and skill
308		training are already limited.

Whilst Haco and Cathy spent their practicum in different hospitals at different periods, they brought up their different views on the provision of learning opportunities, there could be with varying levels of difficulty, which agrees with the statements of Motsaanaka et al. (2020). My research diary entry (see Section 4.3.3.1) recorded my participant observation of my clinical visit which highlighted the grievances of students about the lack of learning opportunities in their practicum site. Their grievances got close to those examples mentioned above. Specifically, during my visit, the students complained about the lack of variety in their learning opportunities, and they were not facilitated to engage in higher-level nursing tasks, which negatively affected their learning.

Vygotsky's SCT (1978) presents several assumptions about the person, the world and their relation to social practice. Learning opportunities enhance the clinical preparedness of

students for their transition to their future professional roles (Coyne & Needham, 2012). This argument supports the contentions of SCT (1994), which views the "environment as a source of development" (Vygotsky, 1994, p.352). Moreover, people will try to achieve their valued goal during their learning process (Wells & Claxton, 2002). However, achieving such a goal requires practice (learning opportunities) in the environment. Many nursing procedures require a higher-level cognitive capability for problem solving, decision making and formulating clinical judgements based on theory, knowledge and specialised skills. These skills become complex when nursing students come to the bedside and interact with various parties (Hughes & Quinn, 2013).

5.3.2 Overarching theme 2: Human-related sources

The sociocultural sources of the clinical learning environment that influence skills education also include human-related factors. Section 5.3.1 discusses two prominent issues in "Environment-related sources", namely, the presence of an environment that facilitates clinical learning and the provision of sufficient opportunities for skills learning. Support from workplace staff and clinical management is also crucial in enhancing clinical skills education (Palmer et al., 2005) because "the influence of senior teams foster good team dynamics" (Henderson et al., 2011, p.200). Many studies suggest that the attitudes of the clinical staff, including their willingness to engage in a mentoring relationship and their support in gaining access to learning experiences (Saariksoski et al., 2007; Koy, 2015; Hughes & Quinn, 2013), also influence the clinical learning environment. Meanwhile, implementing organisational policies, appointing a designated clinical mentor for the students, being alert to these students' learning needs, developing the readiness of clinical staff and interacting with the nursing students are also pivotal (Davis et al., 2016). This case issue is highlighted in the findings of the interviews, focus group and participant observation from my research diary. In those interactive sessions, the nursing students shared how managerial personnel influence their morals in learning. The advanced practice nurses also shared the dilemmas they face during clinical skills education, which helped us understand the concerns from the management side (see Section 4.3.1.1.4). In the following sections, I integrate these findings and synthesize them into the overarching theme of "Human-related sources", under which I discuss two sub-overarching themes, namely, "Support from the management" and "Interplay with clinical staff". I disclose the grievances shared by the student participants about their experiences in an unsupportive mentorship arrangement and how their rapport with the clinical staff and managers in the clinical setting significantly influences their skills learning.

5.3.2.1 Sub-overarching theme 2.1: Support from the management

Both the interviews and focus group highlighted the central role of managerial personnel (e.g., ward managers or advanced practice nurses) in the skills learning of nursing students. This conception is also congruent with the review of the literature, which suggests that managers' leadership and management style are influential determinants of a supportive learning environment (Yang & Chao, 2018; Hughes & Quinn, 2013; Santos, 2012). Cathy (NS03, nursing student: Interview, 2020, Lines 296-300) pointed out how the clinical managerial approaches affect her learning:

Lines	Identifier	Extract
296	NS03	I remember before when I was still in year 1, at that time we had a teacher
297		who would bring us to practicum that lasted for six weeks. But when we got
298		to a ward … the ward manager kept on hindering our studies, and everything
299		was … they [clinical staff] didn't believe us, and it's like er … we got some
300		patient records and it's delaying their work.

Cathy added that, "the ward manager kept on giving us a hard time. We students have even less opportunities to learn" (Lines: 309-310), which illustrates how managers influence the learning opportunities available to nursing students. However, Cathy also gave another example that she was encouraged when having an APN's support, the below statement showed its positive influence.

Lines	Identifier	Extract
462	NS03	… there was an APN, who told me that he was promoted from EN upwards.
463		He kept on telling me that, "you need to add oil", "I used to be like you, just an
464		EN like that" … He said that if you work harder, you will later get to his
465		position, and he is an older "sir" now …

Cathy's personal experience illustrates the management dictates the availability of learning opportunities and how they influence the learning motivation of students. The actions of the manager (or the ward-in-charge) embed the value of leaders in clinical practice and subsequently influence the interactions of clinical members (e.g., clinical nurses or other personnel) with their students as they perform their work, establish their behaviour and undertake clinical education (Henderson et al., 2011).

In a sociocultural environment, managers exhibit their authority over an organisation (Schein, 2004). Their words have a commanding tone that influences the students. Ada (NT03, nurse

teacher: Interview, 2020) as a nurse teacher recounted her interactions with a manager as follows:

Lines	Identifier	Extract
244 245 246 247 248 249	NT03	… One day, the manager talked to that student [I only knew about this after it happened], 'Do you know in which profession people would carry a bag like this?' That student, of course did not know how to answer, he was scared. The manager then said, 'unprofessional looking!' I don't remember what the profession exactly was, but this incident greatly embarrassed that student. That student panicked and put that small waist bag away immediately …

The above extract shows that even a casual comment from the manager on the students' professional outlooks that could induce students' panic feelings. According to Schein (2004), organisational culture has three levels, namely, behaviours and artefacts, values and basic assumptions. In the above extract, the "value" of an individual in the workplace is influenced by his/her contextual culture and the manager's behaviour. The "nursing culture has a powerful influence" (Hughes & Quinn, 2013, p.358) on nursing students, especially on their preparation for their professional roles and their establishment of inherited values.

Another issue that needs to be underscored here is the support from the management and mentorship arrangement in clinical skills education. In the current practice, a ward manager assigns one designated clinical mentor coaching three nursing students which followed the stipulations of the Nursing Council (NCHK, 2017b, p.7). However, some nursing students complained about this arrangement, saying that their designated mentors do not supervise them closely. Like Cathy mentioned the interview (see Section 4.3.1.1.3) in Chapter 4 stating the mentor only for "push button" (permission to practice). This problem may be ascribed to the fact that clinical mentors play two roles in the ward simultaneously, that is, as the wards-in-charge or team nurse and the students' mentors. The following extract from Lang (L, nurse teacher: Focus Group Part I, 2020) highlighted the dilemma related to this arrangement:

Lines	Identifier	Extract
851 852 853 854	L	… They [mentors/clinical nurses] think that they're not free to mentor them [students], and they haven't even finished their own tasks, like they'll think that it's not … within their scope of responsibility because they think their duty is to follow the team, manage their own cases, yes …

A senior clinical nurse, Suet (S: Focus Group Part I, 2020), is a ward-in-charge who, despite understanding the problem at hand, was helpless in this dilemma. The following extract was taken from the focus group interview:

Lines	Identifier	Extract
61 62 63 64 65	S	… If one person [student] goes out to practicum, s/he might be scared, and … and perhaps our mentors may not be with them [students] for a whole month when going to work, maybe … maybe they [students] will become "orphans", that is, there is no one there to help them do those … nursing care, and perhaps that reduces their learning opportunities…

The above findings indicate that mentorship quality is affected when clinical mentors/nurses are unable to carry out the duties of dual roles or when their shifts do not align with each other. Suet used the term "orphan" (Line 64) to refer to students facing this condition (working on their own without support). This exposition specifies the interrelationship amongst management, mentorship and clinical education.

Pembrey (1980), Fretwell (1980) and Orton (1981) highlighted the crucial role of managers (ward sister in old term) in establishing a positive clinical learning environment. They explored the learning environment and patient care atmosphere not only from the perspective of students but also from those of nurse teachers, clinical mentors and other personnel in the ward environment. In interviews, the nurse teacher participants pointed out some challenges they face in delivering clinical skills education in the practicum ward, one of which is related to their "visitor status", that is, they are not the regular staff in the hospital's human resource system. Fanny (NT04: Interview, 2020), a nurse teacher from University B, expressed that she could not perform much of her clinical assignments whilst looking after the students and said, "…you know I am only a visiting teacher in the ward, I cannot control many things" (Lines: 85-86). This comment suggests that management and clinical staff support plays a pivotal role in ensuring the "survival" (Yang & Chao, 2018, p.54) of clinical students in such a learning atmosphere.

University B collaborates with several clinical partners (public or private hospitals) in arranging practicum sites for its nursing students (Henderson et al., 2011). Most public hospitals in Hong Kong are governed by the Hospital Authority who, according to the Hospital Authority Ordinance in 1990 (Hospital Authority, 2021a), plays several roles in public hospital management, including catering to the needs of healthcare service providers and arranging training and development programmes for existing and prospective learners. These roles also involve the arrangement of clinical skills education:

- *Advising the Government on the needs of the public for hospital services and of the resources required to meet those needs;*
- *Managing and developing the public hospital system;*
- *Recommending to the Secretary for Food and Health appropriate policies on fees for the use of hospital services by the public;*
- *Establishing public hospitals;*
- *Managing and controlling public hospitals; and*
- *Promoting, assisting and taking part in education and training of persons involved in hospital or related services.*

(Hospital Authority, 2021b)

The above roles indicate that the managerial personnel (i.e., ward managers or advanced practice nurses) as the employees of the HA, they need to comply with the organisations' strategies in nursing care, its resources management, and its interventions to minimise clinical incidents and errors that can threaten the safety of patients (Skytt et al., 2008). The clinical policies of the workplace also affect the clinical learning environment (Dunn & Burnett, 1995; Palmer et al., 2005), and both the managerial personnel and their approaches play a crucial role in skills education.

According to Vygotsky (1978), internalisation focuses on the interactive influence of internal sources (i.e., students' already learnt knowledge) and external sources (i.e., the practical requirements of clinical nurses and managers) on the mental development of students. After actively learning and integrating knowledge, students internalise it as part of their self-knowledge and consequently improve their mental functioning (Vygotsky, (1978). Lave and Wenger (2005) understood internalisation in relation to Vygotsky's (1978) notion of "experienced in interaction" (p.149). Clinical skills education focuses on skills learning, which depends on the support and information exchange with the managers, clinical staff and nurse teachers and on the active participation of students (Davis et al., 2016). These notions have been mentioned seriously in the interviews and focus group session. As stated, the management is an important sociocultural element in the clinical setting that affects the overall learning process (Henderson et al., 2011). Novice learners (i.e., students undergoing their first practicum) usually learn through observation and participation with a "good role model" (ibid., p.199) in the ward, as Kitty mentioned in the focus group, she would observe and learn from the seniors (see Section 4.3.2.1.1.3). Upon receiving others' feedback, these

students attempt to improve their skills (Egan & Jaye, 2009) and develop their independent problem solving abilities (Lee, 2005).

5.3.2.2 Sub-overarching theme 2.2: Interplay with the clinical staff

In this study, "clinical staff" refers to those people working in the practicum site. Such individuals are not limited to designated mentoring personnel (e.g., nurse teachers and clinical mentors) but also involves other clinical members working in the same clinical learning atmosphere (e.g., frontline nurses, doctors, personal care/healthcare assistants (HCAs) or specialists in other para-medical disciplines, such as physiotherapists, occupational therapists, and dietitians). Such personnel can influence the learning experience of nursing students through their interactions. The interviews and focus group, especially with the nursing students, indicate that establishing a constructive relationship with the clinical staff is pivotal to the effective skills education of students. Harry (NS02: Interview, 2020), a fourth-year nursing undergraduate of University B, recalled one of his experiences where the lack of support from the workplace staff influenced his learning opportunities:

Lines	Identifier	Extract
421	NS02	… For example, escort a patient to the CT examination, I have to do the
422		patient's checklist, and I need to escort the patient to the department afterwards.
423		However, at that time, the HCA asked me to take the BP of the patient, which is
424		supposed to be his job. If the staff is not supportive and allow you to do their
425		[clinical nurses] work for them, you will lose a precious learning opportunity.
426		Losing the chance to collect cases from the OT (operating theatre), doing the
427		checklist, escorting the patients, doing something more important…

The above extract highlights the contrasting values between the learner (Harry) and the clinical members (the HCA and staff nurse). Harry prioritises "learning" in his practicum; he wants to escort a patient for the computerised tomography examination and learnt how to fill in the patient's checklist. However, in the actual situation, he thinks about how he can satisfy both his learning needs and the requests of clinical nurses in the workplace. Harry's case involves two important personnel, namely, the HCA and the clinical nurse. Under the hierarchical structure of local organisations, HCAs are fundamental healthcare workers who operate in general clinical units. Given that HCAs have only completed a very short healthcare training course prior to their deployment, they do not belong to the nursing family and perform limited basic care tasks. HCAs may not comprehensively understand the learning needs of nursing students and merely regard students as "helping hands" for the fundamental routines. Similarly, when nursing students do not actively voice out their

learning needs, clinical nurses may not be aware of what the students want to or should learn. The above extract from Harry reflecting on the conflicts underscores the interaction amongst nursing students, HCAs and clinical nurses that may affect the clinical skills education of students or their progression from basic tasks to advanced ones. They also are regarded as the key surrounding people influencing the context (see Section 4.3.1.1.5).

Vygotsky (1984, as cited in Minick, 2005, p.51) perceived the "environment as the social situation of development" and emphasized the importance of maintaining the "functional relationship between the individual and the environment". This relationship involves the learner perceiving and processing incoming stimuli from his/her environment in social practice (Minick, 2005). According to this conception, the stimuli coming from a variety of learning activities in the clinical environment can stimulate the "developmental dynamic" (ibid., p.50) and learning of students. To a certain extent, such stimulation is related to the interplay between learners and the clinical staff. Lewin (2007, p.239) used an analogy to describe three essential elements that determine workplace learning in clinical education, namely, "interested learner (seed)", "effecting fruitful access to it (the sowing)" and "the supporting clinical and human educational resources (the soil)". When adapted to the current situation, this botanic analogy demonstrates how the support from the clinical staff allows the interested nursing students to access those learning activities that are critical to their skills development. Supported from my participant observation during the clinical visit, it outlines more attention is required in the nurturing process (see Section 4.3.3.1).

Lewin (2007, p.245) argued that "clinical learning opportunities available to students in a congenial learning atmosphere which is further enhanced by some excellent teaching from nursing and medical staff who value and respect the contribution of students in their care". This point underscores the critical role of the clinical staff. Efforts from both the learner and mentor (Lewin, 2007) are also important in developing nursing students into knowledgeable doers (White, 2010). Rossana (CN03: Interview, 2020), the clinical mentor from the operating theatre of a local hospital, argued that in the teaching and learning relationship between a clinical nurse (mentor) and students, the passive behaviour of the latter significantly inactivates the interaction process (see Section 4.3.1.1.2) and influences the effectiveness of skills education as typified in the following quotation:

Lines	Identifier	Extract
281	CN03	… Nowadays … the … adult learning. When you reach that stage, it's
282		already adult learning. If they don't take the initiative to ask and you keep on
283		telling them things that they should listen to but you don't even know
284		whether they're interested, like … Learning is supposed to be interactive. I
285		always say we need to have interaction. If that person is not interested, they
286		won't ask you about anything, they'll just say "oh oh oh, yes yes yes" and
287		that's all, and they only do anything when you ask them to …

Mirroring sub-overarching theme 1.1 (clinical learning context), "Interplay with the clinical staff" (sub-overarching theme 2.2) is significantly related to the outcomes of creating a setting that facilitates the learning of students (White, 2010). Harry (NS02, nursing student: Interview, 2020, Lines: 583-585) recounted how the acceptance from the clinical staff influenced his motivation to learn, "…if the ward atmosphere is nice and supportive, I would be brave enough to ask what I would like to learn, as I knew that, they would let me learn, and they don't consider me only as a helper in the ward". According to Vygotsky (1978), learning is a social process that is part of daily practice that constantly involves socialisation and interaction (Ewertsson et al., 2017). Similar to several other nursing students, Harry proposed that clinical members' acceptance of learners' identity and maintaining good relationships with people in the clinical context are critical to the clinical skills learning of nursing students and he expressed this concern in the interview.

Hegenbarth et al. (2015) argued that the poor relationship between students and clinical members greatly constrains the learning of students and suggested that an open and supportive workplace should encourage feelings of belonging and involvement amongst students. Kate (NS01: Interview, 2020), the pre-enrolled nursing student, described an incident where she initially hesitated to perform a wound dressing to the broken finger of a patient, but eventually became confident in performing this skills procedure after receiving encouraging words from the doctor and the clinical nurse. A clinical environment involves specialists from other non-nursing disciplines, such as doctors or physiotherapists, who, despite not taking the designated mentor role, can influence the skills learning of students through their interactions.

Previous studies also show that the clinical learning experience of students varies according to the nature and quality of their interactions with the clinical staff. This interaction element determines these students' passion, motivation and behaviour towards clinical learning (Chan, 2002; Henderson et al., 2009; Flott & Linden, 2016). Vygotsky's (1978) theoretical

ideas posit that "learning as legitimate peripheral participation means that learning is not merely a condition for membership but is itself an evolving form of membership" (Lave & Wenger, 2005, p.152), through students' participation, the internalisation and the renewed construction of conflict resolution takes place. These ideas support the contention that several factors influence the interplay between learners and the clinical staff.

5.3.3 Overarching theme 3: Culture-related sources

The concept of culture is "multi-layered and complex" (Kaufman & McCaughan, 2013, p.51). This term was derived from "anthropology" (Kotter & Heskett, 1992) but has been widely used in different realms in recent decades (Lim, 1995; Konteh et al., 2011), including educational psychology (Vygotsky, 1978), literacy (Hirsch, 1987), artistic heritage (Logan, 2007) and organisational culture (Panda & Gupta; 2001; Schein, 2004). To understand the sociocultural elements of the clinical environment, I draw on the definition of culture from the educational and organisational fields. The third overarching theme, "Culture-related sources", has two sub-overarching themes, namely, "Values, beliefs and attitudes" and "Rituals and gaps in practice". Using the data collected from the interviews and focus group session, I will discuss how these cultural elements influence students' cognitive thinking, their transformation into a higher level and their mastery of clinical nursing skills, which can also be shown in my participant observation during the skills laboratory teaching.

5.3.3.1 Sub-overarching theme 3.1: Values, beliefs and attitudes

The participants from the interviews and focus group mentioned "professional value" as a cultural element and discussed how such value influences a person's belief and attitude. As an academic discipline, nursing has a unique culture and contains "identifiable norms, values, and beliefs" (Schriner, 2007, p.146). Values and beliefs establish the attitude and behaviour of people with an aim to "provide basis for decision making" (Poorchangizi et al., 2019, p.26). In the nursing field, professional values help establish the standards and framework for evaluating performance (Weis & Schank, 2009; Moyo et al., 2016), and these attributes are related to how clinical skills education is being delivered. Chai Ho (APN02: Interview, 2020), an advanced practice nurse working in a paediatric renal unit of a public hospital for over 10 years and is responsible for taking care of paediatric patients coming in or out for renal dialysis, explained why she refused to allow students to perform some procedures:

Lines	Identifier	Extract
129 130 131 132 133 134	APN02	… In nephrology, we do … just now we said er … kidney transplant, peritoneal dialysis and haemodialysis because these belong to a really particular specialty, so students are not allowed to do them [patients in the related cases]. However, we will conduct demonstrations and explanations to let them [students] understand more because they might not have the chance to do these elsewhere …

The above extract highlights the professional value of Chai Ho in her daily work and her underlying virtue to *do the sick no harm*, which she took from Mother of Nursing - Florence Nightingale (Nightingale, 1863, preface). Ensuring the safety of patients is paramount in nursing. This value is congruent with the mission statement of the Nursing Council of Hong Kong, which prescribes to ensure the quality of nursing practice as a professional value of nurses in clinical practice (NCHK, 2010). Maintaining one's professional value and providing opportunities for students to practice their skills present a dilemma that needs to be faced by clinical members when engaging in clinical skills education.

The following extract from the nursing student, Haco (NS04: Interview, 2020) describes how his nursing value influences his attitude towards his patients and highlights a gap in his practice:

Lines	Identifier	Extract
75 76 77 78 79 80 81 82 83 84	NS04	… Probably because at school, in training, we have a simulated skills laboratory, and the environment is probably cleaner and tidier, and what you're facing isn't a real living patient but a dummy. So regarding the practice aspect, it's just different. When you're in school, you're performing a nursing skill, so let's say you got it wrong the first time, you can just try again, and try it differently, so if you didn't do well the first time, you can just improve or see if other students or teachers can give you some ideas so you can perform better next time. But when you're in a real clinical setting, you can't take the patient… a ... life, or someone's body to test things. You can't hurt them, you can't be unprepared because it may do harm to patients …

Similar to Chai Ho, the extract from Haco also contains the *do no harm* value (Nightingale, 1863). Recognising the gap between the practice in the skills laboratory at school and in the clinical environment, Haco attempts to apply the practice he learned from the school laboratory to an actual clinical environment. He demonstrates his value by equipping himself with professional skills. My interview with Haco made me more understand why he always lacked confidence in demonstrating his skills. This hesitation may be ascribed to his worries about hurting his patients due to his incompetency, hence influencing his confidence and attitudes towards skills practice.

Nursing has been regarded as the art of caring (Carvalho & Brito, 2017). However, this caring notion is reliant on the value of the perspective of each practitioner (Moyo et al., 2016). In the focus group, nurse teacher Lang (L: Focus Group Part I, 2020, Lines: 8-18) criticised the busy environment and heavy workload can influence the value in skills education, making the learning become task oriented. The value of education can be affected by the people who the learners interact with (see Section 4.3.1.1.5). I recall when I was a nursing student, I had a conversation with a clinical nurse. The nurse shared her value on a nurse's attitude to me. The value contained three Es, namely, efficient, effective and economic and she thought the three "Es" should be the standard of a professional nurse - to act effectively and efficiently with limited clinical resources. This is a very high requirement of nursing performance and her words deeply influenced my values, beliefs and professional attitudes. It shows how values, beliefs and attitudes are interrelated, and it can affect a student's learning attitude (Kaufman & McCaughan, 2013).

The personal, professional values and beliefs of healthcare practitioners influence their decisions in patient care (Moyo et al., 2016; Schwartz, 1992) and skills education (see Chai Ho's extract). According to Harry (NS02, nursing student: Interview, 2020, Lines: 100-101), "…During my practicum, I can just always follow the routines, and that consumes a lot of time". Harry was worried, "with overwhelming workload, sometimes you may feel sorry to disturb the clinical nurses for their extra attention, and they do not have much time and patience to teach you as well" (Lines: 102-106). Many nurses think that the completion of daily routines and fulfillment of their traditional roles are the basic responsibilities of a nurse, and such perspective affects the skills education of nursing students. According to Holla (CN02, clinical nurse: Interview, 2020, Lines: 230), "they [mentors] don't have time to teach them [students]" because "they [mentors] are the ward manpower … they themselves are the ICs (in-charge) of their own cubicles" (Lines: 231-233).

The establishment of the values, beliefs and attitudes of nursing students is affected by the role modelling of all nurse members in a clinical place (Poorchangizi et al., 2019). Learners socialise and learn how to be professionals by watching how people in their workplace go about their work (Hughes & Quinn, 2013). By acting as effective role models, nurse teachers, mentors and other clinical staff can enhance the caring ethos amongst learners. When clinical nurses place great value on nursing care, acknowledge the students' work and demonstrate an

encouraging attitude, they at the same time greatly strengthen the effectiveness and interactiveness of clinical skills education.

The value of clinical skills education is constantly changing (Poorchangizi et al., 2019), and keeping one's values, beliefs, and attitudes unchanged is difficult. Vygotsky (1978) emphasised the importance of suitable cultural tools in exercising the higher-order mental processes of learners, such as their reasoning and problem-solving capability, that can help them master their skills, use their cognitive thinking, and transform themselves into a higher level. As nurse educators, individuals need to use transformed cultural tools (e.g., new technology instruments) to prepare the next batch of nurses for the health system of Hong Kong. The utilisation of innovative learning tools presents a new direction for nursing education. The current clinical nursing education in Hong Kong tends to be mobile, fluid and fast paced, and the adoption of technologies can break the boundaries in students' learning (Wong et al., 2021). Rather than staying in classrooms, students can attend online classes, watch YouTube tutorials, learn from social media, all of which are free from time and space limitations. This phenomenon reflects how the value of nursing education in skills teaching, and learning has changed and is changing.

Today, nursing education in Hong Kong is at a crossroad. Whilst a host of related activities associated with dramatic shifts in health services are present, nurses have begun to adopt new roles, such as facilitating access, interpreting information, providing advice, and guiding their patients in choosing amongst a wide range of complex health therapeutic choices (NCHK, 2012). Clinical skills education is no longer dominated by demonstrating basic skills; the introduction of technologies and new learning modes has pushed the values and beliefs of clinical education from psychomotor based to a higher cognitive level for utilising the skills in a clinical procedure (Wong et al., 2021). Along with the changing character and content of clinical practice, the values, beliefs, and attitudes of nursing practitioners are being adjusted to fit the expected changes in the coming decades.

5.3.3.2 Sub-overarching theme 3.2: Rituals and gaps in practice

Another predominant sociocultural source that affects clinical skills education is "rituals", which represents the traditional practice or thinking (Walsh & Ford, 1991). Some interview participants, for example student Harry criticised that traditional nursing practices sometimes have a "pejorative sense and linked to unthinking, routinised action" (Philpin, 2002, p.144),

which affects the quality of their skills education. Rituals have been closely related to another concept which is the gap between theory and practice (Wolf, 2014), as illustrated in the findings from the interviews, focus group and my participant observation in the research diary. The following discussion highlights how this cultural element affects the higher cognitive and psychomotor skills development of students.

A ritual refers to "any regular pattern of interaction" (Abercrombie et al, 2006, p.332) or "a routine method" (ibid.) of daily practice. According to Panda and Gupta (2001, p.11), "rituals, like other symbols, play a powerful, vital, and complex role in the life of any group or organisation" and which "reflect and express an organisational culture – the pattern of beliefs, values, practices and artifacts that define for its members". In the nursing profession, rituals refer to maintaining the traditional practice (Wolf, 2014; Heale, 2020). Walsh (1991, p.14) contrasted the concept to that of "professional practice" and argued that "it refers to tradition and as long as nursing practice consists of traditions based on myths it will be ritualistic and unprofessional". Lui (APN01: Interview, 2020), an advanced practice nurse working in a convalescent hospital, shared her insight into the ritual practice of everyday nursing practice as she experienced it:

Lines	Identifier	Extract
32	APN01	… When we teach students basic nursing skills theoretically, for example
33		bathing the patients, we will teach them how to clean a patient from the head
34		down to the feet thoroughly. Perhaps for the nursing student, they will need
35		around an hour to bathe a patient. However, in reality, we need to bathe 12
36		patients in a single hour every morning at the same time. Besides, there are
37		many unexpected issues to deal with, such as doctors doing their rounds and
38		some patients needing to be transferred to the physiotherapy department. The
39		actual situation is very urgent, so nurses need to work fast…

Lui complained about a dilemma in conducting clinical supervision in the ward. Given the time and staff shortage in practice, Lui was facing difficulties in practising the skills she learned in the school skills laboratory and even pointed towards a gap in practice, such as nursing students spending "around an hour" (Line: 35) to complete a single bed bath procedure even if they are expected to "bathe 12 patients in an hour" (Lines: 35-36). This gap explains why students may face a "reality shock" (Line: 147) upon stepping in the practicum site.

From the literature review of Chapter 2, several studies refer to nursing rituals as routinised and organised nursing care that usually involves menial or outmoded tasks. However, these

rituals take up much of the students' time during their practicum (Walsh, 1991), thereby reducing their opportunities to practise what they have learned. During their practicum, students tend to follow the instructions of their senior nurses or carry out routine ward practice. According to Harry (NS02, nursing student: Interview, 2020, Lines: 100-101), "…during my practicum, I can just always follow the routines, and that consumes a lot of time. I have no time to learn more things…". Likewise, in the focus group interview, Suet (S, clinical nurse: Focus Group Part II, 2020, Lines: 645-646) shared, "…sometimes, you can see that the students are doing routine work for so long and do not follow up on the patients' records…"

In her book *Exploring Rituals in Nursing*, Wolf (2014) suggests that nursing practitioners should update their social and professional views towards traditional ritual practice, which also provides us with a new perspective towards clinical skills education. Wolf (1988, 2014) mentions two rituals, namely, therapeutic and occupational rituals, of which the former involves symbolic healing actions that improve the patients' condition whereas the latter (also called rituals of socialisation) involves symbolic actions that facilitate the transition of novices into professionals. Some nursing procedures as Wolf (2014) classified are occupational nursing rituals, including the handover shift activity reports. Facing the dilemma between the ritualised practice and learning needs, the condition should come into concern.

Vygotsky's SCT (1978) posits that a novice can achieve more if guided by a more knowledgeable other in his/her learning process. In a clinical environment, a more knowledgeable other may be a clinical mentor, teacher or a clinical nurse who guides students in their skills learning. Given their important roles, the quality or readiness of these more knowledgeable others comes into question. How do these persons perceive the presence of rituals and how do they deal with the gaps in practice when providing skills education to students? Reflecting back, experience tells me that traditional senior nurses show resistance when faced with changes and tend to comply with old rules, practices and routines. As more knowledgeable others, their working practice and advice can directly affect the learners' conception in the process of socialisation, as such, more knowledgeable others with different qualities may lead to various knowledge and skills outcomes from students.

Ritualised practice affects the clinical skills education of students. If more knowledgeable others fail to update themselves and modify their own practice, then the outmoded ritualised

practice will perpetuate questionable practice, and the nursing procedures being taught to students may become obsolete. As a nurse teacher, I find myself agreeing with Crawford and Johnson (2012) regarding the role of nurses in maintaining or breaking rituals: “What’s important is that nurses are asking questions. As nurses, we must continuously question why we do what we do in our nursing care and not be caught up in past practices and unfounded fears” (p.25). To eliminate the gap between theory and practice in the presence of rituals, practitioners could be consider to reduce cognitive dissonance and deliver evidence-based quality care that requires higher cognitive thinking skills.

5.3.4 Overarching theme 4: Skills-teaching-related sources

I generated the fourth overarching theme, “Skills-teaching-related sources”, based on the comments of the participants regarding how some teaching strategies can affect the clinical skills education of nursing students. In Hong Kong, nursing students are required to interact with different types of people in the clinical environment, including their peers, clinical nurses, mentoring staff, and specialists from other healthcare disciplines. Students need to interact and internalise to transform their learnt information into self-knowledge. Skills-teaching-related sources have two sub-overarching themes, namely, “social interaction and collaborative learning” and “scaffolding and zone of proximal development in clinical skills education”. Vygotsky’s SCT (1978) helps in understanding the importance of providing students with sufficient learning opportunities, facilitating their development of learning strategies and utilising appropriate cultural tools for mediation of learning.

5.3.4.1 Sub-overarching theme 4.1: Social interaction and collaborative learning

As mentioned in Chapter 4, a total of 69 codes were generated under the “Acquisition through social interaction” (i.e., theme 4 of interview data). These codes pertain to the different ways students interact with various parties, such as clinical nurses, nurse teachers, managers, peers, patients and significant others. Social interactions may take place when these students encounter clinical nurses and managers or receive encouragement or advice when performing nursing care activities. The comments of the participants in the interview highlighted the importance of social interaction and its effect on the skills learning of students.

In the following extract, Kate (NS01, nursing student: Interview, 2020) recalled her experiences in a male surgical ward where she attempted to dress a traumatised wound and received guidance and support from a clinical nurse through social interaction. In this example, the clinical nurse supervising Kate's performance represents the more knowledgeable other, whose support gave Kate enough confidence to complete the procedure.

Lines	Identifier	Extract
167	NS01	… There was a ward where a male clinical nurse gave me a clinical
168		assignment ... I asked, 'Sir, won't you watch me while I perform the wound
169		dressing?' I remember him saying, 'It is fine! You can cleanse on your own,
170		you are year 2 already, you are going to graduate into an enrolled nurse. It is
171		fine! Put some effort on it and do it with confidence! You need to do this
172		yourself in the future!'…

The verbal instruction from this clinical nurse can be regarded as a symbolic cultural tool (Vygotsky, 1978) that provided new knowledge from which Kate developed, arguably, her higher-order mental process, reasoning skills and problem-solving ability.

Lines	Identifier	Extract
172	NS01	… I reported to him (the male clinical nurse) after cleansing the wound, and he
173		asked me how I felt afterwards. I said, 'I was a bit afraid, there was so much
174		blood. Blood was coming out whilst I was cleansing'. Then he said, 'Actually,
175		you have helped the patient'. I said, 'What, why?' He responded, 'You helped
176		him by cleansing. You saw blood was coming out. Actually, a bleeding finger
177		can be reattached. On the contrary, if the finger was not bleeding, it would
178		mean that the finger tissue was dead. Maybe there was a chance … if you
179		reported this phenomenon to me, I would tell the doctor, and the doctor would
180		judge whether the finger can be reattached. If it was not bleeding, maybe the
181		doctor would … make another decision, like cutting the patients' finger off'.
182		This was a memorable learning experience for me. I never forgot and I kept
183		thinking about it a lot after the incident …

Vygotsky (1978) argued that social interaction is critical to the learner's cognitive development and considered this concept as a foundation of learning that precedes knowledge and ability development. In the above situation, Kate developed her consciousness, notions of self and identity, physical skills and mental abilities through her social interactions with others (Vygotsky, 1978). According to Vygotsky (1978, p.128), "every function in the child (learner)'s cultural development appears twice, on two levels; first, between people as an interpsychological category, and then inside the child (learner), as an intrapsychological category", which is how internalisation takes place. He also emphasised that social function and the corresponding mental function are not the same. Internalisation is a process of transformation that involves appropriation and reconstruction, which require active

engagement from the learner (Vygotsky, 1978). On this basis, Vygotsky proposed that all knowledge and ability are generated from a social activity; hence, all learning is co-constructed in collaborative work (Palincsar, 2005).

Vygotsky (1978) emphasised a close relationship between social interaction and learning and argued that the locus of understanding is formulated in the external world and that cognition originates from the external world before becoming part of one's mental structure (Phan, 2012). This conception demonstrates the importance of interaction in clinical skills education. In the clinical environment, the instruction or teaching tools from a more knowledgeable other are critical to one's learning. Vygotsky mentioned that the appropriate use of cultural tools (e.g., language), other material tools and artefacts can shape students' learning, hence further confirming that learning is contextual and that engagement in social practices is required (Lave & Wenger, 1991; Vygotsky, 1962). These concepts arising from culture can elicit higher-level cognitive thinking from learners (Crain, 2005). Social interactions with different people in the clinical context (especially the more knowledgeable others) can facilitate one's learning potential, but his/her learning progress will also be influenced by his/her own way of growth, which in turn is affected by his/her "cultural value and goals" (Fahami, 2013, p.52) as discussed in Section 5.3.3.1.

In Hong Kong, nursing students can develop their skills through their interactions with others in the social context. This situation agrees with Vygotsky's (1978) emphasis on how interpersonal interaction and learners' cognition can advance through interaction and how one's learning progress is largely based on his/her personal discoveries and active exploration (Mahn, 1999). Supported by previous studies (Sanders & Welk, 2005; Jones & Brader-Araje, 2002), Vygotsky's SCT (1978) highlights the role of knowledge construction in the interplay between learners and others, such that a higher-order learning process requires an interdependence between the individual and his/her environment (Vygotsky, 1978). As discussed in Section 5.3.1.1 and 5.3.1.2, the availability of a conducive learning atmosphere and adequate learning opportunities has a defining role in the learning process of nursing students. In the actual situation, clinical wards serve as small communities with a distinctive set of workplace values and beliefs (Schein, 2004), which may affect the attitudes and the work, teaching and learning practices of learners and more knowledgeable others. If students are placed in an encouraging learning climate, then their skills learning may be driven by extrinsic factors (e.g., enthusiastic clinical staff) through constructive interactions and they

may subsequently demonstrate a higher motivation to learn (Phan, 2012). In clinical skills education, the social (environment) and mental (information and mindset) interactions between the clinical mentor (or nurse teacher) and students promotes the internalisation amongst students, which fosters their active participation in their learning process.

With regard to Vygotsky's (1978) emphasis on how the social interaction with more knowledgeable others can influence the potential development of students, Crain (2005) argued that learners may be unable to discover new things on their own therefore they need the help of adults or more capable peers to develop their minds. Apart from the external influence of social interactions on clinical skills learning, the individualised perceptions and personal beliefs of students also shape their cognitive processes, fuel their desire to build their skills competency and permeate their behaviour and thinking towards achieving their performance goals (Elliot, 1999, Elliot & Thrash, 2001).

Collaborative learning is a pedagogy that highlights the importance of "social interaction", "cognitive co-construction" and "shared knowledge" (Tolsgaard et al., 2016, p.69) and has been widely used in different disciplines (Zhang & Cui, 2018), including nursing education (Zhang & Cui, 2018; Tolsgaard et al., 2016). Students are encouraged to work together to achieve a shared goal, which would require an active social interaction (Slavin, 2018). In the following extract, Apple (A: Focus Group Part I, 2020), an undergraduate nursing student, shared her perspective towards the importance of collaborative learning in clinical skills learning:

Lines	Identifier	Extract
622	A	… I would like to be partnered with a higher ability classmate. Apart
623		from going to placements, I will also take part in TUNS (Temporary
624		Undergraduate Nursing Student). When I started TUNS, it was in year 3,
625		I didn't know anything, but I was partnered with year 4 or 5 students.
626		They actually have a lot of experience even before TUNS, and they
627		shared their knowledge and skills with me. So, I partnered with them
628		whilst working so that they can teach me a lot of things.

Several studies argued that working in pairs to obtain learning gains is better than working alone (Wulf et al., 2010). Derived from the concept of collaborative learning, team-based learning generates similar positive effects (Parmelee et al., 2012). In complex clinical skills education, the execution of collaborative learning involves the application of strategies related to how information is processed, encoded, retrieved and restructured during

interactions with others (Tolsgaard et al., 2016). Learners benefit from observing others, which would allow them to reproduce or imitate the actions of their peers. Through social interactions, these students will carry out on their own what they observed from others, it can be shown from Kitty in the focus group interview (see Section 4.3.2.1.1.3) which can help them avoid the same errors in their subsequent practice. In the following extract, Haco (NS04, nursing student: Interview, 2020) recalled how he learnt a certain clinical procedure during his clinical skills education:

Lines	Identifier	Extract
234	NS04	… The nurse teacher will give us clinical assignments, such as taking h'stix
235		for one or two cubicles, maybe vital signs taking or a few special procedures.
236		In the first week, all of us will try different procedures. For example, in
237		inserting a urinary catheter, everyone can observe the performance of their
238		groupmates and offer their assistance in between in front of everyone in the
239		group, and then the teacher will guide and correct the skills of each
240		groupmate. All students learn from each other by observing their [peers']
241		performance and then receiving feedback from one another.

The above extract illustrates how Haco learned through social interaction by exchanging feedback from his peers and receiving feedback from his teacher. Although Vygotsky (1978) stressed that learning from more knowledgeable others or persons with higher abilities is more beneficial, from my experience, the learning of students is not limited to their interactions with more capable persons. Interacting with others having the same or even limited levels of experience can also inspire the learning process of these learners. According to Walqui (2006), when performing constructive activities, learners actively build mental models of the to-be-learned information, which would help them integrate new knowledge into their existing knowledge. Interactive activities involve the co-construction of knowledge and skills that allow learners to incorporate the contributions of their peers into their own mental representations of complex problems (Carey et al., 2018). Activities that engage learners in repeated learning can help these learners encode new information and build their information-processing capacity (Goldin-Meadow & Beilock, 2010).

The focus group participants raised their concerns regarding the "group mix" or "partner match" practice. Specifically, they believed that having a group mix will stimulate them to think deeply and interact with others more often. Whilst the student participants expressed their eagerness to work with and learn from more knowledgeable others, the extent to which they can achieve a co-construction of knowledge remains debated. According to

Ladyshewsky (2000) and King (1997), without pairing students according to their level, peer learning may easily become simply didactic tutoring. Therefore, cognitive congruence (Olaussen et al., 2016, p.2) is vital to this cultural practice. Pairing students to build their cognitive knowledge and skills therefore warrants further consideration (Cate & Durning, 2007).

5.3.4.2 Sub-overarching theme 4.2: Scaffolding in the zone of proximal development

An important sociocultural element in relation to clinical skills education is the teaching strategy adopted by mentoring personnel. The mentoring participants described how they used the scaffolding strategy to develop students' potential in their zone of proximal development (Vygotsky, 1978). Vygotsky (1978, p.86) defined this zone as "the distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more knowledgeable others". In other words, Vygotsky (1978) perceived the zone of proximal development as a dynamic concept based on the conception that learning is not static and involves the learners' cognitive development through constant social interaction with their outside environment. Scaffolding from the mentoring personnel plays an important role in this process. I clustered the participants' responses related to how the scaffolding by capable people can develop the potential of learners and contribute to their development.

The concept of scaffolding stems from Vygotsky's SCT (1978), which posits that learners can learn highly complex skills if suitable scaffolding is provided. This scaffold should be gradually removed as learners improve their skills competence, which would also help them improve their problem-solving skills and ability to work independently (Vygotsky, 1978). In the focus group interview, Yun (Y, nurse teacher: Focus Group Part II, 2020) described a case where she offered scaffolding to a nursing student as detailed in the following extract:

Lines	Identifier	Extract
20 21 22 23 24 25 26 27	Y	… I'll tell them actually there's a liability towards the patient, that means er … you [students] need to be responsible for them [patients], so what you learn and what you do, why we need to do things this way. I hope they [students] understand why we need to do every step in a certain way, they will learn that by heart and do it. Actually what's my purpose, only then could they … like no matter if I tell them to practice the same skill for 10 times, if they don't know why we need to do it this way, then they won't know what to do in the next step, so … I think that it's

28 29 30	important to let the students know when they are facing the patient, towards the procedure they have a liability there …

Whilst providing clinical teaching to the students at the bedside, Yun mentioned she took the opportunity to teach her students about the importance of professional liability in nursing. Yun hoped that her students can generalise this professional value of "liability" to other clinical procedures and work on this concept independently (Lines: 28-29). According to Sanders and Welk (2005, p.203), modelling is one of the nursing teaching strategies from Vygotsky's scaffolding skills that involves the "verbal or non-verbal behaviours that students can imitate". Tharp (1993) identified several types of teaching that can help learners develop their independent capability, including modelling. In the above example, Yun served as the more knowledgeable other for her students.

Elsie (E, advanced practice nurse: Focus Group Part I, 2020) argued that the scaffold must be removed in time to allow the students to grow by themselves. In the following extract, she described how students move from the "honeymoon period" to reality:

Lines	Identifier	Extract
103 104 105 106 107 108 109 110 111	E	… Actually, when you just started in the ward, that's your honeymoon period. At that stage, people won't expect you to know much, so they'll keep on telling you things. But if you don't have any foundation or study before going to lessons, you won't be able to learn much. So we tell students that it's best for them to read on related things or at least know which types of cases are there in the ward so they'll be able to learn more. So now if we only ask them to take BP, actually we use a machine for BP, later they must know what level to observe and understand what they can observe …

In the above extract, the "honeymoon period" refers to a period where learners face less pressures in their learning and show some potential to grow. Linking to the earlier discussion, learners' cognition can be developed through social interaction and scaffolding, which requires the help of more knowledgeable others to expand the potential of these learners and improve their skills level (Vygotsky, 1978). Vygotsky (1978) argued that the construction of knowledge involves an interplay between the learner and others, whereas the higher-order learning process requires an interdependence between the individual and his/her environment (Sanders & Welk, 2005; Jones & Brader-Araje, 2002). In clinical skills education, the social and mental interaction between students and others can foster the former's active participation in the learning process and promote their internalisation. In this regard, Elsie

emphasised that students should take up an active role and show responsibility to learn and become independent as soon as their "honeymoon period" ends.

However, in the busy and stretched clinical environment of Hong Kong, applying assisted learning strategies (Chan, 2019) to support the higher cognitive learning of students (Spouse, 1998; Sanders & Welk, 2005; Dunphy & Dunphy, 2003), including critical thinking ability (Chan, 2019), may present a challenge. Some focus group participants highlighted the presence of clinical routinised practice and a gap between theory and practice. In the following extract, Lang (L, nurse teacher: Focus Group Part II, 2020) explained how she used a questioning strategy to exercise the critical thinking ability of her students and how she made use of higher mental cognitive activities in clinical skills learning:

Lines	Identifier	Extract
78	L	… they [students] always ask … what should the next step be … it
79		should be this, so I'll ask them why you need to do this, why you say the
80		skills should be like that? Like when they're doing Ryle's Tube insertion,
81		they'll ask me why they have to stick so much tapes on it. I'll then ask
82		why not … if I just stick one piece of tape on the face, what's the
83		difference if I do not stick any tape?

Lang developed a structured questioning framework to guide the cognitive thinking of her students and to allow them to share their insights (Karimi et al., 2017). Apart from Lang, Elsie (E, advanced practice nurse: Focus Group Part II, 2020) suggested that reflective diary writing can promote students' self-reflection and internalisation (Vygotsky, 1978):

Lines	Identifier	Extract
185	E	… If you want to internalise, it's better to have reflective learning. I don't
186		know if you [participants in the focus group] still write diaries these days or
187		not. In the old days, the priest taught us about reading the Bible. We should
188		copy the content down when we have the time and think. Soon you'll be able
189		to understand it. If you write it down, you'll also be able to remember …

Elsie used writing notes after reading the bible as an analogy in her conversation to keeping a reflective diary after learning. She argued that writing a diary promotes students' self-reflection and internalisation. Reflection is regarded as the "cornerstone of learning from experience with integration of knowledge and practice" (Karimi et al., 2017, p.5191), and can be considered a tool for developing a person's self-understanding, internal thinking and cognitive activity (Craft, 2005; Bjerkvik & Hilli, 2019). Vygotsky (1997, p.106) defined internalisation as a process of "transformation" rather than "transmission" of knowledge; the

difference between “transformation” and “transmission” mainly lies in the active adjustment and reconstruction by learners (Walqui, 2006). The above extracts improve understanding of the assisted learning strategies employed in local clinical education. Vygotsky (1997) commented, “Every higher mental function was external because it was social before it became an internal, strictly mental function; it was formerly a social relation of two people” (p.105). To elaborate Vygotsky’s idea (1978), self-reflection can act as a way to change an individual perspective after the internalisation takes place (Gillespie, 2012) and where the social interaction is underpinning for the whole process.

The concept of zone of proximal development and assisted performance scaffolding strategies have been validated in relation to their outcomes in several disciplines (Dunphy & Dunphy, 2003; Sanders & Welk, 2005; Olaussen et al., 2016). In clinical skills education, providing feedback during skills performance arouses the attention of learners towards the detailed account of processes, develops the higher-order teaching skills and knowledge of teachers and eventually augments the knowledge outcomes of learners (Olaussen et al., 2016). Practically, mentors or clinical nurses may not have an explicit understanding of either the scaffolding or zone of proximal development of each learner, thereby preventing them from assessing the inner or outer zone boundaries of their learners accurately and their need for scaffolding support. They need to understand how much support is required from them by their learners and when they should start gradually removing the scaffold to allow these learners to become independent. This assessment provides an important basis for mentoring personnel to understand their students’ needs for supplementary sessions to improve their skills competency and help them cross barriers in their learning and development.

Vygotsky (1978) used an analogy to explain how the zone of proximal development defines those functions that have not yet matured but are in the process of maturation. He referred to these functions as “buds” or “flowers” of development rather than “fruits” of development (Vygotsky, 1978, p.86). According to this analogy, students’ successful transformation and skills development require their active participation and engagement in the zone of proximal development in addition to the scaffolding provided by more knowledgeable others. In the following extract, Apple (A, nursing student: Focus Group Part I, 2020) shared her perspective on why students may not have an active attitude towards learning in the zone of proximal development:

Lines	Identifier	Extract
236	A	… It really depends on the student to … whether they're willing to learn,
237		some students might think that I've already done the routine … Being able
238		to do the routines and that's enough, but some might have higher
239		expectations of themselves, perhaps they might want to … learn more in
240		the ward …

Apple pointed out that students' motivation in the zone of proximal development is a significant factor that affects the growth of their skills and their higher cognitive mental process advancement. Another nursing student, Harry (NS02: Interview, 2020), described how stress affected his motivation to learn during his practicum in the following extract:

Lines	Identifier	Extract
157	NS02	… I was not able to sleep and kept thinking about clinical issues. It's so
158		serious, especially during the practicum. During the practicum, I kept
159		thinking about my work even when I got off work. At first, I slept on my
160		bed, and then I might go to sleep on the couch to make sure I was in alert
161		mode …

By partnering with students in their learning process, mentoring personnel can monitor their learning curve and optimise their growth. Different scaffolding activities (Tharp, 1993) positively contribute to the learning process, and by appropriately diminishing and removing the scaffold, students grow up to become independent. The experiences shared by the interview and focus group participants highlighted those factors in the sociocultural context that may affect the skills development of learners. In addition, they are also some of my observations and reflections from my research diary entries in my visit and teaching.

5.4 Summary

This chapter presented an analysis and discussion of the findings. It offered a response to the research questions, I resynthesised these findings and generated four overarching themes and eight sub-overarching themes that cover the main sociocultural sources of the case issue, including the environment, human, cultural and skills education areas. These findings provide valuable inputs that highlight the significance of sociocultural sources in the clinical learning environment and help to develop a new perspective to study the case topic. From the social constructionist epistemological stance, the co-construction of knowledge also involves input from my more than 30 years of clinical experience. Apart from creating a clear picture of the actual local clinical situation in Hong Kong, these findings provide an important platform for further discussion of how clinical skills education can be improved.

Chapter 6: Conclusion

6.1 Introduction

This case study aimed to explore the challenges in clinical nursing skills education with a particular focus on sociocultural factors of the clinical environment that influence nursing skills teaching and learning in a local context. Interview and focus group participants from four designated categories of the nursing field were purposely recruited for the data collection and their opinions provided valuable perspectives for answering the research questions. My research diary containing my participant observation on the clinical visit and skills laboratory teaching recorded personal reflections and the special encounters on the case issue further supported my analysis.

The previous chapter analysed the meanings of the collected data and the major overarching themes discussed in Chapter 4. Thematic analysis, using the work of Braun and Clarke (2013), was employed to define the patterns of meaning inherent in these data, and a framework was developed to achieve a comprehensive understanding of the topic of interest. This concluding chapter is divided into the following sections: an outline of its conclusive findings in relation to each of the research questions, implications, the study's strengths and unique contributions, its limitations and the challenges faced. I narrate my reflections having traversed this research journey amidst the difficulties brought upon by the COVID-19 pandemic, my self-expression and the impact affecting my own practice and clinical teaching work in hospital. I also suggest some directions for future research.

6.2 Key findings in relation to each of the research questions

Briefly, the key findings in relation to each of the research questions of this case study are summarized as follows:

Research question 1: What are the sociocultural sources in the local clinical setting that affect the development of nursing students' clinical nursing skills?

In summary, the findings showed that the sociocultural sources of the local clinical setting derived from four aspects, these being: environment-related sources, human-related sources,

culture-related sources and, skills-teaching-related sources. Each source contained two main areas requiring further details. The content is summarized below.

First, in relation to the environment-related sources, there contained two main areas: "clinical learning context" and "learning opportunities" which demonstrated significance in conducting clinical nursing skills education. Findings showed that the preparedness of "clinical learning context" is crucial in which the physical setting, environmental infrastructure, supportiveness of the overall atmosphere and sufficiency of the staffing are influencing the readiness of the clinical environment to be a teaching place. Findings particularly highlighted "learning opportunities" which should concern the amount and appropriateness of the learning assignment and specified learning opportunities should not only aim for "practising" but should show more concern for "building", that is the chance for students to advance their skills to higher-order learning.

Second, under the human-related sources, two important concerns were identified, these are: "support from the management" and "interplay with the clinical staff". Findings concluded that the management personnel played an important supervisory role that involved the authority to arrange the resources and mentoring programme, besides, they are central people in the clinical setting, cultivating the value of education and being pivotal to the whole training. On the other hand, clinical staff inside the learning environment maintain constant social interaction with nursing students and this active knowledge and skills interchange is crucial and impacts on the clinical skills education procedure.

Third, the culture-related sources entailed two elements: "values, beliefs and attitudes" and "rituals and gaps in practice". Findings corroborated that "values, beliefs and attitudes", are regarded as the cornerstone of nursing training as they not only indicate the attributes of the place (i.e. ward) and population (i.e. nursing students), but specifically indicate the virtues of nursing education and clinical practice, therefore this should be emphasized and consolidated. Findings also pointed to "rituals" alongside the concept of "gaps in practice"; this signifies the traditional and routinised actions that may widen the theory and practice gap, and which, ultimately, may impede the learners' transformation of higher order thinking in clinical nursing skills education.

Fourth, the skills-teaching-related sources comprised of two key ideas: "social interaction and collaborative learning" and "scaffolding in the zone of proximal development". These two ideas were derived from Vygotsky's Sociocultural Theory (1978). Findings in relation to "social interaction and collaborative learning" indicated that the learning process occurred spontaneously through learners' and mentors' knowledge and skills exchange and through working together among peers and the surrounding people (i.e., clinical staff). Findings also revealed the importance of mentoring on providing appropriate "scaffolding" and assisting the learners to pass through the "zone of proximal development" to develop their understanding and potential.

Research question 2: How do the existing sociocultural sources in the local clinical setting affect the development of nursing students' clinical nursing skills?

Four sociocultural sources were identified. To begin with, it should be emphasised that the premise for these four sociocultural sources are *interrelated* and *inter-influenced* in the clinical nursing skills education. *First*, the clinical environment is a place for both the nursing students and teachers (mentors) to engage in the dynamic process of teaching and learning, however, it is also a place providing the actual services to the society. While the clinical environment copes with the overstretched situation to accommodate the escalating demands of society, it at the same time will increase the barriers for effective clinical education. This explains why the limitation of "environment-related sources" interferes with the students' acquisition of sufficient and appropriate learning opportunities in the context and impact on the teaching and learning outcome. *Second*, findings indicate that the daily interplay among staff, enable the maintenance of constant interaction, flowing and exchanging thoughts and knowledge with the learners. Among these staff, the role of managerial personnel is most pivotal because, since s/he acts as the leader, their responses and behaviour to clinical nursing skills education are influential to the overall training planning and arrangement. *Third*, findings explained that the cultural elements in the clinical place have affected the people's mindset and performance attitudes. The presence of nursing rituals and theory practice gaps are closely related to the values, beliefs, or norms of people working in the clinical place and they, at the same time, will impact on the overall learning environment. *Last*, the "skills-teaching-related sources" embodied Vygotsky's Sociocultural Theory (1978) and it informed how the clinical nursing skills education could be affected by students' social interaction and collaborative learning. Findings conveyed an important message on how MKO's scaffolding,

and support helps the students move beyond their ZPD to become independent problem solvers. Interestingly, the findings also pointed out that MKO was not the only source of students' learning. On occasion, some students were able to gain understanding by interacting with their peers who appeared to have less knowledge, but through the dynamic social cultural context came to understand that they were able to learn from each other.

Research question 3: To what extent do the cultural elements in the clinical environment influence the cognitive thinking of nursing students through the transforming process into higher level and eventually affect their mastery of clinical nursing skills?

In the clinical environment, the cultural elements comprise of people's values, beliefs, norms, attitudes and rituals. All of these have played a significant role in influencing nursing students' learning attitude and their cognitive thinking. These cultural elements are influenced by their different social origins and historical background and have informed their behaviours and daily interactions. Findings demonstrated that the negative values and attitudes as well as those traditional nursing rituals could be detrimental. Findings also stressed that reflective practice and critical thinking supports the students' cognitive thinking and skills transformation from lower to higher order, and which favour the mastery of nursing students' clinical nursing skills.

Research question 4: How does the social interaction between nursing students and other professional parties in the clinical environment affect the teaching and learning process in clinical nursing skills education?

Social interaction in Vygotsky's Sociocultural Theory (1978) emphasized the importance of learning within a social context which influences social development. During clinical education, a student is regarded as the key actor positioned in the "centre" of the clinical context. They are experiencing the dynamic social interaction with nursing and non-nursing clinical staff. These clinical staff, possessing varied backgrounds, educational level, cultural and historical origins, through their social interactions, their cultural values, beliefs, norms and practices, influence the learners and the professional socialization which takes place. Socialization as mentioned in Section 5.3.2.2 is a process which shapes learners, which enables them to adjust, and adapt to the social cultural context of the nursing role. This has an

implication for the future of nursing education. In this study, some learner participants shared their experience with how the social interaction brought along the favourable and unfavourable influences on their practice, affecting their esteem, confidence, momentum, and attitude in clinical learning. The findings of this study confirm that effective social interaction and collaborative learning can benefit and contribute substantially to clinical nursing skills education.

6.3 Implications of this study

As a nurse teacher, I believe that this case study provides a unique insight and offers different stakeholders valuable understandings regarding the clinical skills education of pre-qualified nurse learners in Hong Kong. It contributes to their recognition of what they are, how the sociocultural sources of the clinical learning environment influence the nursing skills teaching and learning, and subsequently shape the competency of nursing students at the time of their practicum. The findings also highlight how specific cultural elements in such environments can influence students' cognitive and skills advancement and on how social interaction and scaffolding strategies contribute to the development of these learners' potential. The implications of this study are in two aspects: nursing profession and society.

6.3.1 Implications for the nursing profession

The World Health Organisation had declared 2020 as the "International Year of the Nurse and the Midwife" (World Health Organisation, 2020a). In the State of the World's Nursing Report 2020, one important agenda was to "invest in the massive accelerated of nursing education – faculty, infrastructure and students – to address global needs, meet domestic demand" (World Health Organisation, 2020c, p.vii). This agenda highlights an increasing emphasis on the education of both the students and mentoring personnel. Clinical skills education is a fundamental part of nursing education (Nightingale, 2007; Hughes & Quinn, 2013) in which clinical practicum has a significant part in the training syllabus for developing the essential clinical skills competency of students (NCHK, 2012). Stakeholders in the nursing profession, whether working in a clinical setting or in educational institutions, can gain valuable insights from this study regarding the different sociocultural factors in the local clinical learning environment that influence the skills education outcomes of students. These findings are also congruent with those of other studies (Jessee, 2016; Flott & Linden, 2016). Whilst healthcare simulation training has been organised to enhance education efficacy

(Wong et al., 2021), the findings of this study critique the conventional thought and draw the concern towards the peripheral sociocultural sources of the clinical learning environment.

Each of the student participants had distinct individual needs in clinical skills education and regarded the support from the local clinical context as a determining factor in their effective learning. This finding is congruent with that of Ip and Chan (2005), who included "individualisation" in their CLEI scale (a scale for assessing the nursing students' perceptions towards the social climate of their local clinical learning environment) and brings out a key point in understanding students' individual needs and offers some helpful solutions. In busy and task-oriented clinical environments, mentoring personnel face some challenges that prevent them from satisfying these individual needs. The student participants expressed their desire to have more learning opportunities that match their respective levels and mentioned that the presence of some ritualised tasks and gaps in practice can impede their critical thinking development and skills mastery.

This case study drew upon Vygotsky's SCT (1978), which posits that one must "approach environment not with an absolute but a relative yardstick" (Vygotsky, 1994, p.338) and emphasises the non-static state of an environment. Vygotsky's theory highlighted the ever-changing context of the clinical learning environment, the constant social interaction, collaboration, cooperation and interactive exchanges between learners and people within their environment and the scaffolding offered by mentoring personnel in these learners' zone of proximal development. All these sociocultural elements provide novel insights that considered by educators in clinical skills education. Papp et al. (2003, p.267) underlined the difficulty in creating "an optimal clinical learning environment for students" or "clinical surroundings suitable for everyone" and this observation aligns with the findings of Chan and Ip (2007). The current case study therefore can inspire educators to visualise these underlying issues related to the sociocultural aspects of the clinical environment and to guide stakeholders in planning the future direction of nursing education.

6.3.2 Implications for society

Researchers have argued that the current clinical nursing skills education cannot sufficiently prepare students to cope with the increasing demands of society (Pellico et al., 2009; Rudman et al., 2010). Such inadequacy can be ascribed to patients' safety, which nursing practitioners are expected to safeguard (Ewertsson et al., 2015). The COVID-19 pandemic not only

intensified the need to prepare competent nursing staff (including nursing students) but also created additional workload demands for frontline nurses, triggering staff shortages in the healthcare industry and imposed additional pressure on the entire clinical environment (Jackson, 2020). Given that practicum training has a fundamental and indispensable role in developing the clinical skills of nursing professionals (Hughes & Quinn, 2013), the findings of this case study are deemed relevant to the public.

A long-term shortage of manpower in health services (World Health Organisation, 2020b) increases the risk of missed care or even the mortality of patients (Ball et al., 2018). This case study illustrates the high demand in nursing practice, the unsupportive atmosphere from management or clinical staff, the lack of mentoring and the mismatched expectation amongst different parties, all of which, can trigger a "reality shock" amongst nursing students and affect their learning drive in clinical skills training. The inputs of the participants from different nursing categories point towards different concerns and enable an understanding of how the sociocultural factors and cultural elements in the clinical setting affect them. Arguably, acknowledging sociocultural factors would contribute to retaining new generations of nurses and improve clinical nursing skills quality in the coming future.

Therefore, the findings of this research study may not only be limited to the nursing profession but also to the overall human resource asset of society. I agree with Jackson's (2020, p.2043) comment that, "Nurses are the backbone of health systems around the world, and this has never been more apparent than now". Whilst the presence of some traditional cultural elements in the clinical context can hinder the advancement of nursing students, clinical busyness creates a clinical context that is task oriented and less focused on education, hence, ostensibly, impeding the potential of these learners in the zone of proximal development (Vygotsky, 1978). All these sociocultural sources arising from the integrated findings may undermine these students' passion and motivation to learn.

Clinical skills education has faced various challenges in the 21st century, and the practices of yesterday may be insufficient to meet today's increasing demands. The clinical competencies of students are central to today's complex healthcare environments, in which, they gradually go beyond the hands-on skills manoeuvre and place greater emphasis on critical clinical thinking (Mannino & Cotter, 2016). As the students' self-directedness and independence (Papp et al., 2003) also require development, addressing the sociocultural elements and

cultivating an environment conducive to clinical learning could help the students' successful entry in the profession (Jessee, 2016).

6.4 Strengths and unique contributions, limitations and challenges faced

6.4.1 Strengths and unique contributions

The novelties and uniqueness of the current study related to three areas. *First*, this study employed qualitative case study methodology for examining the clinical nursing skills education that has not been previously attempted within the Hong Kong context. *Second*, this study utilized a participant observation approach and a research diary which acknowledged the positionality of the researcher having experience as a clinical practitioner and part of academic community. This professional and personal involvement helps me to gain a unique insight into understanding the challenges in conducting the clinical nursing skills education. *Last*, this study drew upon multiple perspectives from different stakeholders of the field which enabled for a more comprehensive understanding of the issue involved.

To briefly elaborate, this study employed qualitative case study methodology using individual interviews, a focus group interview and participant observation in a clinical visit and skills laboratory teaching. The participants were nursing students, nurse teachers, clinical nurses and managerial nursing staff. It was this wider range of participants that added to the richness of this study. I made use of the advantages of the distinctive features of case study methodology, which emphasizes looking into the uniqueness and particularity of a case phenomenon. Within this approach, I have pursued a frame of interest (i.e., the sociocultural factors and challenges in clinical skills education). I drew upon the data dynamically from these three qualitative data collection methods to obtain more in-depth findings. In addition, since there is limited evidence of local research using a participant observation approach, to me, this was an opportunity to contribute a new and different perspective on clinical nursing skills education. Importantly, I was able to draw upon my own personal and professional experience as a clinical practitioner and nursing educator to this study. I was able to teach and demonstrate clinical skills as a component part of the nursing practicum, from which, I was able to observe and interact with first-year nursing students. I was able to critique and reflect on my observation, understanding and insights using a research diary making notes of this learning environment and the factors that influence students' learning. My unique observation and experience enabled me to identify the gaps on those unexplored or overlooked perspectives, that for me provided a more comprehensive, unique, and novel research insight.

6.4.2 Limitations

Two main limitations are identified in the current study. They include, *first*, the potential power imbalance that exists among participants in the focus group interview and *second*, the case issue may have been influenced by the impact of the COVID-19 pandemic, which occurred during the time of this study.

In this study, first, I aimed to collect the perspectives from different participants and construct a comprehensive understanding of the case phenomenon. I designed a heterogeneous composition of sample groupings for the focus group interview in which this comprised of a mixture of staff from junior levels (i.e., junior nurses, nursing students) to senior levels of experience (i.e., advanced practice nurse or nurse teacher). This grouping design, however, may impose unintended power imbalances, even though I had ensured that the participants had no professional links to each other. Nonetheless, I acknowledged that junior staff may feel intimidated or embarrassed by senior staff and may hesitate in sharing their own experiences of clinical practice, no matter how much sensitivity and awareness of these power structure are recognized (Blaxter et al., 2010; Jayasekara, 2012).

Another limitation of this case study is that this study began in 2019 when I was in the early stage of conceptualizing this doctoral study. By 2020, news was emerging about a COVID-19 pandemic. Specifically, there were increasing admission cases, pressures on workforces with escalating workloads, and a series of precautionary measures to prevent the spread of COVID-19. Within the case study, university activities and nurse training had been restricted. In some instances, there was a suspension of clinical practicum. During this time, I conducted a face-to-face focus group interview. There were additional concerns in the process, for example, I ensured that I adhered to the precautionary measures, making available and using hand sanitizers, wearing facial masks, and maintained social distancing. I carried out a participant observation within a clinical setting and again adhered to and ensured I followed the government advice and took precautionary measures to prevent the spread of COVID-19. While it is important to recognize the potential impact of this pandemic, adjustments had been made to minimize the health threat risks: fortunately, none of the participants in this study was affected by this pandemic, nor did this influence the key focus of this study.

6.4.3 Challenges faced

This study was situated within a social constructionist epistemological stance to maintain the purpose of knowledge stressing, "not simply imprinted on individuals but are formed through interaction with others and through historical and cultural norms that operate in individuals' lives" (Creswell, 2007, p.21). Throughout this case study, one of the challenges I experienced related to taking on multiple roles, for example, an interviewer, a focus group moderator, a transcriber, an analyst, a writer and a researcher. My personal interest and background in the topic shaped the research process, including the way I asked questions and prompted additional responses from the participants. I also followed up with the participants in case of some ambiguities found in their shared information to ensure that the transcribed interview content accurately captured what the participants wanted to express.

The content I gathered from the participants presented another challenge. Some of the questions I asked may be too "personal", which may make these participants hesitant to go "deep" into the "seemingly sensitive" topics, resort to "formal or superficial" descriptions or unwilling to follow up on their points. I noticed this situation most often whilst interviewing the advanced practice nurses or clinical mentoring personnel. I learned some interviewing skills in my professional training, such as paraphrasing the interviewees' statements or pausing between questions to encourage the participants to elaborate on their answers. To prepare for my role as a focus group moderator, I regularly consulted with my supervisor, reading relevant materials, and watching online tutorials. Performing a case study on a local issue was a new challenge to me. By outlining its particularity and uniqueness, I hope that this research study can highlight the associated problems and offer insights that can guide stakeholders in improving clinical nursing skills education.

6.5 Personal reflection

I started writing my research diary from the first day of the dissertation period. At the time, my writings were not comprehensive enough and were only fragmented notes. I started jotting down my personal feelings and thoughts after finishing each research activity, such as after recruiting, interviewing the participants, moderating the focus group, and conducting participant observation in clinical visit and skills laboratory class. I developed a practice to document logistics and my reflective thoughts about the issues. Surprisingly, I moved from scribbling down the muddled views on a blank sheet to documenting more concrete participant observation and reflections in detail. Although challenging, I found the experience

of keeping a research diary necessarily, and initially, had not considered how important this would be in terms of aiding my critical thinking and analysis.

6.5.1 Reflections about the case study

As I mentioned in Chapter 3, my interest in clinical nursing skills education has been driven by my experiences and observation during my clinical teaching duty. News about the unsatisfactory performance of nursing students (such as those who committed medical incidents at wards) heard from the mass media are sometimes linked to the clinical contextual factors (Zhao, 22 November 2015; Press Release of The Government of the Hong Kong Special Administrative Region, 27 August 2018). My interactions with the nursing students and clinical staff revealed that some reporting did not paint a whole picture of the issue at hand. Throughout this research study, I had the opportunity to contact different categories of nursing members and congregate their divergent ideas and perspectives. I eventually concluded that nursing students' clinical skills development not solely linked with the academic issues, but also influenced by the social or cultural factors in the clinical learning environment, including these students' interactions with others and their learning approach.

I have been in the nursing profession for more than 30 years, of which I devoted over 20 years to education starting from teaching students in the previous conventional nursing school during the 1990s to later administering university-based training. This long-term professional service gave me the privilege to meet and to talk to different nursing members empathetically during the interviews and focus group. Being familiar with this cultural setting, it provides me the opportunities to acquaint with the dilemmas the participants faced when carrying out the clinical skills education and found that such exercises are not as simple as an 'outsider' may imagine.

I also faced difficulties in defining the social, cultural and sociocultural factors in the clinical environment. I studied the related literature and discovered that these factors are multi-layered, with substantial definitions, and cover various realms as discussed in Chapter 2. The definitions of these factors concern the distinctive values, beliefs and behaviours of people working inside an organisation and eventually affect the learning attitude of learners via interaction. The dysfunctional teaching or learning behaviour in an unsupportive workplace can be detrimental. The problems shared by the participants can be associated with humanistic (personal) or organisational (clinical workplace) issues that can influence the

learning of students and the teaching of mentors. Ironically, these factors have been less examined in the local research. My conversations with stakeholders in this study highlighted the important contributions of the sociocultural sources of the learning environment to the skills teaching and learning processes.

I situated the data with Vygotsky's SCT (1978) and applied its important theoretical concepts in clinical nursing skills education. As a nurse teacher, I came to understand that more knowledgeable others include well-trained mentors, qualified nurse teachers or nursing specialists. However, the student participants shared that they could also learn from other people within their environment, including their peers, healthcare assistants (having a junior status in the organisational hierarchy) or doctors (not nursing fellows). In other words, it illustrates that the students' knowledge can be enhanced or exchanged by means of their social interactions with surrounding people, formally, informally and reciprocally.

This case study listened to the voices of different nursing members in the profession. Whilst understanding the learning profile of students, I asked for feedback from the teaching personnel, such as nurse teachers and mentors in the clinical places. Given that nursing students are the actual recipients in the education process, I also talked to students regarding their problems, listened as they mentioned about the unsupportive learning environment and the presence of different socio-cultural factors. These elements are related to the learning motivation of students, however, they are often overlooked by the education programme developers.

Apart from common suggestions for reformulating programme structures or course contents in educational area, this study specifically highlights the intrinsic demands of nursing students, such as an environment that is conducive to their learning and supportive mentors. I found using Braun and Clark's (2013) analytical approach provided me with a structured framework in which I could generate the codes and themes and organise the data systematically. Participants' concerns were clearly illustrated by the four finalised overarching themes that I generated from the integrated data. Hence, we could listen attentively to the needs of individuals, whether learners or non-learners, to improve clinical skills education in the actual practice.

6.5.2 Impact on my own practice and teaching work in hospital

Writing this dissertation has been time demanding. Just the data collection and analysis step took me more than one year to finish. The pandemic also created several setbacks, such as the suspension of the clinical practicum of nursing students, the restriction of crowd gathering, and social distancing imposed various barriers to me in the data collection period. On the other hand, performing participant observation in the clinical visit as well as the skills laboratory teaching was also a challenge to me especially involved my reflective thought in the research diary. I am not very good at expressing myself and English is only my second language, which increases the difficulties in the process. Picking up a pen and writing down the first sentence in this manuscript was proved as a daunting task to me. With the changes in the social environment, I found puzzlement in completing each chapter of this work including ensuring a smooth flow of my ideas and making sense out of my arguments. Albeit the existence of my limitations, I stayed positive by reminding myself that I could overcome all these setbacks. There are two important impacts of this study on me. The first impact is on my own practice as a nurse practitioner, and another is its impact on my clinical teaching work in the hospital.

In terms of impacts on my own practice as a nurse practitioner, I cannot underestimate the knowledge and understanding I have gained about the challenges of conducting clinical nursing education on undergraduate nursing students within a clinical environment. I found that I have developed a critical and reflective insight into the challenges of nursing education. On a practical level, I have become even more sensitive in my conversations and in my understanding of delivery of nursing education knowledge. I am acutely aware of the importance of the learning environment and the importance of social interaction opportunities between students, nurse teachers, clinical nurses and senior managers. For example, in practice, I am particularly interested in the concept of ‘more knowledgeable others’ and have used this more consciously into my day-to-day teaching and within practicum. Given this insight, I have started to notice the impact on nursing students’ experience, being more engaging and academically rewarding. Furthermore, I have taken an opportunity with other university colleagues to produce a clinical teaching handbook (HKMU, 2022) during my doctoral period. This handbook primarily provides some guidance for the nurse teachers on how to conduct clinical education in the practicum settings and some of the ideas and understanding are inspired by this study.

In terms of the impact upon my teaching work in the hospital, nursing students of University B typically are expected to undergo a 6-weeks clinical education in their first teacher-led practicum. As a nurse teacher, I have become more aware of students' interaction with each other and the dynamics of their collaborative group work during practicum. On occasion, when students have not carried out specific clinical tasks that are required, I have intentionally paired less confident students with the more knowledgeable others. Sometimes, I have also paired up with those students who lacked confidence and skills to carry out clinical tasks so as to build up their confidence by scaffolding them to develop their independence. I have found that being aware of the sociocultural context in the clinical environment has enabled me to work as a more research/evidence informed practitioner.

6.6 Opportunities for future research

This study, along with the previous literature, paints a clear picture of the relationship between the clinical environment and clinical nursing skills education for nursing students in Hong Kong. The participants' narratives highlighted several important sociocultural factors of the clinical learning environment that can influence the clinical skills learning of nursing students. Vygotsky's SCT (1978) underscores the importance of strengthening these students' social interaction, promoting collaborative learning, and understanding the environmental impact. The participants from different categories of nursing members shared varying perspectives towards certain issues, such as the lack of management support for skills education and the dilemma between ritualised practices and clinical learning. In consideration of my findings, I propose two long-term goals which are to provide a supportive learning context for nursing students and to provide continuous professional support for mentoring personnel which could further develop their roles as educators in clinical skills education.

Future studies could consider employing a mixed-methods or quantitative research design to collect broader information. Researchers may even use the findings of this case study to design action research by incorporating the idea of social interaction or collaborative learning and evaluate the effectiveness of these endeavours in clinical education. These opportunities for future research could be valuable in enhancing the clinical skills standard for nursing students in the long run.

6.7 Final thoughts

This study explored the influence of the sociocultural factors of the clinical environment on clinical nursing skills education by adopting a qualitative case study methodology. Whilst an increasing number of global studies have revealed that the sociocultural factors of the clinical environment imposing prominent effects on the learning outcomes of students, the paucity of local research greatly limits the understanding of this topic. This case study aimed to investigate the research gap with support from Vygotsky's SCT (1978). In the local context, the voices of different categories of nursing members have been largely unheard. To understand these members' problems holistically, the study visualised the barriers they were facing in their practice. Despite having a relatively small number of participants, the study provided a platform for nursing members to share and to exchange their opinions. It underscores the importance of developing a supportive clinical environment, promoting a positive learning climate, and adopting effective teaching strategies (i.e., collaboration and social interactions) in developing the ability and confidence of students and expanding their zones of proximal learning. In addition to my participant observation and reflections in the research diary, I hope that this small-scale project can provide useful insights and understanding to the society regarding the current situation of clinical nursing skills education in Hong Kong.

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Appendices

Appendix A: Ethical Approval

3/26/2020 Email - Yuen Fung Wong - Outlook

Ethics Online Tool: application signed off

Research Governance and Ethics Officer [redacted]

Wed 11/03/2020 18:50

To: Yuen Fung Wong [redacted]

Your online ethics application for your research project "Challenges in conducting clinical nursing skills education for the pre-qualified nursing students at the clinical environment of Hong Kong: a case study" has been granted ethical approval. Please ensure that any additional required approvals are in place before you undertake data collection, for example NHS R&D Trust approval, Research Governance Registration or Site Approval.

For your reference, details of your online ethics application can be found online here:

http://www.bristol.ac.uk/red/ethics-online-tool/applications/[redacted]

University of BRISTOL

Dr [redacted]
Chair of Research Ethics Committee
School of Education
35 Berkeley Square
Bristol BS8 1JA UK

To whom it may concern

This letter can act as a confirmation that Dr Yuen Fung Wong's research ethics application for her research project entitled 'Challenges in conducting clinical nursing skills education for the pre-qualified nursing students at the clinical environment of Hong Kong: A Case Study' was granted ethical approval on 11th March 2020 by the School of Education's Research Ethics Committee.

Kind regards

[redacted]

Dr [redacted]
Chair of Research Ethics Committee

School of Education
35 Berkeley Square
Bristol BS8 1JA UK
+44 (0)123 12 12345
ioanna.bakopoulou@bristol.ac.uk

bristol.ac.uk

[redacted]

MEMO

To: Ms Irene Wong Yuen Fung [redacted]
Cc: Professor [redacted]
From: Dr [redacted]
Date: 24 March 2020

Ethical Review regarding Human Research

REC Reference No.: [redacted]
Principal Investigator: **Ms Irene Wong Yuen Fung**
Project Title: **Challenges in conducting clinical nursing skills education for the pre-qualified nursing students at the clinical environment of Hong Kong**

This informs you that, according to the University's guidelines and procedures for ethical review regarding human research, your ethical clearance application for the project listed above has been approved by the Research Ethics Committee (REC) with the condition specified below. Please follow the research ethics procedures stated in your application (including the disposal of confidential data) when carrying out the project and also note the following standard terms:

Standard Terms of Approval

1. **Ethics approval effective period:** the ethics approval period will be from 1 April 2020 to 31 March 2022.
2. **Future correspondence:** please quote the REC reference no. and the project title above in any future correspondence relating to ethical issues of your project.
3. **Ethical conduct for your research:** you should ensure that all investigators (if any) are aware of the terms of approval and take reasonable care to ensure that the study is conducted in accordance with the University's *Guidelines and Procedures for Ethical Review regarding Human Research*.
4. **Amendments to the approved project:** any amendments to the project (including applications of extension of ethics approval effective period and changes in research protocol) should be reported to REC by completing the *Amendment Application Form*. For cases when there are substantial variations or the amendment involves any major change to the methodology described in the research proposal for application, a new application for ethical review will be required.
5. **Monitoring:** your project may be subject to an audit or any form of monitoring by REC (which will include e.g. review of the signed consent forms for participants and the data storage arrangements) at any time to ensure that ethical requirements are met.

[redacted]

Appendix B: SoE RESEARCH ETHICS FORM (1)

SoE RESEARCH ETHICS FORM

It is important for members of the School of Education, as a community of researchers, to consider the ethical issues that arise, or may arise, in any research they propose to conduct. Increasingly, we are also accountable to external bodies to demonstrate that research proposals have had a degree of scrutiny. *This form must therefore be completed for each piece of research carried out by members of the School, both staff and students*

The SoE's process is designed to be supportive and educative. If you are preparing to submit a research proposal, you need to do the following:

1. **Complete the form on the back of this sheet**
   A list of prompts for your discussion is given below. Not all these headings will be relevant for any particular proposal.
2. **Arrange a meeting with a fellow researcher**
   The purpose of the meeting is to discuss ethical aspects of your proposed research, so you need to meet with someone with relevant research experience. Discussants are encouraged to take the role of critical friend and approach the research from the perspective of potential participants.

   Track the changes in how your thinking has changed as a result of your decisions; this form is designed to act as a record of your discussion and any decisions you make.
3. **Upload a copy of this form and any other documents (e.g. information sheets, consent forms, materials) to the online ethics tool at:** https://dbms.ilrt.bris.ac.uk/red/ethics-online-tool/applications.

   Please note: Following the upload you will need to answer ALL the questions on the ethics online survey and submit for approval by your supervisor (see the flowchart and user guides on the SoE Ethics Homepage).

If you have any questions or queries, please contact the ethics co-ordinators at: gsoe-ethics@bristol.ac.uk

Please ensure that you allow time before any submission deadlines to complete this process.

Prompts for discussion
You are invited to consider the issues highlighted below and note any decisions made. You may wish to refer to relevant published ethical guidelines to prepare for your meeting. See http://www.bris.ac.uk/education/research/networks/ethicscommittee/links/ for links to several such sets of guidelines.

1. Researcher access/exit
2. Power and participant relations
3. Information given to participants
4. Participant's right of withdrawal
5. Informed Consent
6. Complaints procedure
7. Safety and well-being of participants/researchers
8. Anonymity/confidentiality
9. Data collection
10. Data analysis
11. Data storage
12. Data protection (see: http://www.bristol.ac.uk/secretary/data-protection/)
13. Feedback
14. Responsibilities to colleagues/academic community
15. Reporting of research

Be aware that ethical responsibility continues throughout the research process. If further issues arise as your research progresses, it may be appropriate to cycle again through the above process.

Name(s): Wong Yuen Fung

Proposed research project:
Challenges in conducting clinical nursing skills education for the pre-qualified nursing students at the clinical environment of Hong Kong: a case study

Proposed funder(s): Nil

Discussant for the ethics meeting: Dr [redacted]

Name of supervisor: Dr Navin Kikabhai

Has your supervisor seen this submitted draft of your ethics application? Y/N

Please include an outline of the project or append a short (1 page) summary:

This proposed research is planned to be conducted from February 2020. The study will employ Yin's (2018) case study method which aims to explore the challenges of conducting clinical nursing skills teaching for pre-qualified nursing students at the local clinical environment. Its theoretical stance will adopt social constructivist epistemology as it emphasizes making sense of the world through meaning, and largely on the collective generation of social and cultural components which include the interplay of different actors and contextual factors of the environment thereby constructing the phenomenon interim (Crotty, 1998). The theoretical framework will also draw on Vygotsky's Sociocultural Theory since it explicates to understand the students' learning experiences from the angle of the social and cultural influence of the environment (Vygotsky, 1978). Through data collection, primarily by focus group and individual interviews with a diverse mix of nursing students and nursing professionals along with the reflection of the researcher's clinical teaching reflective journal, the research will explore this complex phenomenon and develop a more holistic understanding on the case issue. Drawn on the key ideas of Vygotsky's Sociocultural Theory regarding learners' learning, socio-cultural influence of environment, the relation between cognition and social interaction (Vygotsky, 1978), the research aim is therefore:

Aim: To explore the challenges of conducting clinical nursing skills teaching for pre-qualified nursing students at a local clinical environment

The Research Questions are:

1) What are the sociocultural sources in the local clinical setting that affect the development of nursing students' clinical nursing skills?
2) How do the existing sociocultural sources in the local clinical setting affect the development of nursing students' clinical nursing skills?
3) To what extent do the cultural elements in the clinical environment influence the cognitive thinking of nursing students through the transformation process into higher level and eventually affect their mastery of clinical nursing skills?
4) How is the social interaction between the nursing students and other professional parties in the clinical environment affect the teaching and learning process of the clinical nursing skills education?

This research aims to collect varied points of view towards the case phenomenon, the sample participants will be recruited from a diverse mix of nursing students and professional parties including the academic and the clinical field. The method of data collection is threefold:

1) Conducting a focus group interview with participants from the various fields of the profession, for example, nursing students, nurse teachers, nursing officers (e.g. nurse managers or advanced practice nurses) and frontline clinical nurses.
2) Conducting semi-structured interview for individual participant from diverse mix of nursing students and nursing professionals which comprise of: nurse teachers, nursing students from different school years of the targeted researched university (University B), nursing officers (e.g. nurse managers or advanced practice nurses) and the frontline clinical nurses from the existing clinical environment;
3) Collecting the researcher's writing through participant observation from own experiences of being a clinical practitioner and university lecturer in the self-reflective journal during clinical teaching.

The research proposes to conduct two pilot interviews, carried out one month before the formal exercise in order to refine the interview schedule, questions and the subsequent operation process. The qualitative data analysis will adopt Creswell's (2007) Data Analysis Spiral method which advocates using a systemic coding method and thematic analysis to extract concepts and constructs from the transcripts and documents. Ethical consideration will be considered throughout the whole project.

Ethical issues discussed and decisions taken (see list of prompts overleaf):

1. Researcher access / exit

All participants will be informed of the research process, primarily through an 'information sheet' which provides clear information about what this research entails, and a timeline of the intended research. It will also state clearly when the research will conclude, and what will happen to all collected data. For participants choosing to be involved in interviews, they also will be provided with clear and unambiguous details of when this research will end. This will generally coincide with the formal submission of the EdD thesis to the University of Bristol.

To start with, I must follow the ethical guidelines printed by the British Educational Research Association (BERA) and gain the permission from the gatekeeper of the respective organizations (BERA, 2011) before the process. They include obtaining the ethical approval from: 1) the Ethics Committee of my university - University of Bristol; 2) the Research Ethics Committee (REC) of the targeted researched university "University B" before the sampling recruitment procedure of nurse teachers and nursing students. After confirming ethical approval of the respective institution, I will begin the recruitment process. In order to collect more effective data, I will use the purposive sampling method to recruit the targeted participants for the focus group and the individual interview which mean the participants to be recruited must be matched with my pre-set inclusion criteria in my proposal. I will also follow the stipulated rules and obtain the ethical approval from the targeted researched institution (University B) for recruiting the nurse teachers and students to the interview session.

Appendix C: SoE RESEARCH ETHICS FORM (2)

Regarding the staff from clinical field (nurse managers or advanced practice nurses and the frontline clinical nurses), I will search the appropriate candidates from the professional social networking. Their diverse background is believed to offer more generous perspectives and therefore benefit for a holistic overview. Unique inclusion criteria will be designed for each particular group of participants and they will be indicated separately in the proposal. All of the participants will be adults, over 18 years of age.

These potential identified participants will later receive an invitation email from me with relevant information sheet about the study. The information sheet will explain in detail of the voluntary nature in the participant's role, their freedom of participation choice and their right of withdrawal in any time of study without any negative consequence. After receiving participant's response showing their interest to join in this study, I will contact them individually, provide logistic information and negotiate them about the interview venue (e.g. I will book a room in University B or according to the participants' preference for the purpose) and time. Regarding the focus group interview, I will arrange the logistics, date, time and venue after negotiated all participants. I will also clarify their concerns as raised. Until they have demonstrated full understanding on the information presented, they will offer to sign the informed consent form.

2. Power and participant relations

It is proposed to have four group targeted participants for the focus group and individual interview: 1) nurse teachers of University B; 2) pre-qualified nursing students of University B; 3) nursing officers (e.g. nurse managers or advanced practice nurses) from local clinical place; 4) frontline nursing staff from local clinical place.

As a researcher, I will minimize the possible unequal power relations between I, (researcher) and the participants by providing the participants with as much information about the study as possible. Whatever the focus group or individual interview, I will remind myself of the role as a facilitator and avoid intervening unnecessarily in their discussion. I will also reassure them that their participation is important and without their involvement the research would be less valuable. They will be also able to request copies of any of their transcripts. They will have a further reminder that they are fully entitled to withdraw from this study up until two weeks after their formal interview.

3. Information given to participants

Regarding the focus group and individual interview, they entail four groups of potential participants in my data collection. I will design four sets of interview questions to them separately. I will ensure all the information appropriate to the participant's education level, working experience and clinical background. In this study, all the participants are adults. Their mother tongue is Cantonese (a type of Chinese oral language), therefore the oral language to be used in the interview session will use Cantonese whereas the information sheet, interview guide will be available in both English and Chinese. I will make sure all participants fully understand the information sheet provided before signing their consent form for the interview (BERA, 2011).

4. Participant's right of withdrawal

I will explain to the participants that their participation in this research is completely voluntary. Participants will be reassured that they have the right of withdrawal at any time of the interview if they feel uncomfortable about the procedure or express a wish to stop participating. I will also provide participants with the complaint procedure for their reference (BERA, 2011).

5. Informed consent

All participants will be provided with an information sheet and an informed consent form in either Chinese or English to ensure that individuals are fully informed of what this proposed research entails. The informed consent form will include a brief overview of the research, a reminder that all data collected with be made anonymous and confidential, the researcher's contact details if they have any questions and my supervising tutor's contact details if the participants feel they have a cause for complaint.

I will bring the queries up to discuss with my supervisor. According to the questions related to the ethical guidelines, I will contact the University Research Ethics Committee of University of Bristol to discuss the complex situation.

6. Complaints procedure

All participants of my study will be clearly informed about how they can make a complaint about the conduct of the research (BERA, 2011). This action can offer participants better feeling that another means of contact (other than me as the principal investigator) will be available if the questions arise. The persons for contact can be my supervisor or the ethics coordinators of University Research Ethics Committee at ea-fssl@bristol.ac.uk

7. Safety and well-being of participants / researchers

As the authentic clinical setting is busy and distracting, it is not suitable to be selected as a place for conducting the focus group or individual interview. To ensure the place safety, I will negotiate with the participants about the place, time and transport to avoid possible hazards. In addition, I will ensure both the physical and emotional well-being of the participants and myself before attending the interview (BERA, 2011).

8. Anonymity / Confidentiality

I will use pseudonyms or alternative identifiers to represent the identity of the participants. Information gained from the interviews will be held in confidence and used only for the purposes agreed with the participants. I will also ensure all the files I recorded and transcribed will be password protected and they will also be kept in a safe password protected computer terminal. (BERA, 2011).

9. Data collection

Regarding the process of data collection, before the arrival of participants, I will have prepared the necessary accessories and equipment, e.g. relevant documents, adequate battery of the digital recorder, notebook, a bottle of plain water and a box of tissue paper to minimize the disruption of the interview (approx.:45 to 60 minutes for individual interview and 3 hours for the focus group). Before commencing the interview, an informed consent form should have been signed prior to the interview (BERA, 2011).

10. Data analysis

After collected the data, I will perform the coding method and thematic analysis for the qualitative data, e.g. by selecting, vetting, extracting concepts and constructs from the transcript verbatim and reflective journal on clinical teaching. Ethical consideration will be on-going throughout the whole project. Member checking can be carried out for the interview transcriptions that allow the participants to check the accuracy of the transcription to ensure the validity of the content analysis from the returned draft data (Creswell, 2018).

11. Data storage

I will follow the UK Data Protection Act that all data must be held under secure condition (BERA, 2011). I will encrypt and store the interview data in the password protected digital files and they will also be kept in a safe password protected computer terminal. This is regularly backed-up for my university server therefore it will be a more secure place for data storage.

12. Data protection

According to the UK Data Protection Act, all data must be collected and processed fairly and lawfully (BERA, 2011). I will ensure all the data obtained should be relevant, not excessive amount and that this data will only be used for the purpose of this research study.

13. Feedback

On participants' request, I will provide a brief summary of the research and its findings. I will supply them with accessible information and will inform them about the possibility of future presentation or possible paper publication.

14. Responsibilities to colleagues / academic community

I must recognize my role as being a researcher in the university and how I will be expected to work in a way to bring credit to the School of Education. I will try and endeavor to getting myself involved with the research. To play a responsible role of being an academic, my research should be planned with sensitivity towards my participant's needs and expectations, accurately reporting of participants' opinions. It is unlawful and unethical for any fabricating results or plagiarizing other researcher's work (BERA, 2011).

15. Reporting of research

With regard to reporting of this research, it is anticipated that the findings from this study will be of benefit to the nursing profession for betterment of the clinical nursing education specifically to the academic community and the University B. On request, I would provide individuals and the host university a brief summary of the findings from this research. This may also be in the form of a presentation. I will also inform them also if the project is to be published in future.

Signed: Wong Yuen Fung, Irene (Researcher)

Signed: Dr [redacted] (Discussant)

Date: 31/1/2020

Appendix D: Individual Interview - Information Sheet

Information Sheet (Individual Interview)

My name is Wong Yuen Fung, Irene. I am a doctoral student for the Doctor of Education programme in the University of Bristol, UK. I will conduct a dissertation research entitled "Challenges in conducting clinical nursing skills education for the pre-qualified nursing students at the clinical environment of Hong Kong: a case study" and would like to invite you to participate an individual interview.

This information sheet will provide you with an overview of the research, the purpose, the benefits and the associated risks of the research. Your participation is completely voluntary. You can withdraw from the study at any time without any negative consequence. Please read this information sheet carefully and raise questions to clarify the unclear areas. It is important that you fully understand this research to make an informed decision.

Purpose:

This interview aims to collect your opinion to explore the challenges when conducting the clinical nursing skills education for pre-qualified nursing students at the local clinical environment. It is intended to offer the insight for relevant stakeholders in the nursing profession (i.e. clinical teachers, university practicum coordinator, clinical staffs) by illustrating the problem (i.e. challenges in clinical nursing education) from the socio-cultural perspective. The finding is believed to be useful for the betterment of the quality of clinical nursing skills education.

Procedure:

You will be asked to participate in a semi-structured individual interview that will last approximately 45 to 60 minutes. The researcher may ask if you would be willing to participate in a follow up communication to clarify or extend any responses from the first interview. With your permission, the individual interview will be audio recorded with a digital recorder and transcribed afterwards.

Benefits:

The potential benefit of participating in this study may include the opportunity to promote your understanding to the topic in conducting clinical nursing skills teaching for the pre-qualified nursing students at the clinical environment in Hong Kong. The finding is believed to provide insight for the professional body to better the quality of clinical nursing education. Without your involvement, the research will become less valuable.

Risks:

There will not be any potential risk or harm caused to you by participating in this study.

Confidentiality

Researcher will use pseudonyms or alternative identifiers to represent the identity of the participants. Information gained from the interviews will be held in confidence and used only for the purposes agreed with the participants. All the files being recorded and transcribed will be password protected and they will also be kept in a safe password protected computer terminal. The information will be deleted after the dissertation report has been completed.

If you have any concerns about the research study, please feel free to contact Wong Yuen Fung, Irene at [redacted] or by email on [redacted]. If you have questions about your rights as a participant of this research study, please contact the University Research Ethics Committee of the University of Bristol at [redacted]

Appendix E: Individual Interview: Informed Consent/Interview Questions

Informed Consent (Individual Interview)

Date:_____

Dear participant,

My name is Wong Yuen Fung, Irene. I am a doctoral student for the Doctor of Education programme in the University of Bristol, UK. I will conduct a dissertation research entitled "Challenges in conducting clinical nursing skills education for the pre-qualified nursing students at the clinical environment of Hong Kong: a case study" and would like to invite you to participate.

Please complete the reply slip below and indicate whether you decide to participate in this research. All the information obtained will be used for research purpose only. Participant will not be identified by name in any report of the completed study. The participation is entirely voluntary. This means that you can choose to withdraw from the study at any time without negative consequences. If you have any questions or concerns about the research study, please feel free to contact Wong Yuen Fung, Irene at [redacted] or by email on [redacted]. If you have questions about your rights as a participant of this research study, please contact the University Research Ethics Committee of the University of Bristol at [redacted].

If you understand the contents above and agree to participate in this research, please sign the reply slip attached. Your help is very much appreciated.

Yours sincerely,

_____
Wong Yuen Fung, Irene
Student of Doctor of Education
University of Bristol, United Kingdom

Reply Slip

Name of Participant: _____

- I have received the information sheet and fully understand the purpose of this research
- I am happy to participate in this research
- I am aware of my rights to withdraw from this study at any point during the process
- I ** agree/do not agree to being audio-recorded during the interview process
- I understand that there will be no personal identifying markers that make my identity known

(** Please delete as appropriate)

Signature: _____

Print Name: _____

Date: _____

Interview Questions (Nurse Teachers)

Questions for individual interview:

1. How long have you been conducting clinical nursing skills teaching to the nursing students at the clinical setting of Hong Kong?
2. Can you share the impression of the clinical environment you have been there for clinical teaching? How do you perceive the special features of the clinical place being allocated before?
3. How do you think the social and cultural factors of the clinical environment may affect nursing skills teaching to students? Why?
4. In your opinion, what elements of the clinical environment should be possessed if want to develop an environment favourable to your teaching and students' learning on clinical nursing skills? Why? Please elaborate this with examples.
5. What are the current challenges happening at the Hong Kong clinical environment today in conducting clinical nursing skills teaching for the nursing students?
6. How do you comment the social interaction of nursing students with the parties in the clinical environment, for example clinical staff, nurse teacher and patients? Is there any relationship between it with students' skill teaching and learning? Why?
7. In your opinion, how to establish a favourable environment facilitate clinical nursing skills teaching for pre-qualified nursing students in Hong Kong? Support your ideas with reasons.
8. Tell me a story or a scenario which leave you a deep impression about clinical nursing skills education to the nursing
9. students. Why?

Appendix F: Focus Group - Information Sheet

Information Sheet (Focus Group)

My name is Wong Yuen Fung, Irene. I am a doctoral student for the Doctor of Education programme at the University of Bristol, UK. I will conduct a dissertation research entitled "Challenges in conducting clinical nursing skills education for the pre-qualified nursing students at the clinical environment of Hong Kong: a case study" and would like to invite you to participate a focus group interview.

This focus group interview aims to collect the varied points of views among the nursing students and nursing professionals, from the sociocultural perspective to study the case phenomenon on the challenges of conducting clinical nursing skills education for the pre-qualified nursing students in Hong Kong clinical environment. The finding is believed to be useful to better the quality of local clinical nursing skills education.

Procedure:

You can choose whether or not to participate in the focus group interview and can withdraw from it at any time. With your permission, the focus group interview will be tape recorded, your response will remain anonymous and all participants will not be identifiable in any report of the research project nor in any of the data stored for it. The interview will last approximately 2 hours. The researcher may ask if you would be willing to participate in a follow up individual interview to clarify or extend any answers from this group interview. There is no right or wrong answer to the focus group interview questions. Please be honest and express your point of views to the discussion topic. This is valuable to hear many different viewpoints from you and everyone.

Benefits:

The potential benefit of participating in this study may include the opportunity to promote your understanding to the discussion topic. The findings can provide insight for the professional body to better the quality of clinical nursing education. Without your involvement, the study will become less valuable.

Risks:

There will not be any potential risk or harm caused to you by participating in this study.

Confidentiality

Researcher will use pseudonyms or alternative identifiers to represent the identity of the participants. Information gained from the interviews will be held in confidence and used only for the purposes agreed with the participants. All the files being recorded and transcribed will be password protected and they will also be kept in a safe password protected computer terminal. The information will be deleted after the dissertation report has been completed.

If you have questions about this study or your rights as an informant of the focus group interview, please feel free to contact the researcher Irene Wong at mobile: [redacted], by email at [redacted] or contact the University Research Ethics Committee at [redacted]

Appendix G: Focus Group: Informed Consent/Discussion Questions

Informed Consent (Focus Group)

Date:_____

Dear participant,

My name is Wong Yuen Fung, Irene. I am a doctoral student for the Doctor of Education programme at the University of Bristol, UK. I will conduct a dissertation research entitled "Challenges in conducting clinical nursing skills education for the pre-qualified nursing students at the clinical environment of Hong Kong: a case study" and would like to invite you to participate.

Please complete the reply slip below and indicate whether you decide to participate in this research. All the information obtained will be used for research purpose only. Participant will not be identified by name in any report of the completed study. The participation is entirely voluntary. This means that you can choose to withdraw from the study at any time without negative consequences. If you have any questions or concerns about the research study, please feel free to contact Wong Yuen Fung, Irene at [redacted] or by email on [redacted]. If you have questions about your rights as a participant of this research study, please contact the University Research Ethics Committee of the University of Bristol at [redacted]

If you understand the contents described above and agree to participate in this research, please sign the reply slip attached. Your help is very much appreciated.

Yours sincerely,

_____
Wong Yuen Fung, Irene
Student of Doctor of Education
University of Bristol, United Kingdom

Participant's Reply Slip (Focus Group)

- I have received the information sheet and fully understand the purpose of this research
- I am happy to participate in this research
- I am aware of my rights to withdraw from this study at any point during the process
- I ** agree/do not agree to being audio-recorded during the interview process
- I understand that there will be no personal identifying markers that make my identity known

(** Please delete as appropriate)

Signature: _____

Print Name: _____

Date: _____

Interview Questions (Focus Group)

Questions for the focus group:

1. In your opinions, what is the most important sociocultural factor in the local clinical setting that affect the development of nursing students' clinical nursing skills? Why?
2. How do the existing sociocultural factors in the local public clinical setting affect the development of nursing students' clinical nursing skills?
3. Will the cultural elements of the clinical environment affect the nursing students' cognitive and psychomotor skills growth? How and why?
4. How is the social interaction between the nursing students and the other parties in the clinical environment affect this teaching and learning process?

Appendix H: Guide for Participant Observation

Guide for participant observation

Before the exercise:

1. Establish the purpose and have clear ideas of the participant observation in relation to the research questions of the study.
2. Determine the period, place and events to be performed for the participant observation
3. Write down the instant notes guided by six selected items from the Nine Dimensions of Spradley's (1980, p.78) during the event and have the personal thoughts recorded.

Dimensions	Instant Notes	Personal thoughts
1. Space/place		
2. Actor:		
3. Activity:		
4. Event:		
5. Time:		
6. Feeling:		

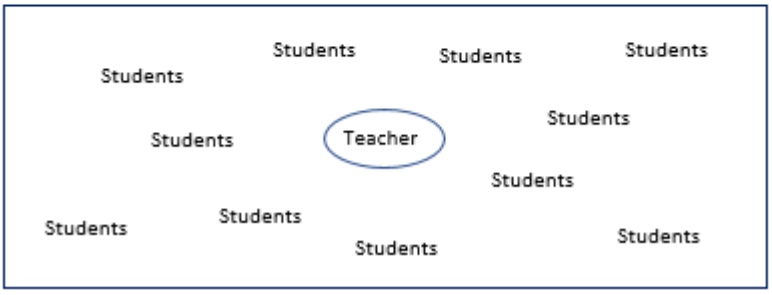
During the exercise:

1. Bring a pen and a notebook to the venue.
2. Jot down the instant notes and personal thoughts from the participant observation based on Spradley's (1980, p.78) framework.
3. Use shorthand, abbreviations, diagrams, mapping illustration for documenting relevant notes.

After the exercise:

1. Convert the handwritten notes into the computer files within one day.
2. Expand the notes and make narrative description of the focused circumstances.
3. Enter the notes of participant observation into the personal research diary for self-reflection and interpretation.
4. Relate the thinking with the research topic.

Mapping the relationship (sample)



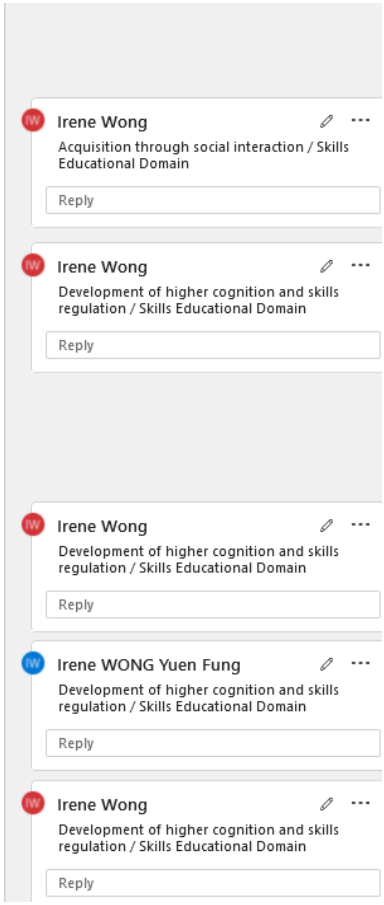
Appendix I: Extracts from Translation Scripts

	Cantonese	English
Interviewer (R)	好...err..好多謝啊姑娘你接受我嘅訪問啦...甘呢，我依個 project 呢,就係主要呢...想 study 一下呢...係香港臨床 ge..er.. 環境裡面呢... 對護士學生係臨床教學上面嘅...有咩嘅挑戰。甘我都知道...姑娘係病房都做過一段時間啦。或者你可以介紹一下你自己，然後我地一陣間進入依個訪問嘅內容啊。	Thank you for accepting my interview...so, my project, is mainly...wanting to study...the Hong Kong clinical ...er...environment...what nursing students will encounter during clinical learning...any challenges. So I want to know...nurse you've been working for a while in wards. Perhaps you can introduce yourself, and then we will enter the content of this interview.
Interviewee (CN02)	好啊。甘我...就係依個 er..急症內科病房做嘅，甘都做左 er..一年多啲啦甘樣嘅，甘其實香港嘅護士都有 rotation 啦, 甘所以都會走唔同嘅科目甘樣嘅。甘我現時係主要做一啲呼吸機啊....er..姐係嚴重少少嘅病人為主嘅...	Ok. So I...worked in this er...medical emergency ward, and I've worked for er...a year and a bit, and actually Hong Kong nurses have rotation, so we will go to different specialties. Right now, I'm mainly working on cases with ventilator ...er...mainly more serious patients.
Interviewer (R)	你話 er...你 er.. d 呼吸機...姐係你係個個...er.. 可唔可以介紹多少少你嘅病房呢？	You say er...you mean...the cases with ventilators ? ...so you are...er...can you talk about your ward a bit?
Interviewee (CN02)	嗯...好啊，其實個到嘅內科病房呢...都混合左老人科甘樣嘅，但係呢因為我地主做一啲..er... 呼吸系統甘樣啦...甘即係...做啲胸肺。甘所以好多時..急症室推一啲比較危急啲嘅病人...要插喉啊...或好人事不醒嘅人直接上黎個啲呢，都會做一啲插喉嘅程序啦、或者...er..要用一啲呼吸輔助嘅儀器去幫佢地呼吸嘅時候....甘相對地呢...er..個樣都比較差啲甘樣 ga..	Oh...sure, so in medical wards...it's mixed with geriatrics, but because we mainly work on er...respiratory cases...that means...problems involved the chest and lungs. So a lot of times...emergency rooms will push in some more acute patients...need to have tube insertions...or many unconscious patients will be directly brought up, and we'll need to do some tube insertion procedures, or...er...need to use some breathing assistance equipment to help them breathe...so comparatively...er...they are in quite a bad state...
Interviewer (R)	係... 甘個病房大約有幾多人左右呢？	So...how many people are there in the ward?
Interviewee (CN02)	嗯..	Um...
Interviewer (R)	我嘅意思係病人	I mean patients.
Interviewee (CN02)	喔...病人，其實呢如果淨係睇格數呢，就大約 46 人甘樣嘅，但好多時香港個病房實在太忙碌啦...所以...er.. 我地都最高峰都加到 60 幾人 ga..	Oh...patients, so if you just look at the number in the cubicle, it's around 46 people [for a ward], but usually Hong Kong wards are very busy...so...er...at our peak we will have up to 60 people.

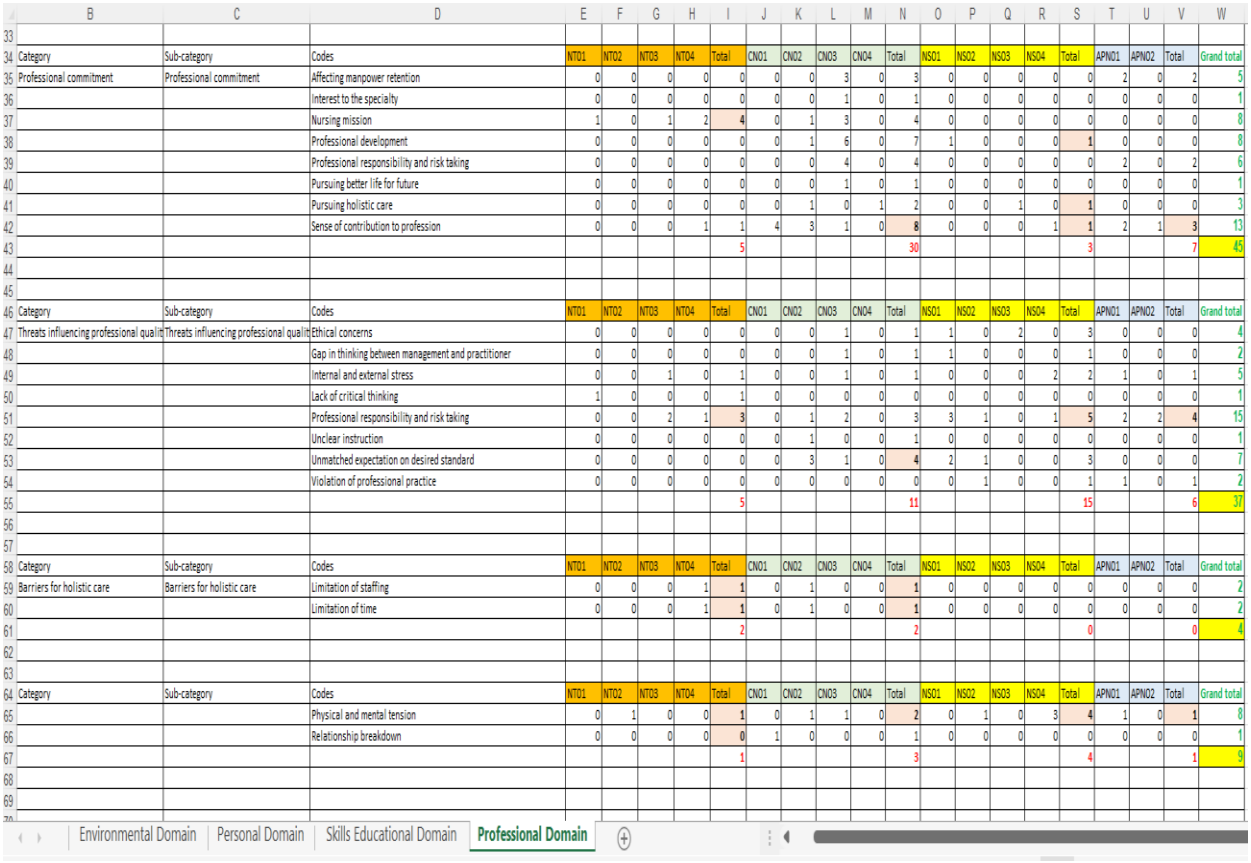
Appendix J: Extracts from Coding Transcripts

48	R: So, can you share if nursing students come here for practicum, what clinical tasks will	
49	they have chance to practice usually?	
50		
51	APN02: **When students come to our ward, I would usually bring them around our**	APN providing
52	**environment, let them be orientated first, because they will have to help sometimes, so**	orientation and basic
53	**at least they will need to know where the basic equipment are placed, for example the**	briefing to students
54	**thermometer, the blood pressure taking equipment, cardiac monitor, dressing material**	undergoing practicum
55	**etc., so very simple matters, we still have to introduce to them, even like the toilet,**	
56	**kitchen, so a very brief orientation.** Afterwards we will... **introduce how our ward takes...**	
57	**like we mentioned earlier, what kind of cases, to let them have a brief idea, what they**	Briefing given to
58	**have to beware of, such as ... such as... because our criteria... like we would also take**	students on the care and
59	**some emotion-related cases, so we would... apart from us... like do some observation of**	observation for the
60	**vital signs usually, their emotions, behaviour, so these we would also teach the students**	patients in her ward
61	**to keep an eye on.**	
62		
63	R: Would you share more on these with examples you come across sometimes?	
64		
65	APN02: Hmm... so there are some... **like cases of emotional issues, maybe s/he does not**	Many emotional cases
66	**even want to be admitted, so there may well be a chance for them to escape, it is**	requiring intense
67	**possible, so we have to beware of that, we will also teach the students, so they will have**	attention to prevent
68	**to keep an eye on these patients,** like if they for example are admitted to the hospital they	from harming self and
69	must be wearing our patient's outfit, so if they changed to their own clothes out of a	others
70	sudden, then they will have to be alert... or in the treatment room, or walk around at the	
71	entrance, this may be the act that they would like to escape, so we have to be cautious, and	
72	also keep an eye on him/her, even if s/he did not intend to escape, even they are inside the	
73	bedside, we still have to see whether they... er... like have acts of self-harm, for example	
74	some sharp weapons, therefore **for each patient that we admit, there are multiple aspects**	
75	**that we look at, other than the vital signs, behaviour, or even what they bring along, we**	
76	**have to pay attention, whether they have something, they want... like to hurt themselves**	Corresponding nursing

48	R: So, can you share if nursing students come here for practicum, what clinical tasks will		
49	they have chance to practice usually?		
50			
51	APN02: When students come to our ward, I would usually bring them around our	Interaction between	
52	environment, let them be orientated first, because they will have to help sometimes, so	student and manager	
53	at least they will need to know where the basic equipment are placed, for example the		
54	thermometer, the blood pressure taking equipment, cardiac monitor, dressing material		
55	etc., so very simple matters, we still have to introduce to them, even like the toilet,		
56	kitchen, so a very brief orientation. Afterwards we will... introduce how our ward takes...	Guided learning	
57	like we mentioned earlier, what kind of cases, to let them have a brief idea, what they		
58	have to beware of, such as ... such as... because our criteria... like we would also take		
59	some emotion-related cases, so we would... apart from us... like do some observation of		
60	vital signs usually, their emotions, behaviour, so these we would also teach the students		
61	to keep an eye on.		
62			
63	R: Would you share more on these with examples you come across sometimes?		
64			
65	APN02: Hmm... so there are some... like cases of emotional issues, maybe s/he does not	Learnt from people with	
66	even want to be admitted, so there may well be a chance for them to escape, it is	more knowledge	
67	possible, so we have to beware of that, we will also teach the students, so they will have		
68	to keep an eye on these patients, like if they for example are admitted to the hospital	Exercising critical	
69	they must be wearing our patient's outfit, so if they changed to their own clothes out of a	thinking	
70	sudden, then they will have to be alert... or in the treatment room, or walk around at the		
71	entrance, this may be the act that they would like to escape, so we have to be cautious,		
72	and also keep an eye on him/her, even if s/he did not intend to escape, even they are		
73	inside the bedside, we still have to see whether they... er... like have acts of self-harm, for		
74	example some sharp weapons, therefore for each patient that we admit, there are	Skills transference and	
75	multiple aspects that we look at, other than the vital signs, behaviour, or even what they	application	
76	bring along, we have to pay attention, whether they have something, they want... like to		



Appendix K: Extracts from Code Frequency Summary



Category	Sub-category	Codes	NT01	NT02	NT03	NT04	Total	CN01	CN02	CN03	CN04	Total	NS01	NS02	NS03	NS04	Total	APN01	APN02	Total	Grand total
Professional commitment	Professional commitment	Affecting manpower retention	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	2	0	2	5
		Interest to the specialty	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
		Nursing mission	1	0	1	2	4	0	1	3	0	4	0	0	0	0	0	0	0	0	8
		Professional development	0	0	0	0	0	0	1	6	0	7	1	0	0	0	1	0	0	0	8
		Professional responsibility and risk taking	0	0	0	0	0	0	0	4	0	4	0	0	0	0	0	2	0	2	6
		Pursuing better life for future	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
		Pursuing holistic care	0	0	0	0	0	0	1	0	1	2	0	0	1	0	1	0	0	0	3
		Sense of contribution to profession	0	0	0	1	1	4	3	1	0	8	0	0	0	1	1	2	1	3	13
							5					30					3			7	45

Category	Sub-category	Codes	NT01	NT02	NT03	NT04	Total	CN01	CN02	CN03	CN04	Total	NS01	NS02	NS03	NS04	Total	APN01	APN02	Total	Grand total
Threats influencing professional qualit	Threats influencing professional qualit	Ethical concerns	0	0	0	0	0	0	0	1	0	1	1	0	2	0	3	0	0	0	4
		Gap in thinking between management and practitioner	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	2
		Internal and external stress	0	0	1	0	1	0	0	1	0	1	0	0	0	2	2	1	0	1	5
		Lack of critical thinking	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
		Professional responsibility and risk taking	0	0	2	1	3	0	1	2	0	3	3	1	0	1	5	2	2	4	15
		Unclear instruction	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
		Unmatched expectation on desired standard	0	0	0	0	0	0	3	1	0	4	2	1	0	0	3	0	0	0	7
		Violation of professional practice	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	1	2
							5					11					15			6	37

Category	Sub-category	Codes	NT01	NT02	NT03	NT04	Total	CN01	CN02	CN03	CN04	Total	NS01	NS02	NS03	NS04	Total	APN01	APN02	Total	Grand total
Barriers for holistic care	Barriers for holistic care	Limitation of staffing	0	0	0	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	2
		Limitation of time	0	0	0	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	2
							2					2					0			0	4

Category	Sub-category	Codes	NT01	NT02	NT03	NT04	Total	CN01	CN02	CN03	CN04	Total	NS01	NS02	NS03	NS04	Total	APN01	APN02	Total	Grand total
		Physical and mental tension	0	1	0	0	1	0	1	1	0	2	0	1	0	3	4	1	0	1	8
		Relationship breakdown	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1
							1					3					4			1	9

Environmental Domain | Personal Domain | Skills Educational Domain | **Professional Domain**

Appendix L: Extracts of Participant Observation from Research Diary

…, the teaching topic was still nasogastric tube insertion. Today I aimed to instruct how the students would perform the auscultation procedure on patient to test the placement of the tube, for example, how to use the fourth and fifth finger to hold the stethoscope onto the patient's upper abdomen while at the same time using the first and second finger to hold the outlet of the syringe for injecting the 10ml air into the stomach.

Clinical skills always require nurses to make use of different abilities, including hearing, touching, sensing, and feeling etc. I remember this procedure besides needing students to use their fingers for manipulation, they also needed to learn how to identify the gurgling sound for confirming the right place of the tubing. Therefore, even though a simple nursing procedure, it involves the use of psychomotor skills, cognitive thinking, and hearing ability. I noticed some students imitated my gesture during my demonstration. I taught them to use the fourth and fifth finger to hold the stethoscope diaphragm and the other hand to hold the tip of the feeding syringe for injecting 10ml air inside to test the auscultation sound. To me, as an experienced nurse, this psychomotor procedure seemed not too difficult, however, I noticed most of the students showing hesitation in manipulating the syringes, stethoscope as well as the tube.

An encounter which puzzled me was on approaching those students having relatively weak biology background, the use of language (cultural tool) became a challenge to me. I remember a nursing student Joseph (pseudonym) raised a question in the class. He pointed to the dummy's chest with his index finger and wanted me to show him the place of the xiphoid process. Because he did not learn that before, to him, the pronunciation, the spelling as well as the meaning were entirely brand new and hard. From my teaching experience, if students did not have good background of biology during their secondary school years, it might escalate their difficulties to study nursing programme at the beginning, especially those involved plenty biological terminologies and concepts inside the syllabus. Sometimes I find myself falling into a dilemma. On one hand, I want to alert students to pay attention to their deficiencies, on the other hand, I am afraid my words might affect their confidence or even undermine their self-esteem. That is why I always give them positive appraisal to boost the student's morale. However, at the same time, I believe a person (i.e., student) must reflect their own strengths and weaknesses so that they can have adjustment for improvement… (Research Diary, [redacted]/10/2020, Skills Laboratory Class)

Appendix M: Email Correspondence with Deputy Dean

Irene WONG Yuen Fung

寄件者: Prof [redacted]
寄件日期: 2020年6月10日星期三 23:11
收件者: Irene WONG Yuen Fung
主旨: RE: Focus group

Dear Irene,

It is fine. Best wishes to your study.

[redacted]

From: Irene WONG Yuen Fung
Sent: Wednesday, June 10, 2020 7:05 PM
To: Prof. [redacted]
Subject: Focus group

Dear [redacted]
I would like to inform you that the focus group meeting of my doctoral project will be held on [redacted]/2020 at Rm [redacted] at 2:30pm to 4:30pm. The participants are 7 persons. I will observe the requirement of the infection control measures for the event.
Thank you for your support

Best Regards,
Irene

Appendix N: Email Correspondence with Participants (Focus Group)

Irene WONG Yuen Fung

寄件者: [redacted]
寄件日期: 01 June 2020 09:08
收件者: Irene WONG Yuen Fung
主旨: RE: Invitation for focus group meeting

Dear Irene,

Please reply to the reply slip below.

Best regards,
[redacted]

From: Irene WONG Yuen Fung
Sent: Saturday, May 30, 2020 1:14 PM
To: [redacted]
Subject: FW: Invitation for focus group meeting

From: Irene WONG Yuen Fung
Sent: Saturday, May 30, 2020 1:00 PM
To: [redacted]
Subject: Invitation for focus group meeting

Dear [redacted]

I am Wong Yuen Fung, Irene [redacted] I am currently conducting a research relating the clinical nursing education in Hong Kong. I would like to invite you to participate in a focus group discussion for getting your opinions and experience regarding the challenges on the clinical nursing education to the nursing students in Hong Kong. The session will last approximately 2 hours. All the content of the meeting will be kept confidential and they are related to the objective of this study only. The study aims to develop insight for the stakeholders of nursing profession on the understanding of the factors affecting nursing students' clinical skills development. Your input will be highly contributed to the study. They are invaluable for betterment of the clinical nursing quality in Hong Kong in a long run.

1

The details of the focus group are as follows:

Location:	[redacted]
Date:	[redacted]2020
Time:	2:30pm to 4:30pm

If you have interest to participate in this focus group meeting, please return the below reply slip at [redacted] or contact the undersigned on [redacted]

Thank you for your interest

Yours sincerely,

Irene Wong

[redacted]

Appendix O: Email Correspondence with Participants (Individual Interviews)

invitation for interview

Irene WONG Yuen Fung
Sent: Friday, March 27, 2020 10:11 AM
To: [redacted]
Attachments: Chi Question Nurse Teache~1.docx (18 KB) ; Consent BU.docx (14 KB) ; Individual Consent Form O~1.docx (23 KB) ; Demographic Non-student 2~1.docx (20 KB)

Dear [redacted]

I am Wong Yuen Fung, Irene, [redacted] I am currently conducting a research study, the title is: **Challenges in conducting clinical nursing skills education for the pre-qualified nursing students at the clinical environment of Hong Kong**

This purpose of this study is to explore the challenges facing when conducting the clinical nursing education for the nursing students in the local clinical environment. You will be asked to participate in an individual interview that will last approximately 1 hours. The interview will ask about your opinions and experience regarding the challenges on the clinical nursing skills education to the nursing students in the local clinical environment. All the content of the conversation will be kept confidential and they will be related to the objective of this study only. It is intended to offer insight for the stakeholders of nursing profession for the betterment of local clinical nursing education standard. Your invaluable input will be highly contributed to the study.

If you have interest to this individual interview, please return the below reply slip at [redacted] and write down the availability of your time (e.g. am or pm; which weekday etc) for the individual meeting.

Thank you for your interest

Yours sincerely,
Irene Wong
[redacted]

Reply Slip

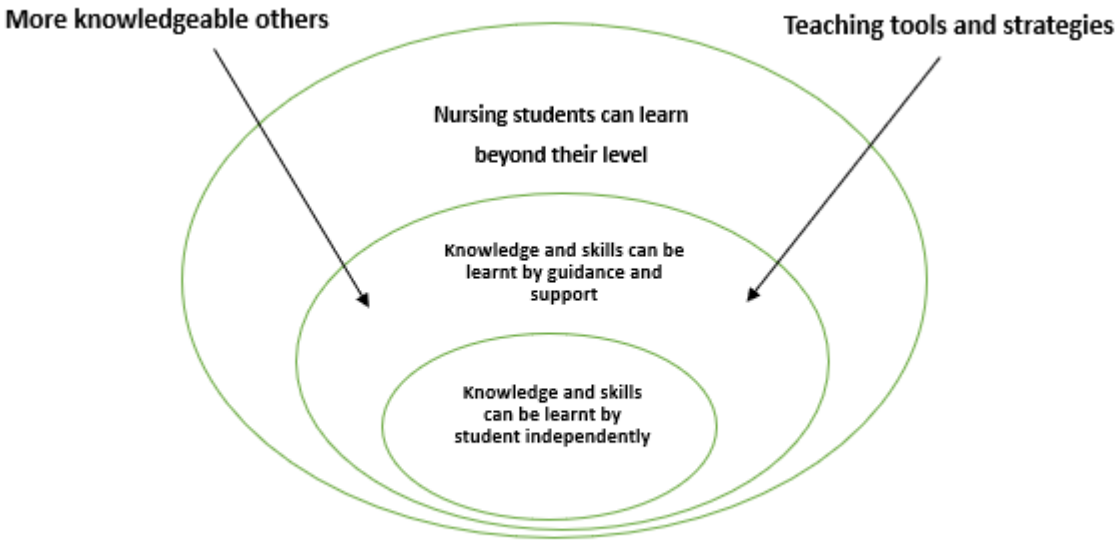
Name: _____
Contact email or number: _____

I have / have no interest to join in the individual interview for the research study

Please √ your availability as appropriate:

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
10am to 12noon							
2pm to 4pm							
3pm to 5pm							
Prefer other timeslot: ( )							

Appendix P: Concept of ZPD and Scaffolding on Clinical Skills Learning



Vygotsky's (1978) Zone of Proximal Development & Scaffolding