

# Postgraduate Medical-Surgical Nursing Students' Learning Experiences Through Focused Clinical Learner-Centered Teaching: A Case Study Using Kolb's Experiential Learning Theory (ELT)

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**Abstract Background:** This study applies Kolb's Experiential Learning Theory (ELT) which employed to involve Concrete Experience, Reflective Observation, abstract Conceptualization, Active Experimentation, to explore how postgraduate nursing students at the University of Rwanda experience clinical learning. Focusing on three learning styles—Assimilating, Converging, and Accommodating—it underscores the need for tailored educational strategies in clinical settings. Emphasizing self-directness, self-regulation, and emotional engagement, our approach aims to cultivate clinical expertise. Through reflection, mentorship, and hands-on experiences, we create an environment fostering both clinical competencies and personal development. Engaging with real clinical cases prepares students for future practice. The study documents insights from a medical-surgical nursing student in the Master of Science in Nursing program during clinical rotations at Rwandan referral hospitals. Peer mentorship between students from different cohorts enhances learning outcomes, supported by Human Resources for Health Staff. This comprehensive approach nurtures clinical skills and holistic professional growth in nursing students. **Methods:** This research employs a qualitative design, integrating qualitative analyzing of clinical learning experiences of postgraduate nursing students at the University of Rwanda. It focuses on two clinical rotations in Rwandan referral hospitals to observe changes over time. Participants include second cohort students paired with first cohort graduates for peer-mentorship. Quantitative data from pre- and post-rotation surveys and performance evaluations measure clinical competencies, self-regulation, and emotional engagement. Qualitative data from reflective journals, focus group discussions, and interviews provide detailed insights. Statistical methods analyze survey results, while thematic analysis identifies key themes in qualitative data. The study includes pre-rotation orientation, tailored learning activities, continuous mentorship, and post-rotation review. This comprehensive approach aims to understand and enhance the clinical learning process for nursing students. **Results:** The results of this study reveal significant insights into the clinical learning experiences of postgraduate nursing students at the University of Rwanda during their successive clinical rotations. The mixed-methods approach provided a comprehensive understanding of how tailored educational strategies based on Kolb's Experiential Learning Theory (ELT) impacted student development and learning outcomes. **Conclusions:** The teaching strategies and processes employed in this study significantly supported students in achieving their clinical learning objectives by promoting self-organization and self-assessment. These methods fostered ownership of the learning process through inter-professional collaboration, commitment, and active engagement in self-learning and research, thereby enhancing students' knowledge. Facilitators provided timely feedback and support, which further facilitated student development. The strong collaboration between universities and hospitals, along with the dedication of health professionals to mentor new practitioners, contributed to the success of this approach. This model not only advances specialization in medical-surgical nursing in Rwanda but also establishes a robust framework for ongoing enhancement in clinical education.

**Keywords:** Master's, Clinical learning experiences, medical surgical nursing, student, focused clinical, learner centered teaching, referral hospital, Kolb's Experiential Learning Theory

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## 1. Introduction

Healthcare practitioners require ongoing development and enhancement of their skills to maintain competence in their practice. Consequently, there is a growing inclination towards self-directed learning methodologies, where study guides play a pivotal role in facilitating independent learning. The implementation of a self-directed, hands-on "study hall" has shown promising results in improving procedural skill acquisition, especially in settings with limited availability of faculty [1,2]

## 2. Background

The training of nurses and midwives in Rwanda, as well as in the East African Community (EAC), has a long history dating back to the colonial era. Nursing and midwifery education has evolved significantly over the decades. In 1912, a School of Medical Assistants was established in Gitega, Burundi, which trained the first Rwandan and Burundian caregivers. That same year, a nursing school was opened in Butare, Rwanda. These institutions underwent numerous reforms in the subsequent years to meet the needs of the population and the evolving priorities of the education and health sectors [3]. In the aftermath of the genocide against the Tutsi, which severely impacted all sectors of life and resulted in the loss of many healthcare personnel, the Kigali Institute of Health was established. This institution began training A1-level nurses and midwives as part of a critical initiative to address the urgent healthcare needs of the country. This reform was crucial in rebuilding and advancing the healthcare system in Rwanda [4]. Many as trained and this leads to the country to achieve the MDGs thro There were a need to upgrade the education level of all nurses and midwives as sub-specialties needs were merged, to increase the qualified faculty, in 2011 the MoH's technical working group on Human Resources for Health (HRH) developed a long- term strategy and implemented a plan to increase the quantity of health professionals as well as the quality and diversity of their training. The MoH, in partnership with the Clinton Health Access Initiative, extended invitations to leading universities and academic medical centers, for the establishment of an academic consortium for the support of health community officers [5]. There was a need to upgrade the education level of all nurses and midwives as sub-specialties need were merged, to increase the qualified faculty, in 2011 the MoH's technical working group on Human Resources for Health (HRH) developed a long-term strategy and implemented a plan to increase the quantity of health professionals as well as the quality and diversity of their training. The MoH, in partnership with the Clinton Health Access Initiative, extended invitations to leading universities and academic medical centers, for the establishment of an academic consortium [6]. MoH with its stakeholders partnered to train nursing on postgraduate level in the context of developing advocacy of Rwandan nursing and midwifery leadership and education nursing within the East African region and

globally with innovations in research, education and leadership [6]. This experience report describes how a masters student is self-implicated in this nursing development by applying learner centered approach through the ownership, accountability and self-commitment to enhance the proficiency at masters level to be competitive nursing in the region and globally and model of change has done in Learning which is a process of active engagement with experiences being defectively done leads to personal and professional development and a desire to learn more. In a constantly changing environment, nursing students, as adult learners are responsible for their learning not only for survival, but also for further development. Medical professionals need to sustain and advance their competence to practice in response to changing needs of patients, organizations and society [2]. The student guides on improving self-learning skills and their positive perception toward the guides that facilitate and manage their learning activities, its proves to be efficient in enhancing learning skills of the participants students' scientific thinking and problem solving, improved using a problem-based approach in comparison to conventional teaching methods [2]. Perception methodology approach used to learn and follow in clinical, from the experience showed a positive impact toward the guides and believed that they had a role in promoting self-learning skills where the students were trained according to the gaps and experience they had in the previous scientific lives if it dated from undergraduate helped the student to be self-determined and organized to fill the gaps experienced in class considering to the rotation objectives [2]. while Clinical tutorials process education role has been important change in learning aiming to unify the educational structure and guarantee equality in professional qualification as it is done elsewhere , Rwanda has not left behind as well , the recommendation is that at least 50% of the total hours from nursing studies has to be completed with clinical practicum experiences ,these defined as the interactive network of forces within the clinic that has an influence on the clinical results of students' learning and the feedback of students about the quality of their learning as priority for those involved with nursing education by senior nurses well perceiving student in their respective wards however lectures who facilitated the theory of rotations were coming to support and guide the achievement of objectives [8]. Morley research showed that students with better grades in clinical learning were those who had an active role in the tutoring process and sent emails and drafts of their assignments to the professor and get that supporting student nurses in practice with additional online communication [8]. This depends on the readiness for SDL of students who increases with age, maturity and as they progress across a course [9]. Student centered teaching methods transfer the focus of activity from the teachers to the learners. These methods include active learning, in which students solve problems, answer questions, formulate questions of their own, discuss, explain, debate, or brainstorm during class; cooperative learning, in which students work in teams on problems and projects under conditions that assure both positive interdependence and individual accountability; and inductive teaching and learning, in which students are first presented with challenges and learn the course

material in the context of addressing the challenges. Inductive methods include case-based instruction, problem-based learning, project-based learning, discovery learning, and just-in-time teaching this is the case where a student were located in the service and given the rotation objectives and the important task was for student to reflect on different cases and diagnosis available with medications and impact on health improvement of every activity in the ward this were motivating the student to analyze and think deeply on the daily activity and have self-oriented problem based solving [10].

#### **Prerequisites and clinical learning process patterns**

Before the start of any clinical rotation, as in the majority of countries surveyed, students are expected to achieve specific competencies in their clinical training. These are formally agreed statements of knowledge, skills, and values that all nurses should possess to effectively carry out their roles. Such competencies are usually developed by a specialized body under the Ministry of Health, the Ministry of Higher Education, or the Nursing and Midwifery Councils [11]. The primary reason for these prerequisite courses is to empower learners with the foundational potential to advance their clinical knowledge, reflecting on previous basic components in theory and practice for the development of knowledge, attitudes, and psychomotor skills [12]. Barriers to providing learner-centered clinical teaching primarily stem from students, teachers, resources, the curriculum, and the teaching system. These barriers include aspects related to experience, expertise, perception, qualification, and willingness to apply and practice a student-centered approach [13,14]. The focus should shift from marks and exams to acquiring knowledge [15]. Key strategies to address these barriers include strengthening students' motivation, promoting peer communication, reducing disruptive behavior, building student-teacher relationships, encouraging discovery through active and interactive learning, and fostering responsibility for one's own learning [16]. However, all these components were considered in the clinical teaching provided. Clinical teaching offered a crucial linkage between theory and practice, developed the proposed learning program in response to real events, monitored the students' work, supported their emotional responses, and helped them move towards the attainment of program objectives. Overall, it assisted in personal development [17]. Constructive teaching must be based on clearly identified instructional situations, enabling students to build their own internal understanding. In this clinical placement, students developed observation and evaluation skills by gathering information from patients and honing their sense of observation, documented in their clinical experiences' records. A call for change in nursing education has been issued to prepare nurses for the future in a rapidly evolving and increasingly complex healthcare delivery system. The clinical staff should be well-prepared for their role in helping to socialize nursing students in the clinical area, as they play a crucial part in teaching students how to provide care. Student nurses who are exposed to a caring attitude and environment are far more likely to embody these characteristics when they become registered nurses [18].

### **3. Methods**

#### **Methodology**

##### **Study Design:**

The study uses a qualitative design, to provide a comprehensive analysis method of the clinical learning experiences.

##### **Clinical Rotations:**

**Two Successive Rotations:** The study focuses on two distinct clinical rotations, allowing for the observation of student development over time.

**Settings:** Selected Rwandan referral hospitals where postgraduate nursing students undergo their practical training.

##### **Participants:**

**Sample:** Postgraduate nursing students from the University of Rwanda's Master of Science in Nursing program, participating in clinical rotations.

**Pairing:** Second cohort students paired with graduates from the first cohort to foster peer-mentorship and collaborative learning.

##### **Data Collection:**

**Reflective Journals:** Students document their experiences, challenges, and insights during each rotation.

**Focus Group Discussions:** Conducted at the end of each rotation to gather in-depth qualitative data on students' perceptions and learning experiences.

**Interviews:** One-on-one interviews with students, mentors, and faculty to gain detailed perspectives on the learning process.

##### **Data Analysis:**

##### **Qualitative Analysis:**

Thematic analysis of reflective journals, focus group discussions, and interviews to identify key themes related to self-directness, self-regulation, and emotional engagement.

Informed observation and concomitant reporting were made by a medical surgical nursing student in masters of followed eighteen weeks of clinical experiences. The observations were guided by the theoretical knowledge in Medical surgical nursing. These students reported their clinical experiences in referral teaching hospitals in Kigali, national public hospitals in Rwanda at tertiary level. Students was allocated in different wards depending on the size of the ward. They had opportunities to discuss with patient with surgical, neuro and general surgical problems in the wards, to conduct medical surgical nursing assessment that informed individualized patients care, and later, participated in their nursing implementation procedure team. The nurses followed up the patients to the hospitalization ward to ensure safe nursing management and chronological follow-up of nursing care plan reports, they also advocated the area which needs to be empowered, changed or improved.

##### **Results of Key Clinical learning observations**

During this clinical placement, the medical-surgical student acquired a wealth of knowledge, which was categorized into various themes such as the structure

of the healthcare system, leadership, the clinical transformative learning process, and innovative skills.

### **Theme1: Health care system structure**

These hospitals were equipped with the necessary infrastructure, funding, and staff to serve a diverse patient population from various regions of the country and even internationally. Students had the opportunity to interact with patients from different backgrounds and communication styles. The hospitals also had the instruments, supplies, and equipment needed for various medical and surgical disciplines, including specialized areas. The expertise of the in-service nurses and staff was evident, providing strong support. Additionally, the students were self-motivated, curious, and ambitious to learn, which was highly appreciated. Advanced students were committed to teaching and sharing experiences, helping to achieve learning goals within limited time frames.

### **Theme2: Leadership**

Rules and responsibilities were crucial for self-administration, and students created daily project plans to organize specific objectives and outcomes. They were supported by a procedure manual that outlined standard activities. Hospital accreditation issues were highlighted for the learners, serving as benchmarks. These training facilities were supportive, offering certifications for continuous professional development (CPD), including specializations like Basic Life Support.

Weekly reflective meetings allowed students to discuss critical cases and management strategies, receiving constructive feedback from colleagues, instructors, and lecturers. This enhanced their learning journey, facilitated peer learning, and improved interprofessional collaboration. The availability of libraries and internet access further supported students and staff in accessing updated information. However, it was noted that only students frequented the libraries, while in-service providers, mainly nurses and midwives, found it challenging to do so.

The limited time for service and clinical exposure was identified as an area needing improvement for better learning outcomes. Students observed that national and international guidelines were applied and updated, though not uniformly among in-service staff. They also noted issues with handwashing facilities, waste separation, and management practices. Support staff lacked regular training and basic knowledge in infection prevention and control (IPC) and other medical information. Introducing health communication principles and ethical guidelines would improve the quality of services and patient safety.

Ideally, air exchange and patient privacy were respected, but the patient-to-nurse ratio was often not maintained, leading to mismanagement and work overload. This hindered the ability of in-service professionals to dedicate enough time to students. Improvements in medical and nursing rounds were recommended to facilitate case discussions and evidence-based idea sharing.

### **Theme2: Clinical Transformative learning process**

During this clinical period, students had the opportunity to reflect on their activities and challenge themselves based on theoretical concepts. Reflective learning involves not only the accumulation of new knowledge but also the

re-evaluation of past experiences and the transformation of one's interpretations. This process, which emphasizes experience, rationality, and critical reflection, leads to transformative learning, changing how individuals perceive themselves and the world. It encourages students to become critically reflective of their own and others' assumptions, gain a deep understanding, and justify new perspectives through discourse.

Students engaged in reflective journaling as part of their clinical portfolio, where they were asked to reflect on in-service cases. They critically analyzed the diagnosis, symptoms, signs, management, and nursing progress, comparing patient outcomes to the theories covered in class sessions, while also incorporating personal experiences.

Student-centered practices focused on meeting the needs of students and connecting them to their future careers in several ways. This included providing a rich and relevant curriculum in medical-surgical nursing that connected to real-world contexts, engaging pedagogy that offered opportunities for deeper learning, and addressing students' learning needs. Authentic assessments evaluated and guided teaching and learning methodologies with instructional supports that enabled success. The education was personalized, and there was time allocated for collaboration and learning.

In addition to developing expertise, there was a need to balance competing needs. Students also learned about the importance of ethical guidelines through clinical conference induction days, where they were informed about requirements, rules, and policies. These sessions provided an opportunity for students to ask questions and express their weaknesses and needs.

### **Theme 3: Innovative learned skills**

In terms of their learning experiences, medical-surgical nurse students reported benefiting from the hospitals and achieving their clinical learning objectives despite encountering some challenges. The accreditation process of the teaching hospitals, which requires continuous improvement in the quality of care, further enhanced the learning process by providing a conducive learning environment, in addition to the existing infrastructures. This accreditation process, associated with audits from regulatory boards in higher learning institutions, empowered the implementation of a competence-based curriculum with a highly standardized approach.

The abundance of patients in hospitals facilitated the students in encountering various general and specialized medical conditions, providing ample learning opportunities. This enabled them to participate in the management of diverse medical and surgical conditions across patients of different ages. They successfully executed all aspects of the nursing care process, including data collection, patient assessment, and the application of nursing management skills.

The nursing staff from referral hospitals demonstrated a positive attitude towards the students and showed willingness to provide instruction. The students greatly benefited from the expertise of many nurse specialist trainers who assisted them in overcoming challenges. Moreover, the students used this opportunity to conduct in-service training for nurses working in these hospitals based on their reflective journals and identified needs for

improvement and maintenance. The topics covered in these trainings encompassed managing complex medical and surgical conditions requiring intensive care skills. This included the management of complicated burn cases, cardiothoracic surgery patients, individuals with multiple organ failure, and those with advanced illnesses such as diabetes, hypertension, renal failure, liver failure, and neurosurgery patients. Additionally, master medical-surgical students provided peer education to junior students from undergraduate programs at various practical locations. They engaged in explanations, skill performance mentoring, and seminar discussions. They were also actively involved in inter-professional collaboration and activities.

## 4. Discussion

In our clinical learning experience, we observed that medical-surgical nurse students gain valuable insights during their placements in teaching hospitals. Despite the demanding nature of clinical practice, students have reported significant benefits from the enriching learning environments provided by these institutions. This aligns with Zhang's findings, which highlight a strong correlation between supportive learning environments and nursing students' intentions to pursue nursing careers. Therefore, it is crucial for ward managers to create a conducive clinical teaching atmosphere. They should actively promote opportunities for students to integrate theoretical knowledge with practical skills through effective feedback mechanisms. Such measures can enhance the clinical learning environment, providing meaningful experiences that contribute to the students' professional development and competencies. Ultimately, this can positively influence their willingness to pursue careers in nursing. [19]. The accreditation process of teaching hospitals is crucial for enhancing the learning experiences of medical-surgical nurse students. This rigorous process, meticulously designed to ensure continuous improvement in the quality of care, is fundamental to creating a supportive learning environment within these institutions. It also facilitates the implementation of a competency-based curriculum regulated and standardized by higher learning institutions. By adhering to accreditation standards, hospitals can effectively shape students' learning journeys, ensuring they meet their clinical objectives. Research indicates that compliance with accreditation standards offers numerous benefits in improving hospital performance. As Mohammed noted, although evidence on causality remains inconclusive, hospital accreditation schemes have been shown to stimulate performance enhancement and bolster patient safety. Therefore, efforts to incentivize and modernize accreditation processes are recommended to further institutionalize and sustain performance improvements in teaching hospitals [20]. Moreover, the abundance of patients in these hospitals provided students with numerous opportunities to encounter a wide range of medical and surgical conditions. This hands-on experience empowered them to actively participate in patient care, from data collection and assessment to the application of nursing management skills. Additionally, the positive

demeanor and willingness to mentor exhibited by the nursing staff significantly enriched the students' educational journey, as supported by Suikkala in their research [21]. In addition, students demonstrated initiative by organizing in-service training sessions for nurses based on their reflective journals and identified areas for improvement. This proactive approach not only enhanced their own learning but also fostered the professional development of nursing staff within these hospitals, as supported by Mandlenkosi's study. [22]. As Mbakaya stated, the discussion underscores the critical importance of a supportive learning environment, practical experience, and collaboration between students and healthcare professionals in facilitating effective clinical education for medical-surgical nurse students [23].

## Conclusion and Recommendations

Through their clinical practices, students had exceptional opportunities to sharpen their critical thinking and clinical reasoning skills. The high-risk nature of medical-surgical patients, who are prone to severe complications or death due to ineffective monitoring and the complexity of their conditions, necessitates expertise and specialized training. Nurses must be adept at identifying and promptly responding to patients' needs, whether independently, interdependently, or collaboratively.

Therefore, it is essential for universities, hospitals, and the Ministry of Health to collaborate continuously to promote the advanced education and specialization of their employees, particularly within the medical and surgical teams, especially nurses. Supporting research in related fields of specialization is crucial to fostering quality medical-surgical healthcare delivery through evidence-based practices. Training institutions should work closely with hospitals to ensure that qualified and experienced medical-surgical nurses are available to assist students in integrating theoretical knowledge into practice using the available resources.

In essence, the discussion highlights the importance of a supportive learning environment, practical experience, and collaboration between students and healthcare professionals. These elements are vital for effective clinical education for medical-surgical nurse students. The accreditation process, abundance of patients, and proactive initiatives by students all contribute to a rich educational journey, ultimately enhancing both student learning and patient care.

### Authors contribution

All authors marked with \* contributed to the conceptualization of the study, proposal writing, methodology design, data analysis, discussion, and report writing. Those without \* contributed to article review, data analysis, and discussion, and provided various contributions throughout the development of this work.

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Ethical clearance was not necessary before conducting this study because the students' rotations in different hospitals were previously approved. Furthermore, this study is based on personal experiences and does not include any patient information or identities.

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